

# **WATERPROOFING BINDER**



*The Building Envelope Company*

**09.15.11**



# **WATERPROOFING BINDER**

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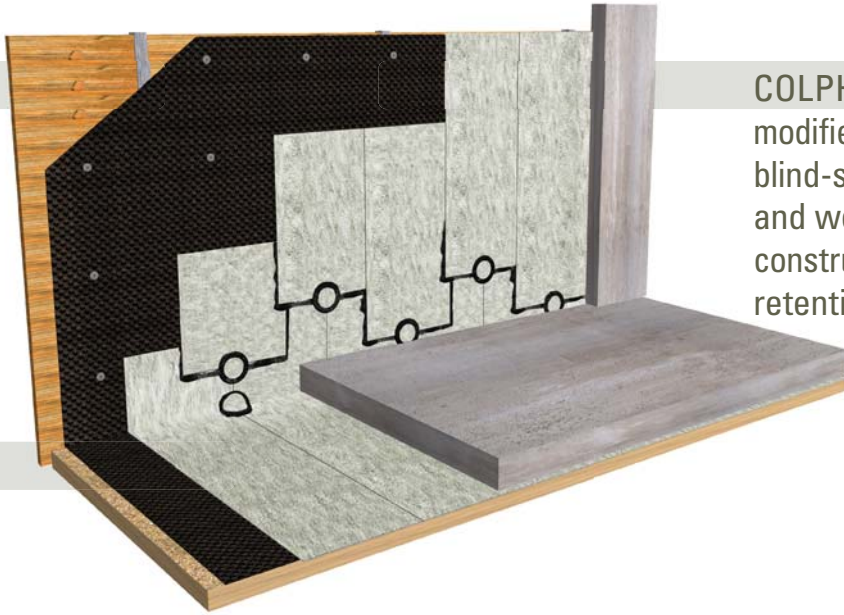
**Dow ROOF MATE Information Sheet**

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## FOR BLINDSIDE WATERPROOFING APPLICATIONS



**COLPHENE BSW (F)** is a fully reinforced SBS modified bitumen membrane specially designed for blind-side waterproofing applications, mud slabs and work slabs. In addition, it can be used with construction methods such as lagging or shotcrete retention walls. It is composed of a select blend of SBS modified bitumen applied onto a non-woven polyester reinforcement.

**Thickness 108 mils • Dimension 39 in. x 49 ft.**

The sanded under face is covered by a silicone release film at the selvage edge and the top face is covered with polyester fleece.

The polyester fleece top face exhibits tenacious adhesion when concrete is poured against it and therefore provides a continuous and integral seal to the structure, preventing ingress or migration of water around the structure.

### ADVANTAGES

- IMPERMEABLE TO MOISTURE
- EXCELLENT ADHESION TO POURED CONCRETE
- FULLY ADHERED WATERTIGHT LAPS
- SUPERIOR TENSILE STRENGTH AND PUNCTURE RESISTANCE
- CAN BE USED IN A PERMANENT FORMWORK APPLICATION
- SUPERIOR METHANE BARRIER
- EASY TO INSTALL

## THE SYSTEM INCLUDES:



Colphene BSW F Rolls and Field



Inside Corner Detail



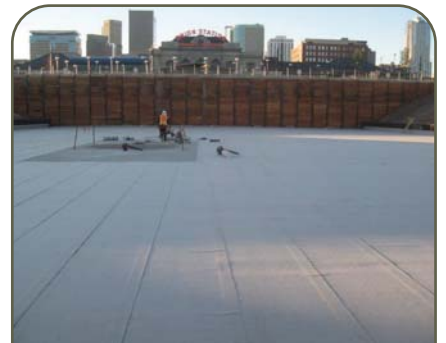
End Lap



End Lap



T-Joints and End Lap



Overview

### ■ SOPRADRAIN ECO-VENT

- High-density drainage panel with a factory-laminated geo-textile
- Eliminates the need for a protection panel
- Great capacity for filtration and air exchange

### ■ COLPHENE LIQUID MEMBRANE

- Membrane adhesive
- Two component, elastomeric, solvent free, cold applied material
- To seal end-laps and/or reinforcement at penetrations/projections and membrane terminations
- Available in 1.5 L cartridges

### ■ SOPRABOARD

- Semi-rigid protection board
- Composed of a mineral fortified asphaltic core formed between two saturated fibreglass felts
- To be used as a substrate material in flat or low-slope roofing

## **SHEET MEMBRANE BLIND SIDE WATERPROOFING**

### **COLPHENE BSW (F)**

*This specification serves as a guideline and must be modified, as necessary, by the Designer of Record to suit the needs of the individual project. This specification is prepared in accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Any improvements and changes to the content of this specification can be made only with the written authorization of the Designer of Record. ~~[delete this paragraph]~~*

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

##### **1.2 RELATED WORK**

- A. Division 2 – Site Work
- B. Division 3 – Concrete
- C. Division 4 – Masonry
- D. Division 7 – Dampproofing & Waterproofing

##### **1.3 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
  - 1. D 412 Standard Test Methods for Tensile Strength
  - 2. D 412 Standard Test Methods for Ultimate Elongation
  - 3. D 1970 Standard Test Methods for Flexibility at Cold Temperature
  - 4. D 5601 Standard Test Methods for Tear Resistance
  - 5. D 1876 Standard Test Methods for Lap Adhesion
  - 6. D 570 Standard Test Methods for Water Absorption
  - 7. D 903 Standard Test Methods for Adhesion of Poured Concrete
  - 8. D 5385 Standard Test Methods for Resistance to Hydrostatic Head
  - 9. E 154 Standard Test Methods for Puncture Resistance
  - 10. E 96(B) Standard Test Methods for Water Vapor Permeance
- B. International Organization for Standardization (ISO) 9001:2000 Quality Standard

##### **1.4 SYSTEM DESCRIPTION**

- A. Furnish and install a completed waterproofing assembly including a self-adhered sheet membrane specifically designed for blind side waterproofing and a drainage / protection course (optional). To ensure total system compatibility all products shall be purchased from a single-source manufacturer.

## 1.5 SUBMITTALS

- A. Submit three (3) copies of the most current technical data sheets. These documents must describe the physical properties of the specified materials and explanations about product installation, including installation techniques, restrictions, limitations and any other manufacturer recommendations.
- B. Certification that all products are in compliance with specified ASTM criteria.
- C. Certification that all components of the waterproofing assembly are being supplied and warranted by a single manufacturer.
- D. Provide a specimen warranty from the manufacturer that includes all components of the waterproofing installation.

## 1.6 QUALITY ASSURANCE

- A. **Refer to Section 1.5 SUBMITTALS.** Include items A, B, C & D.
- B. The installer must demonstrate his or her qualification to perform the work of this section by providing written evidence from the manufacturer providing the single-source warranty that the installer is an applicator in good standing and is authorized to install the specified waterproofing system on the project.
  - 1. Documentation of the installer's qualifications must be written on the manufacturer's letterhead, include the name and address of the installer and the full name and physical address of the waterproofing installation in the body of the letter, and must be signed by an authorized representative of the membrane manufacturer.
- C. **Refer to Section 1.4 DESCRIPTION.** All components of the waterproofing assembly must be supplied by the membrane manufacturer offering the single-source warranty.
- D. The manufacturer offering the single-source warranty must have full-time technical support staff to provide the installer with technical assistance in the installation of the products included in the warranty.
- E. Pre-Construction Conference. All parties responsible for work of this section are required to attend a pre-conference meeting to review the details of the project as they pertain to the integrity of the waterproofing assembly.
  - 1. All parties responsible for the work of this section are required to attend, including the architect, owner, installer and manufacturer offering the single-source warranty.
  - 2. All parties are to review the installation procedures of this section and the coordination required with related work.

## 1.7 MANUFACTURER'S REPRESENTATIVE

- A. The waterproofing materials manufacturer may delegate a representative to visit the work site at commencement of work.

## SOPREMA Guide Specification

### Blind Side Waterproofing

- B. At all times, the contractor shall permit and facilitate access to the site by the manufacturer's representative cited above.

#### **1.8 DELIVERY, STORAGE & HANDLING**

- A. Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instruction for use and all identifying numbers.
- B. Store all materials in protected and well-ventilated areas. Only materials to be used the same day shall be removed from this location. Special care may be required at temperatures below 40°F (see product data sheets). Keep all materials away from open flame or welding sparks.
- C. Pails of materials shall be carefully stored and adequately protected in accordance with the manufacturer's recommendations.

#### **1.9 PROJECT CONDITIONS**

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.
- B. It is imperative that the General Contractor provide for adequate protection of the installed membrane to prevent damage that might arise from work performed by the other trades.
- C. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat, etc.) to come in contact with the waterproofing membrane. Contaminated membrane must be cut out and replaced in accordance with the Approved Details.
- D. Concrete Deck/Wall Surface Condition; refer to Section 1.02 Related Sections.
- E. Concrete Deck/Wall Preparation; refer to Section 3.01 Surface Preparation.

#### **1.10 WARRANTY**

- A. Sheet Membrane Waterproofing: Upon completion of work, the contractor shall supply the owner with a single-source warranty issued by the manufacturer of the waterproofing assembly.
- B. The product manufacturer shall issue a written and signed document in the name of the owner, certifying the product will meet all the physical characteristics published by the manufacturer, for a period of [five (5)] [ten (10)] years, starting from the date of completion of installation of membrane. No letter amending the manufacturer's standard warranty will be accepted and the warranty certificate must reflect these requirements.

**\*\*\* CONTACT SOPREMA FOR WARRANTY TERMS AND CONDITIONS\*\*\***

## **PART 2 – PRODUCTS**

# SOPREMA Guide Specification

## Blind Side Waterproofing

### 2.1 GENERAL

- A. Waterproofing membrane components and accessories shall be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

Acceptable Manufacturer: Soprema Inc.  
310 Quadral Dr.  
Wadsworth, OH 44281  
Phone: 800-356-3521  
Fax: 330-334-4289  
Web Site: [www.soprema.us](http://www.soprema.us)

### 2.2 MATERIALS

- A. SHEET MEMBRANE WATERPROOFING: Colphene BSW (F) manufactured by Soprema; a non woven polyester reinforced SBS modified bitumen membrane, specifically designed for blind side waterproofing. Colphene BSW (F) has a sanded under face with a four inch self adhered selvage edge covered by a silicone release film. The top face, against which the concrete is poured, has a polyester fleece with a four inch self adhered selvage edge covered by a silicone release film.

Specified product: **COLPHENE BSW (F) by SOPREMA.**

| Properties                      | Standards              | COLPHENE BSW (F)            |
|---------------------------------|------------------------|-----------------------------|
| Thickness                       | ASTM D 3767            | 108 mils (2.70 mm)          |
| Tensile strength                | ASTM D 412             | 23.7/18.5 MPa               |
| Ultimate elongation             | ASTM D 412             | 67/74 %                     |
| Flexibility at cold temperature | ASTM D1970             | Unaffected at -23 °C        |
| Puncture resistance             | ASTM E154              | 1210 N                      |
| Tear resistance                 | ASTM D 5601            | 125 N                       |
| Lap peel adhesion               | ASTM D1876             | 1360 N/m                    |
| Water absorption                | ASTM D 570             | 0.5 %                       |
| Adhesion of poured concrete     | ASTM D 903 (Mod.)      | 2880 N/m                    |
| Water Vapor Permeance           | ASTM E96 (Procedure B) | 0.21 ng/Pa.s.m <sup>2</sup> |

- B. SURFACE PRIMER: Shall be a primer used specifically for self-adhered membranes to substrates such as wood, metal or concrete. Primer is composed of a blend of natural resins and synthetic rubber; may be spray or roller applied (if required by construction conditions or detailing).

Specified product: **ELASTOCOL AQUADERE by SOPREMA**

- C. REINFORCEMENT MEMBRANE: Shall be a self-adhered waterproofing membrane composed of SBS modified bitumen and a Tri-Laminate Woven Polyethylene Facer. The self-adhesive underside is covered by a silicone release sheet. (See PDS for Colphene 3000 primer requirements)

Specified Product: **COLPHENE 3000 by SOPREMA**

D. PREFABRICATED DRAINAGE BOARD:

1. Shall be a composite drainage board consisting of a post-industrial recycled polypropylene drainage core of fused entangled filaments and a geocomposite fabric bonded to one side.

Specified product: **SOPRADRAIN ECO VENT by SOPREMA**

2. Shall be a composite drainage board consisting of a post-industrial recycled polypropylene drainage core of fused entangled filaments and a geocomposite fabric bonded to both sides.

Specified product: **SOPRADRAIN ECO 2 by SOPREMA**

3. **ALTERNATE** Prefabricated Drainage Boards, **per SPECIFIER**, and as approved by **SOPREMA, INC.**

| Properties                    | Standards   | Values  |
|-------------------------------|-------------|---|
| Thickness                     | ASTM D-1777 | <b>ECO VENT, ECO2</b> – 0.45 in.                          |
| Compressive Strength          | ASTM D-1621 | <b>ECO VENT, ECO2</b> - >30,000 psf                       |
| Flow@ 3000 psf & 1.0 Gradient | ASTM D-4716 | <b>ECO VENT</b> – 16 gpm/ft<br><b>ECO 2</b> – 12.9 gpm/ft |
| Puncture Strength             | ASTM D-4833 | <b>ECO VENT, ECO2</b> – 70 lbs.                           |
| Flow Rate                     | ASTM D-4491 | <b>ECO VENT, ECO2</b> – 120 gpm/ft <sup>2</sup>           |
| Grab Tensile Strength         | ASTM D-4632 | <b>ECO VENT, ECO2</b> – 120 lbs                           |
| Apparent Opening Size (AOS)   | ASTM D-4751 | <b>ECO VENT, ECO2</b> – 70 sieve                          |
| Roll Dimensions               |             | <b>ECO VENT, ECO2</b> – 39" x 100' (324 sf)               |

P

E. PROTECTION BOARD:

1. Asphaltic Hardboard: Sopraboard manufactured by Soprema; shall be a pre-molded, semi-rigid asphaltic protection board composed of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

Specified product: **SOPRABOARD by SOPREMA (or SOPREMA approved Alternate).**

F. ACCESSORY PRODUCTS:

1. **WATERPROOFING MASTIC:** Shall be a one part urethane mastic containing SBS modified bitumen, fibers and mineral fillers and alternate Soprema mastic as approved.

SOPREMA Guide Specification  
Blind Side Waterproofing

Specified product: **SOPRAMASTIC by SOPREMA**

2. **WATERPROOFING LIQUID MEMBRANE:** Shall be a two part component, elastomeric, solvent free, cold applied adhesive to seal end laps and/or as a sealant bed/fillet for reinforcements at penetrations, drains, projections, angle changes, inside and outside corners and appropriate membrane tie ins and terminations (Colphene Liquid Membrane): Shall be a high performance, two component, rapid curing PMMA (poly methyl methacrylate) acrylic resin formulation for use at end laps only (Alsan RS 230 Flash).

Specified product: **COLPHENE LIQUID MEMBRANE or ALSAN RS 230 FLASH by SOPREMA**

3. **MECHANICAL FASTENERS:** Fasteners to wood lagging: Cadmium-plated, flat headed thread point screws, sufficient length to penetrate 1” into wood lagging surface. Metal plates: 3” round stress plates, with anchor screws described above. Site conditions and construction detailing may allow/require alternate fastening methods. See SOPREMA for approved alternate methods.

Specified product: **PRE-ASSEMBLED PLATES & FASTENERS by SOPREMA**

## **PART 3 – EXECUTION**

### **3.1 SURFACE INSPECTION**

- A. The installer shall examine conditions of substrates and other conditions under which this work is to performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are completed.
- B. Do not install materials in conditions of inclement weather.

### **3.2 SURFACE PREPARTION**

- A. Refer to membrane manufacturer’s literature for requirements for preparation of substrate. Surfaces shall be structurally sound and free of any voids or sharp protrusions. Remove contaminates such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to membrane manufacturer.
- B. Verify the compatibility of all membrane components with curing compounds, coatings or other materials which are already installed on the surfaces to be treated.

### **3.3 DRAINAGE BOARD INSTALLATION**



## SOPREMA Guide Specification

### Blind Side Waterproofing

- A. Mechanically fasten drain board to wood lagging using approved fasteners.
- B. Place and secure prefabricated drainage panels with the filter fabric facing the wood lagging. Lap edges and ends of geotextile to maintain continuity. Protect installed drainage panels during subsequent construction. Install drainage panels in accordance with membrane manufacturer's written instructions.

### 3.4 MEMBRANE INSTALLATION

- A. Refer to membrane manufacturer's literature for recommendations on installation, including but not limited to the following:
  - 1. (If required by site conditions and detailing) Apply primer by spray or roller at a rate recommended by the membrane manufacturer. Recoat areas not waterproofed if contaminated by dust. Allow to dry per membrane manufacturer's recommendations. (See PDS)
  - 2. Reinforcing strips of Colphene BSW (F) or Colphene 3000 shall be applied in areas of potentially high substrate stress. These areas include interior and exterior corners, steel members (soldier piles), etc. The sanded side of the Colphene BSW (F) reinforcing strips will be adhered to the fleece side of the installed Colphene BSW (F) membrane, embedded with a full trowel application of Colphene Liquid Membrane. Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant. All cold joints will be reinforced with a bed of Colphene Liquid Membrane and a continuous strip of membrane extended a minimum of 6" past the cold joint(s) in all directions. As appropriate, a bead of Colphene Liquid Membrane will be applied to all perimeter edges of all reinforcement plies. Target plies at inside corners will be installed as described above and will be a circular shaped target ply patch extending a minimum of 6" in all directions from the inside corner.
  - 3. Starting at the high point, vertically align the Colphene BSW (F) sheet, sanded under face toward the lag wall, mechanically fastening/tack nailing in place per SOPREMA approved details. Remove the release paper on both sides of the self adhered side lap edges, adhering one to the other (fleece side selvage edge to sanded side selvage edge). Roll seams with an approved roller and hand pressure, ensuring that all laps are firmly adhered and that there are no voids or fishmouths. A hot air welder may be required to achieve an acceptable, properly adhered side lap. As each floor is poured and the work continues up the vertical wall, remove mechanical fastening/tack nailing ensuring holes are adequately sealed and lapped as required by SOPREMA details and specifications.
  - 4. Subsequent rolls must be installed in the same manner and should be aligned with the preceding roll with a side lap of 4" (101mm). End laps must be overlapped a minimum 6" (152mm) and embedded in and caulked with Colphene Liquid Membrane. Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant. For an alternate sealant Alsan RS 230 Flash is acceptable. In all instances the fleece back is to be removed prior to the application of the approved adhesive.
  - 5. Holes, tears, abrasions, blemishes and imperfections to the membrane and in the assembly must be repaired with Colphene BSW (F) or Colphene 3000 embedded in and caulked with Colphene Liquid Membrane. Alsan RS 230 Flash and fleece reinforcement, may be used, installed per SOPREMA details and specifications. The repair membrane must exceed the affected surface area a minimum 6" (152mm) on all sides.

## SOPREMA Guide Specification

### Blind Side Waterproofing

6. Terminations: Membrane shall be terminated in accordance with Soprema Approved Details. The uppermost edge of the membrane shall be caulked with Sopramastic, then mechanically fastened to the wood lagging using approved fasteners and termination bar. The termination bar will be set in a full bed of Sopramastic and the top edge of the bar will be caulked with the same material. Note: All top of the wall cut edges in the field application will receive a bead of Sopramastic at the end of the days work.
7. The contractor shall check all seams and ensure correct adhesion, proper repair and detailing of the membrane and accessories at the end of each workday and prior to the concrete being poured.

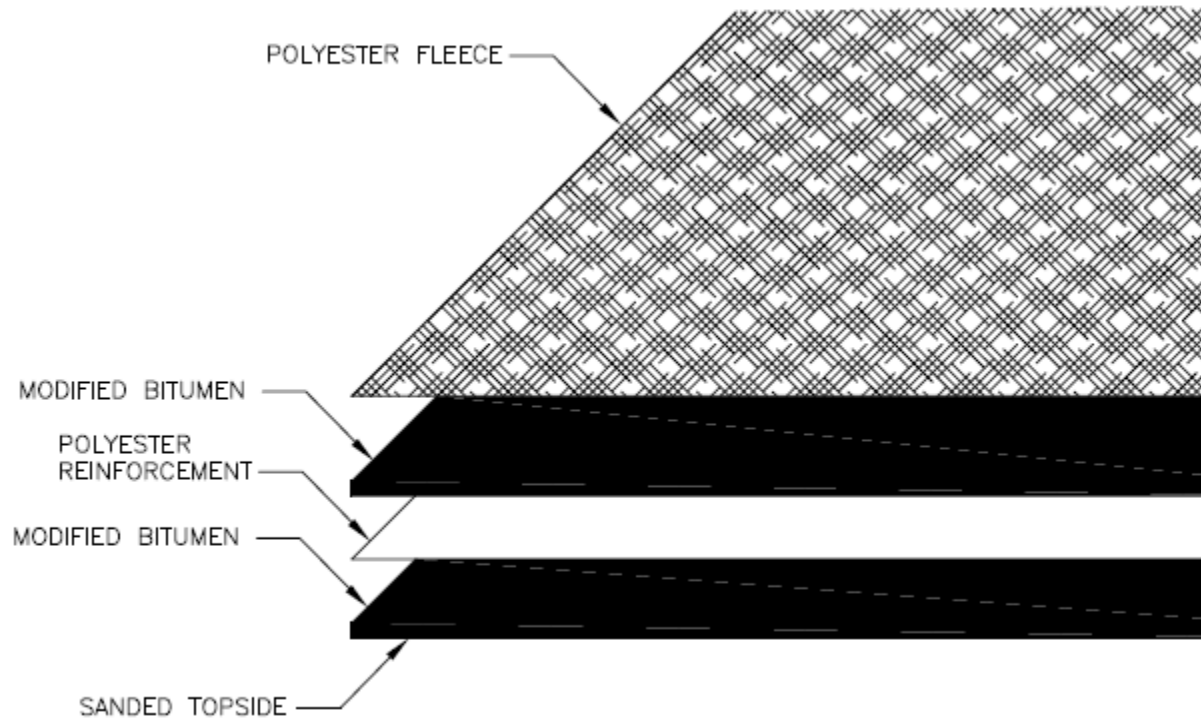
#### B. Horizontal Application

1. Prior to beginning work verify substrate and drainage conditions meet or exceed the design of the Architect and Engineer of Record.
2. Install specified Sopradrain over dry evenly and properly compacted substrate or mud slab. Note: geocomposite filter fabric must be placed in contact with the substrate. Use all published seaming and lapping requirements per SOPREMA standard installation procedures.
3. Install Colphene BSW (F) membrane with sanded under face placed down against the surface of the specified Sopradrain drainage board. Follow all standard installation procedures detailed above 3.4; A1 through A7. No tack nails or fasteners are to be used on any horizontal surface. Where Colphene BSW (F) is to tie in to positive side vertical wall waterproofing, it must be reinforced as described above and be extended under the perimeter wall/footer and provide for a 12" tie in on the exterior vertical wall. All joints must receive a bed or bead of Colphene Liquid Membrane as appropriate to the condition and as required by SOPREMA.
4. The contractor shall check all seams and ensure correct adhesion, proper repair and detailing of the membrane and accessories prior to concrete being poured.
5. Should water testing be required, Electronic Breach Detection may be considered.

**-END OF SECTION-**

## Colphene BSW Training and Application Guide

### Colphene BSW Waterproofing Membrane.



#### **1. Prepare substrate**

- Substrate must be structurally sound.
- Surface must be free of voids, spalled areas, loose aggregate, sharp protrusions.
- Remove all contaminants (such as grease, oil and wax) from all exposed surfaces.
- Remove dust, dirt, loose stone and debris (when dealing with a mud slab substrate).
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Do not install materials in conditions of inclement weather.
- Verify the compatibility of all membrane components with curing compounds, coatings or other materials which are already installed on the surfaces to be treated.
- Verify substrate and drainage conditions meet or exceed the design of the Architect and Engineer of Record.

##### A. Cast In Place Concrete Substrates

- Verify Concrete has cured and aged for minimum time period.
- Horizontal slabs should be sloped for positive drainage.
- Repair substrate irregularities and imperfections.
- Ensure all concrete is smooth and free of voids.
- Grind irregular construction joints to suitable flush surface.
- Petroleum based products/ distillates are **not** to be used.

#### B. Soil Substrates

- Substrate must be dry, evenly and properly compacted and free of any possible contaminants and/or protrusions.
- Prepared substrate per Engineering requirements.

#### C. Wood Lagging Substrate

- Ensure all lagging boards are flush.
- Repair damaged lagging boards with concrete grout and/or treated wood.
- Gaps between lagging boards exceeding 1 inch will be filled or covered using concrete grout or plywood.

#### D. General

- Examine the substrates and other conditions under which this work is to be performed.
- Should any circumstances detrimental to the proper completion of the work, or deficiencies be determined, the Architect, Owner or General Contractor shall be given written notice of the unsatisfactory condition.
- Do not proceed with the installation of the specified waterproofing assembly until all surface deficiencies and unsatisfactory conditions have been corrected.

## 2. Drainage Board Installation

**Current Specified Drainboards:** Sopradrain ECO-Vent, Sopradrain ECO 2

#### A. Horizontal Installation

- Installation methods should be harmless to the waterproofing assembly.
- Install the specified drainage layer by loose laying the drain board onto the prepared substrate with the filter fabric facing the substrate.
- Cut the drainage panels to fit the surface (use caution not to damage the waterproofing assembly).
- Lap and tape edges and ends of geo-textile to maintain continuity, as required.

## B. Vertical Installation

- Install the specified drainage layer by mechanically fastening to the wood lagging using Soprema approved fasteners.
- Place and secure prefabricated drainage panels with the filter fabric facing the wood lagging.
- Installation methods should be harmless to the waterproofing assembly.
- Lap and tape edges and ends of geo-textile to maintain continuity, as required.
- If required apply adhesive to adhere drainage layer (a 3" spot every 36").

## 3. Pre-treat All Details (with the exception of Inside Corners)

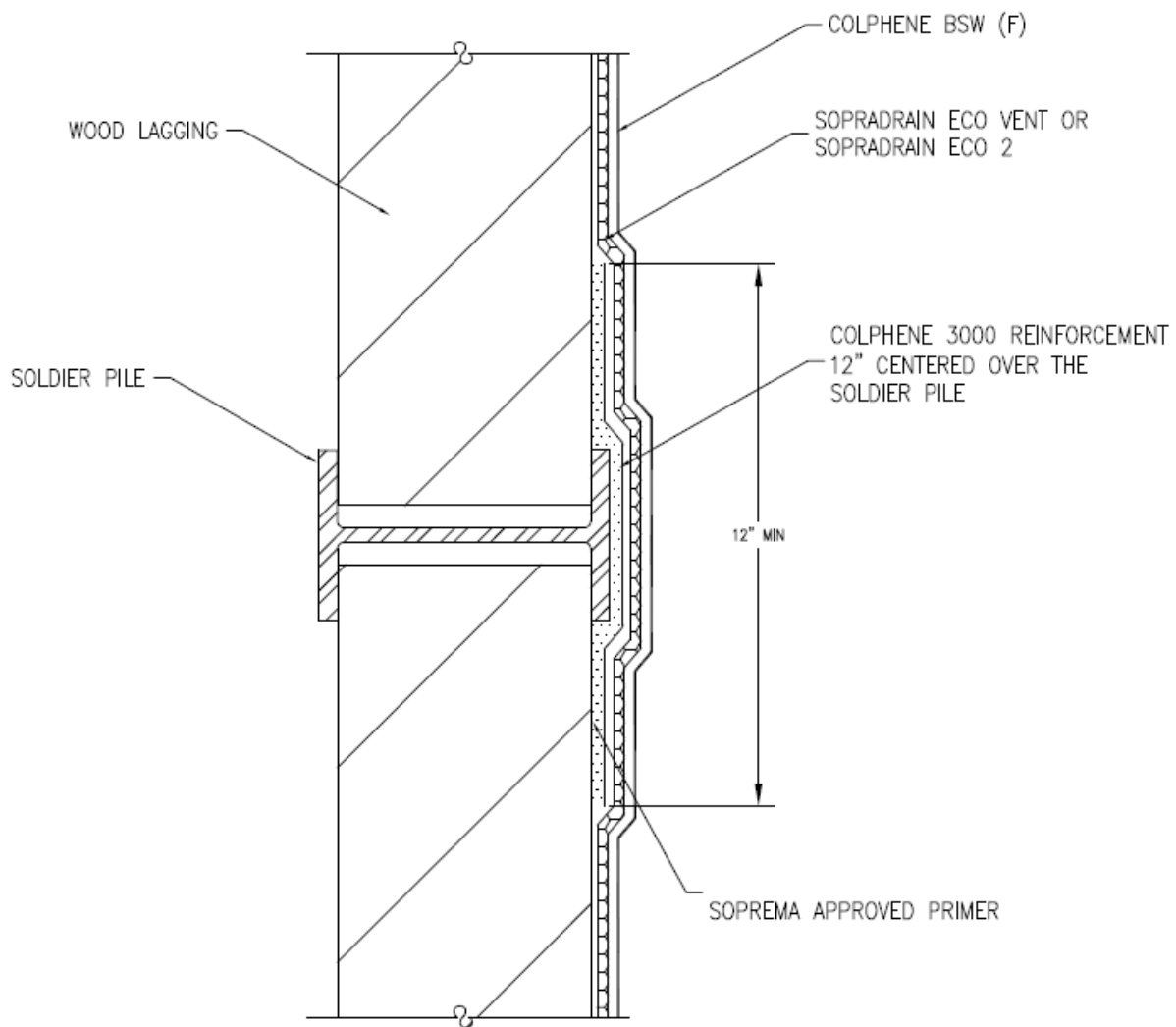
### A. Control Joints, Construction joints, Cracks and expansion Joints

- Properly grout, seal and apply the appropriate water stop (as required).
- Ensure all materials are cured and functioning as the primary joint seal.
- Joint, control joints and any crack over 1/16" will be void free and reinforced with a bed of Colphene Liquid Membrane and a continuous strip of membrane extended a minimum of 6" past the cold joint(s)/crack(s) in all directions.
- As appropriate, a bead of Colphene Liquid Membrane will be applied to all perimeter edges of all reinforcement plies

### B. Areas of potentially high substrate stress

These areas include interior and exterior corners, steel members (soldier piles), etc.

#### ***B.1 Steel Members (soldier piles)***



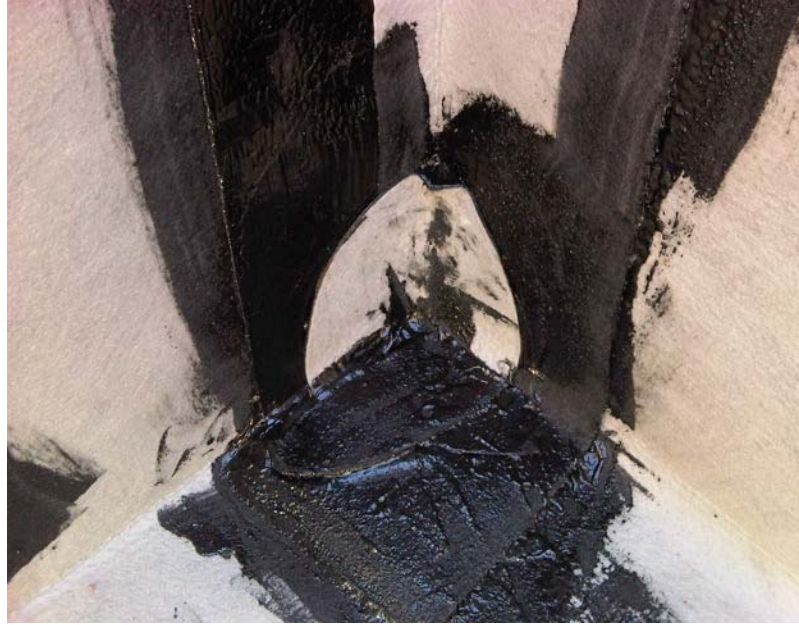
- Reinforcing strips of Colphene 3000 (or Colphene BSW) shall be applied in areas of potentially high substrate stress extending a minimum 6" on all sides (152mm), if Colphene BSW is used as a reinforcing strip it must be embedded in and caulked with Colphene Liquid Membrane.
- The sanded side of the Colphene BSW reinforcing strips will be adhered to the fleece side of the installed Colphene BSW membrane, embedded with a full trowel application of Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.

### ***B.2 Corners***

- Outside corners will receive a 12" width of Colphene BSW or Colphene 3000 as reinforcement, wrapping the corner 6" in each direction embedded and caulked with Colphene Liquid Membrane.



- Corners must be tightly seated and sealed.
- Apply the field membrane fully covering the corner reinforcement membrane (two ply finished assembly).
- Inside corner target plies will be a 6" minimum circular shaped target ply patch embedded in and caulked with Colphene liquid membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.
- The inside corner target ply is installed after the Colphene BSW Field membrane.



#### **4. Horizontal Application**

- Prior to beginning work verify substrate and drainage conditions meet or exceed the design of the Architect and Engineer of Record.
- (If required, for Colphene 3000 reinforcement) Apply an appropriate primer at a rate recommended. Allow primer to dry per membrane manufacturer's recommendations prior to adhering to sanded surface of Colphene BSW (see PDS for recommended coverage rate and dry time).
- Install Colphene BSW membrane with sanded under face placed down against the surface of the specified Sopradrain drainage board.
- Remove the release paper on both sides of the self adhered side lap edges, adhering one to the other (fleece side selvage edge to sanded side selvage edge).
- Roll seams with an approved roller and hand pressure.
- Ensure that all laps are firmly adhered and that there are no voids or fishmouths.
- Subsequent rolls should be aligned with the preceding roll with a side lap of 4" (101mm).
- End laps must be overlapped a minimum 6" (152mm) and embedded in and caulked with Colphene Liquid Membrane.

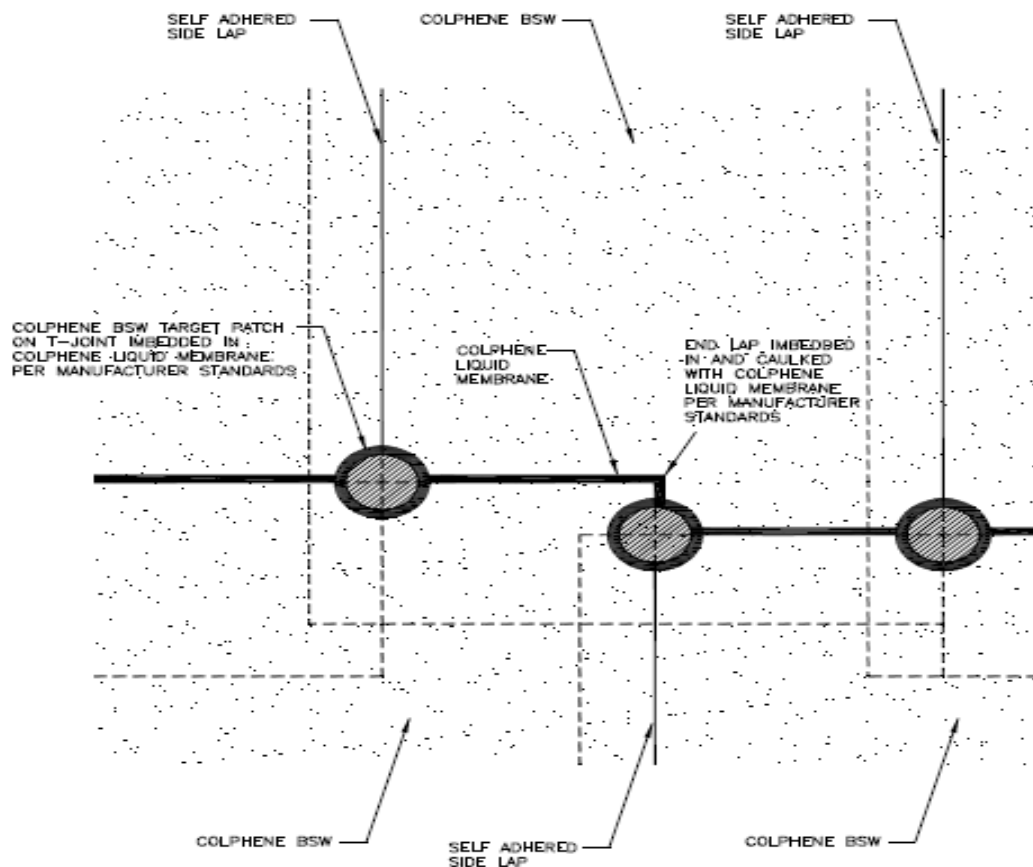




- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant (Alsan RS 230 Flash is acceptable).
- Stagger end laps a minimum of 6".



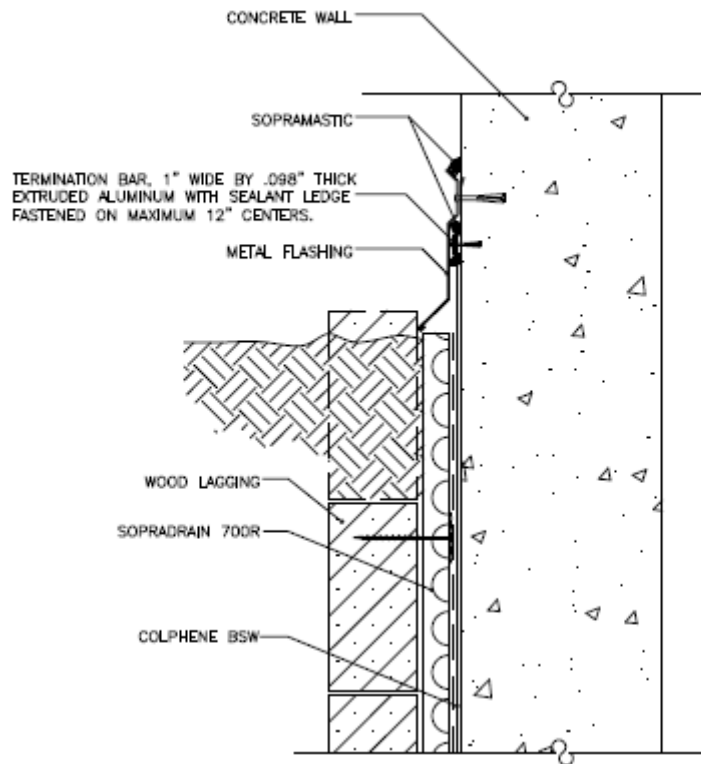
- Membrane T-joints will receive a target patch of Colphene BSW centered over the T-joints and extending a minimum of 6" in all directions.
- T-joint target patch shall be embedded in and caulked with Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.
- A hot air welder may need to be used on all self adhered side laps to create the proper heat and pressure to ensure all laps are firmly and smoothly adhered.



## 5. Vertical Application

- (If required, for Colphene 3000 reinforcement) Apply an appropriate primer at a rate recommended. Allow primer to dry per membrane manufacturer's recommendations prior to adhering to sanded surface of Colphene BSW (see PDS for recommended coverage rate and dry time).
- Starting at the high point, vertically align the Colphene BSW sheet, sanded under face toward the lag wall.
- Tack nail the Colphene BSW only at the top on the first 6" of the membrane (this will allow the tie-in to cover the tack nail penetrations).
- Remove the release paper on both sides of the self adhered side lap edges, adhering one to the other (fleece side selvage edge to sanded side selvage edge).
- Roll seams with an approved roller and hand pressure.
- Ensure all laps are firmly and smoothly adhered.
- Ensure no wrinkles, voids, fishmouths are present.
- As each floor is poured and the work continues up the vertical wall, remove tack nailing wherever possible ensuring holes are adequately sealed and lapped as required by Soprema standard details and specification.
- Subsequent rolls should be aligned with the preceding roll with a side lap of 4" (101mm).
- End laps must be overlapped a minimum 6" (152mm) and embedded in and caulked with Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant (Alsan RS 230 Flash is acceptable).
- A hot air welder may need to be used on all self adhered side laps in to create the proper heat and pressure to ensure all laps are firmly and smoothly adhered.
- Stagger end laps a minimum of 6".
- Membrane T-joints will receive a target patch of Colphene BSW centered over the T-joints and extending a minimum of 6" in all directions.
- T-joint target patch shall be embedded in and caulked with Colphene Liquid Membrane.
- Membrane shall be terminated in accordance with Soprema Approved Details
- The uppermost edge of the membrane shall be caulked with Sopramastic SM-1 or other approved sealant.
- Mechanically fasten Colphene BSW to the wood lagging using approved fasteners and termination bar.

- The termination bar will be set in a full bed of Sopramastic SM-1 (or approved mastic) and the top edge of the bar will be caulked with the same material.



- All top of the wall cut edges in the field application will receive a bead of Sopramastic SM-1 (or approved mastic) at the end of the day's work

## 6. Work Inspection

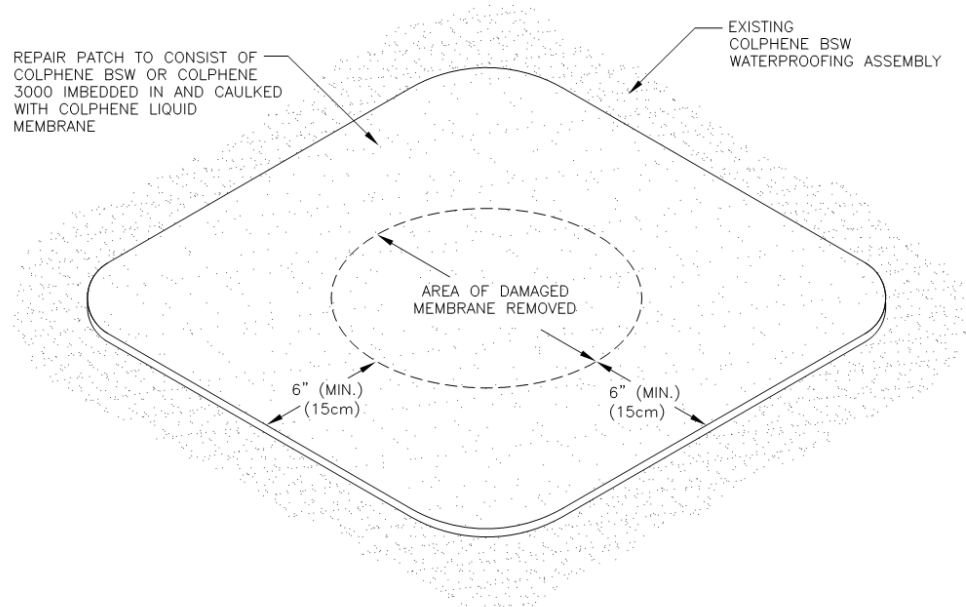
### A. Visual Work Inspection

- Review entire membrane installation.

#### ***A.1 Damaged Membrane***

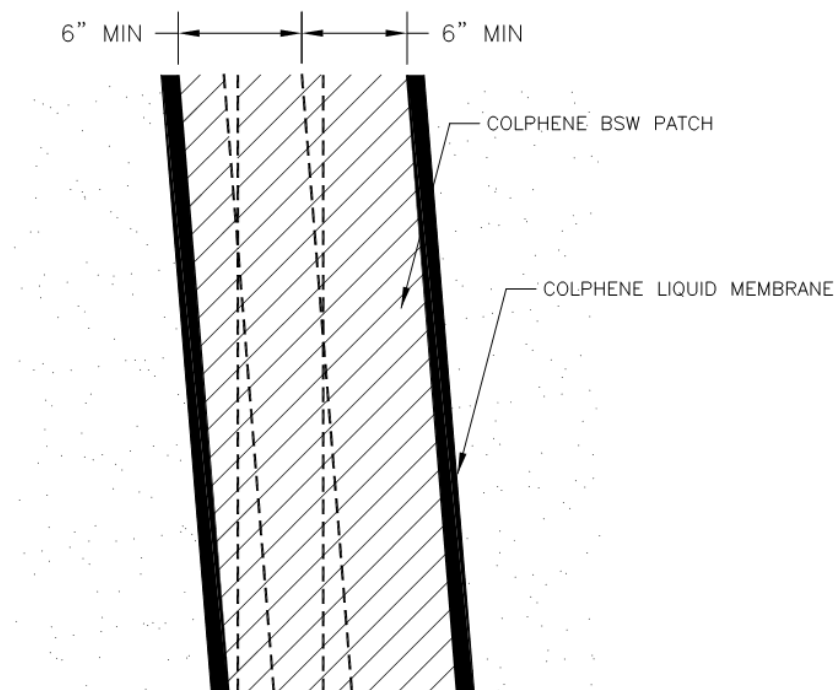
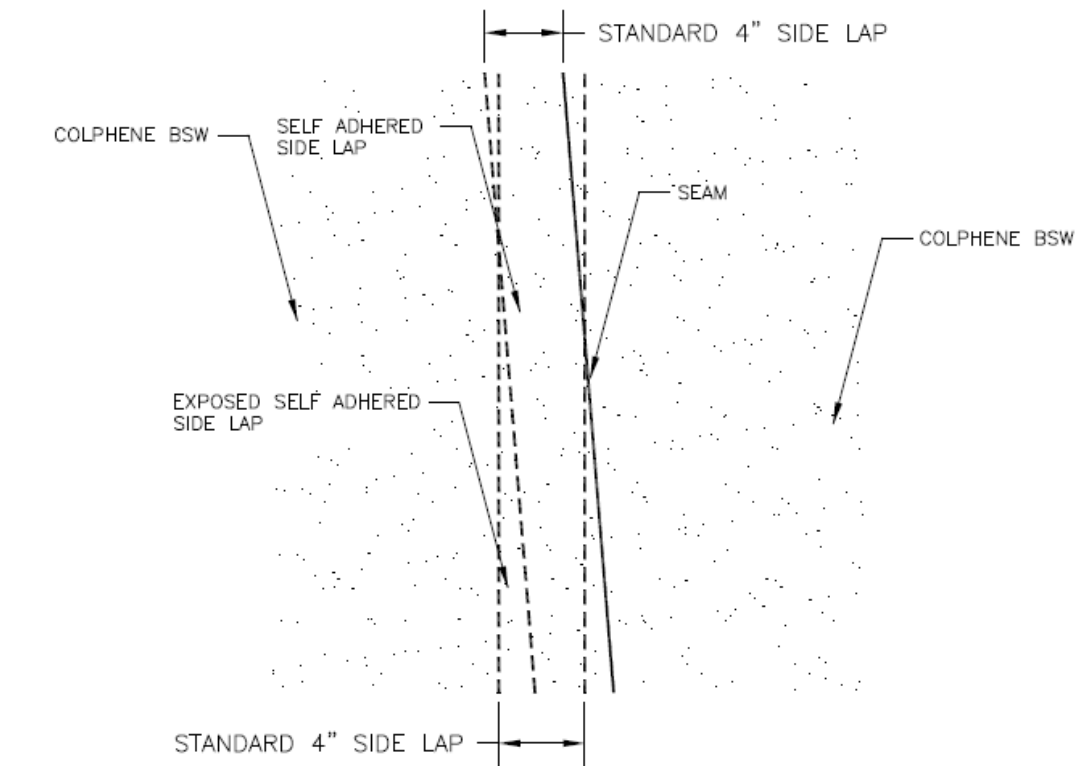
- If a damaged area is found, repair the damaged area by applying a repair/target patch of Colphene BSW or Colphene 3000 6" in all directions of the damaged area.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.
- Apply repair patch imbedded in and caulked with Colphene Liquid Membrane (or Soprema approved alternate)
- Wrinkles and fishmouths will need to be cut and repaired as described above.





### ***A.2 Insufficient Side Lap***

- A minimum of 3" self adhered side lap must be maintained (Colphene BSW F is manufactured to provide a 4" side lap).
- If the side lap overlap is insufficient, burn off the fleece in the affected area using hot air welder
- Apply Colphene BSW repair patch extending a minimum of 6" on either side of the seam.
- Colphene BSW repair patch is imbedded in and caulked with Colphene Liquid Membrane





B. Water Test (rarely required for Blind Side Waterproofing)

- Flood test each deck area leaks (ASTM D5957 *Standard Guide for Flood Testing Horizontal Waterproofing Installations*) before overlaying construction is placed.
- VERIFY that the depth of water shall not exceed the load capacity of the deck.
- Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches.
- Maintain 2 inches of clearance from top of flashing.
- Recommended flood time for each deck area is 48 hours.
- After flood testing, repair any leaks or damaged membrane.
- After repairs are made repeat flood test until the waterproofing installation is fully watertight.
- The Owner may engage an independent testing agency to observe flood testing procedures and results.
- Repair leaks and/or damaged membrane per the procedures defined above.

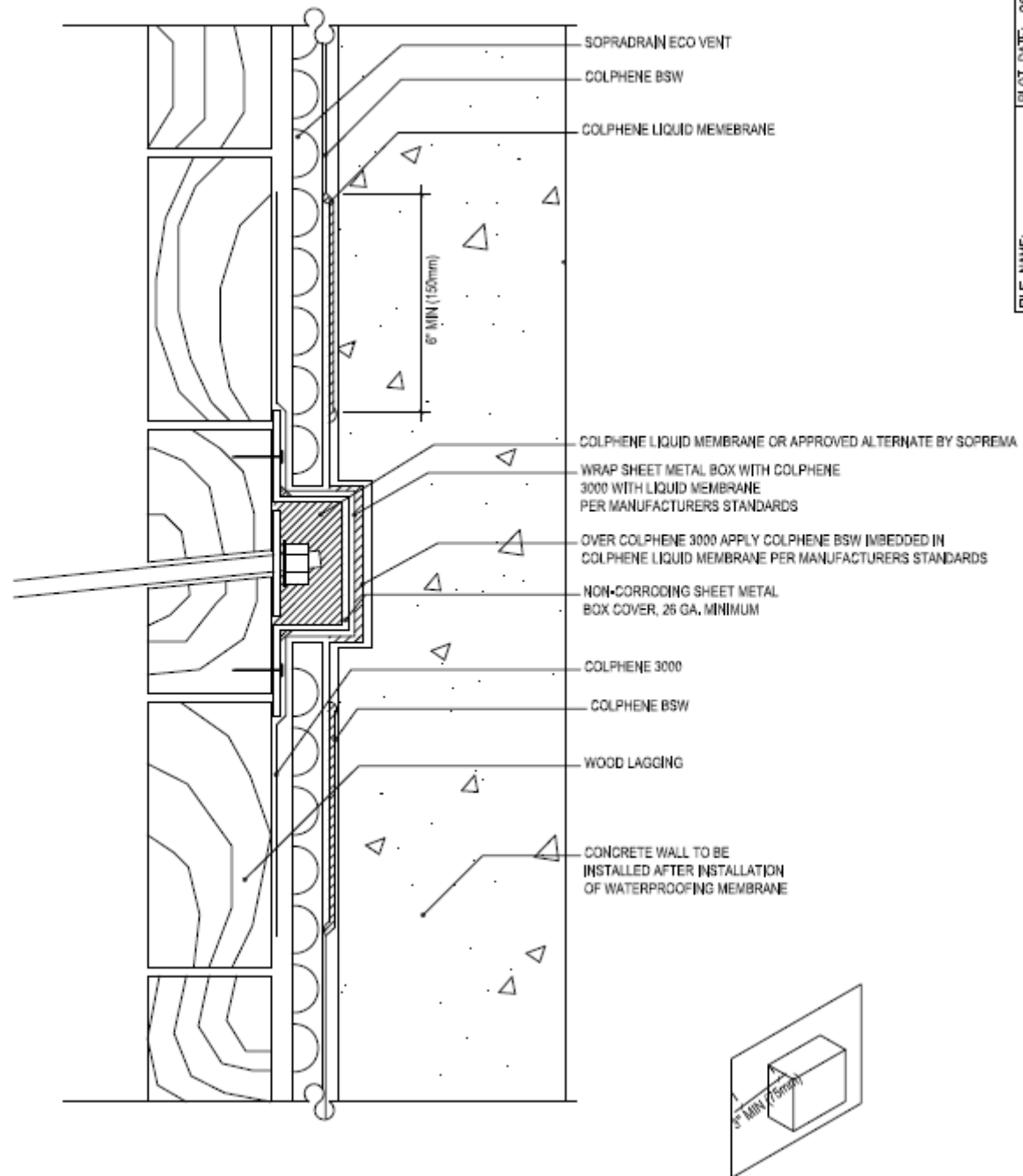
**Note:** *In lieu of flood testing, Soprema encourages Electronic Breach Detection as an acceptable alternative. Please contact Soprema for details.*



## Colphene BSW Training and Application Guide (Cont.)

### Colphene BSW Waterproofing Membrane.

#### **7. Blind Side Waterproofing at Tie-Back**



#### **A. Surface Preparation**

- Substrate must be structurally sound.
- Surface must be free of voids, spalled areas, loose aggregate and sharp protrusions.
- Remove all contaminants (such as grease, oil and wax) from all exposed surfaces.
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Do not install materials in conditions of inclement weather.
- Verify the compatibility of all membrane components with curing compounds, coatings or other materials which are already installed on the surfaces to be treated.
- Verify substrate and drainage conditions meet or exceed the design of the Architect and Engineer of Record.

#### B. Surface Treatment

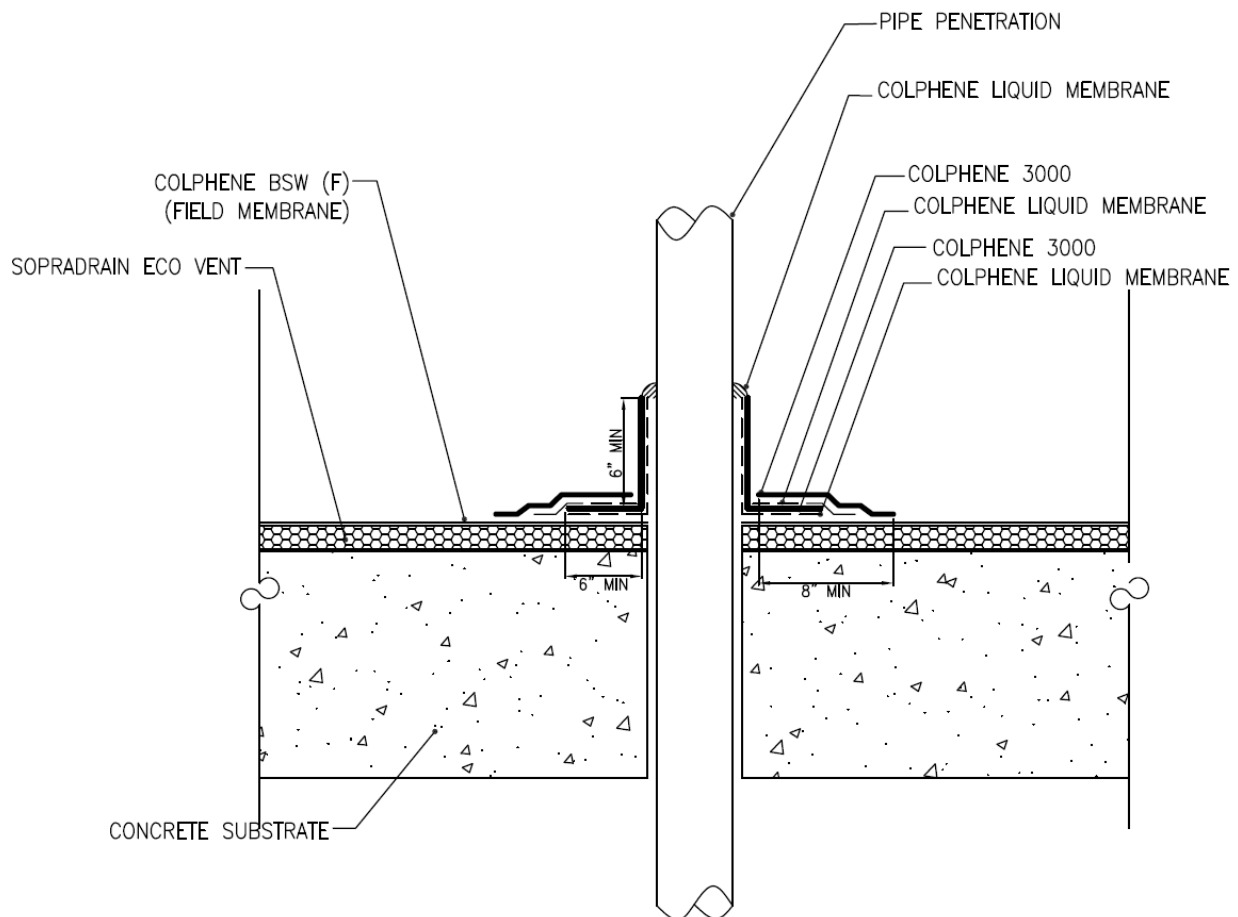
- Ensure all lagging boards are flush.
- Repair damaged lagging boards with concrete grout and/or treated wood.
- Gaps between lagging boards exceeding 1 inch will be filled or covered using concrete grout or plywood.

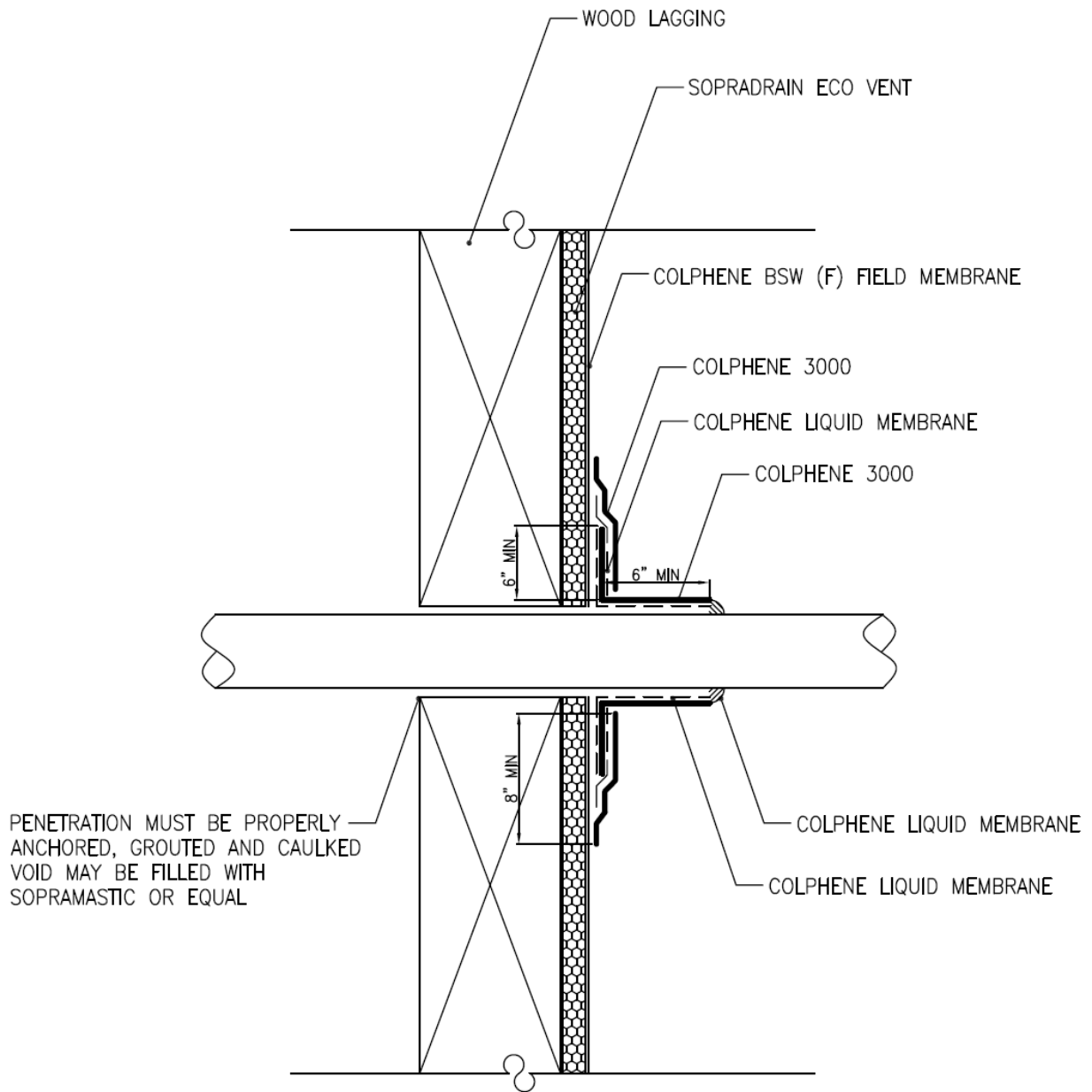
#### C. Detailing (per Soprema standard detail "BSW03")

- Install non-corroding sheet metal box cover (26 GA minimum) onto wood lagging and fill interior with Colphene Liquid Membrane (or Soprema approved alternate).
- Apply a bead of Colphene Liquid Membrane on the cover box angle change as shown in the above detail.
- Install Colphene 3000 reinforcement ply wrapping the box cover and extending a minimum of 6" on all sides onto the wood lagging.
- Install the specified drainage layer by mechanically fastening to the wood lagging using Soprema approved fasteners.
- Place and secure prefabricated drainage panels with the filter fabric facing the wood lagging.
- Installation methods should be harmless to the waterproofing assembly.
- Lap and tape edges and ends of geo-textile to maintain continuity as required.
- If required apply adhesive to adhere drainage layer (a 3" spot every 36").
- Install drainage layer to abut the non-corroding sheet metal box cover.
- Install Colphene BSW reinforcement ply over the Colphene 3000 reinforcement ply imbedded in Colphene liquid membrane.
- Colphene BSW reinforcement should extend a minimum of 6" from the cover box on all sides onto the specified drainage layer
- Install Colphene BSW field membrane

- Tie-in Colphene BSW field membrane to the Colphene BSW reinforcement ply a minimum of 6".
- The Colphene BSW tie-in is to be imbedded in and caulked with Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.

## 8. Blind Side Waterproofing Penetrations.





#### A. Surface Preparation

- Substrate must be structurally sound.
- Surface must be free of voids, spalled areas, loose aggregate and sharp protrusions.
- Remove all contaminants (such as grease, oil and wax) from all exposed surfaces.
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Do not install materials in conditions of inclement weather.

- Verify the compatibility of all membrane components with curing compounds, coatings or other materials which are already installed on the surfaces to be treated.
- Verify substrate and drainage conditions meet or exceed the design of the Architect and Engineer of Record.

#### B. Surface Treatment

- Ensure all lagging boards are flush.
- Repair damaged lagging boards with concrete grout and/or treated wood.  
Gaps between lagging boards exceeding 1 inch will be filled or covered using concrete grout or plywood
- Penetrations must be firmly secured/anchored and properly prepared prior to the installation of new materials.
- Apply Elastocol 600c primer as required.

#### D. Detailing (per Soprema standard detail "BSW10,11,12")

- Install Colphene 3000 reinforcement extending a minimum of 6" onto the BSW (F) field membrane and a minimum of 6" onto the properly prepared pipe penetration.
- The Colphene 3000 reinforcement is imbedded in and caulked with Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.
- Install the second Colphene 3000 reinforcement with a minimum 6" tie-in to the first reinforcement ply and going a minimum of 2" onto the BSW (F) field membrane.
- The second Colphene 3000 reinforcement should be imbedded in and caulked with Colphene Liquid Membrane.
- Use hot air welder to remove fleece back prior to application of Liquid Membrane or alternate sealant.





# COLPHENE BSW (F)

BLIND-SIDE WATERPROOFING (BSW) MEMBRANE    Order No. \*

\*Contact Customer Service for availability and ordering.

## DESCRIPTION

COLPHENE BSW (F) is a fully reinforced SBS modified bitumen membrane specially designed for blind-side waterproofing applications.

COLPHENE BSW (F) is composed of a select blend of SBS modified bitumen applied onto a non-woven polyester reinforcement. The sanded under face is covered by a silicone release film at the selvage edge and the top face is covered with polyester fleece. The polyester fleece top face exhibits tenacious adhesion when concrete is poured against it and therefore provides a continuous and integral seal to the structure, preventing ingress or migration of water around the structure.

## BASIC USE & APPLICATION

Refer to COLPHENE BSW (F) Guide Specification & Approved Details for specific application information.

COLPHENE BSW (F) is designed for use in blind-side waterproofing applications, mud slabs and underwork slabs as well as construction methods incorporating lagging or shotcrete retention walls. COLPHENE BSW (F) is also highly effective in rehab waterproofing and zero property line construction.

Starting at the high point, install COLPHENE BSW (F) to the primed substrate, SopraBoard or Sopradrain by peeling back the release film on the underside. Subsequent rolls shall be installed in the same manner and should be aligned with the preceding roll to maintain continuity. Use an approved roller and apply hand pressure over the entire surface to ensure solid adhesion to the substrate. The uppermost edge of the membrane shall be mechanically fastened to the substrate using approved fasteners and terminations bars. All small protrusions (steel work, etc.) through the waterproofing membrane must be sealed with Colphene LM or Alsan Flashing.

## FEATURES & BENEFITS

- Impermeable to moisture
- Excellent adhesion to poured concrete
- Fully adhered, watertight laps
- Superior tensile strength and puncture resistance
- Can be applied to permanent formwork
- Easy to install

## LIMITATIONS

- COLPHENE BSW (F) should not be stored exposed to the elements. Rolls are stored upright on pallets
- DO NOT install during inclement weather

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



# COLPHENE BSW (F) PAGE 2

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Rev 12/10

## PHYSICAL PROPERTIES

| PROPERTIES                     | STANDARDS           | COLPHENE BSW (f)                      |
|--------------------------------|---------------------|---------------------------------------|
| Color                          | --                  | Black                                 |
| Thickness                      | ASTM D3767          | 108 mils (2.7 mm)                     |
| Roll dimensions                | --                  | 39" x 49' (1 m x 10 m)                |
| Roll weight                    | --                  | 92 lbs (41.7 kg)                      |
| Under face                     | --                  | Sanded (Laps - silicone release film) |
| Top face                       | --                  | Polyester Fleece                      |
| Tensile strength, MD/XD        | ASTM D412           | 23.7 / 18.5 MPa                       |
| Ultimate elongation, MD/XD     | ASTM D412           | 67 / 74%                              |
| Low temperature flexibility    | ASTM D1970          | Unaffected at -23 °C                  |
| Adhesion of poured concrete    | ASTM D903 modified  | 2880 N/m                              |
| Puncture resistance            | ASTM E154           | 1210 N                                |
| Resistance to hydrostatic head | ASTM D5385 modified | > 70 m                                |
| Crack cycling at -23 °C        | ASTM C836           | Unaffected                            |
| Tear resistance                | ASTM D5601          | 125 N                                 |
| Lap peel adhesion              | ASTM D1876          | 1360 N/m                              |
| Water vapor transmission       | ASTM E96 method B   | 0.21 ng / Pa.s.m <sup>2</sup>         |
| Water absorbtion               | ASTM D570           | 0.5%                                  |
| Rolls per Pallet*              | --                  | 30                                    |

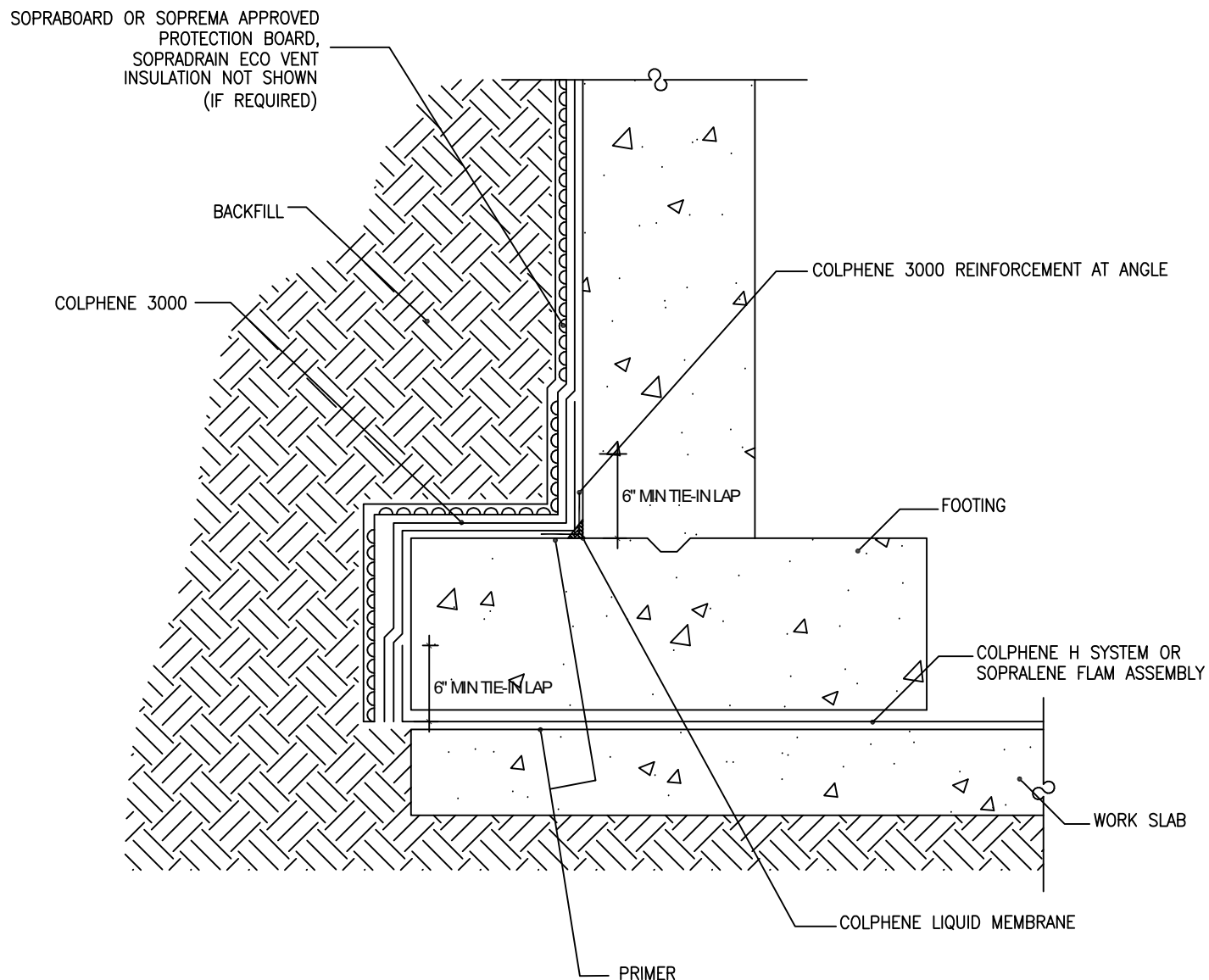
\* Rolls stocked upright on pallets

## COMPOSITION & PACKAGING

| Product / Property            | COLPHENE BSW (F)   |
|-------------------------------|--|
| Reinforcement                 | polyester  |
| Elastomeric Bitumen           | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                       | Polyester Fleece   |
| Underside                     | Sanded (Laps - silicone release film)                    |
| Approximate Nominal Thickness | 108 mils (2.7 mm)  |
| Approximate Roll Coverage     | 147 ft <sup>2</sup> (13.6 m <sup>2</sup> )               |
| Side Lap                      | 4" (102 mm)  |
| End Lap                       | 6" (152 mm)  |
| Roll Length                   | 49 ft (15 m)   |
| Roll Width                    | 39" (1 m)  |
| Approximate Roll Weight       | 92 lbs (41.7 kg)   |
| Rolls per Pallet*             | 20   |


\* Rolls stocked upright on pallets

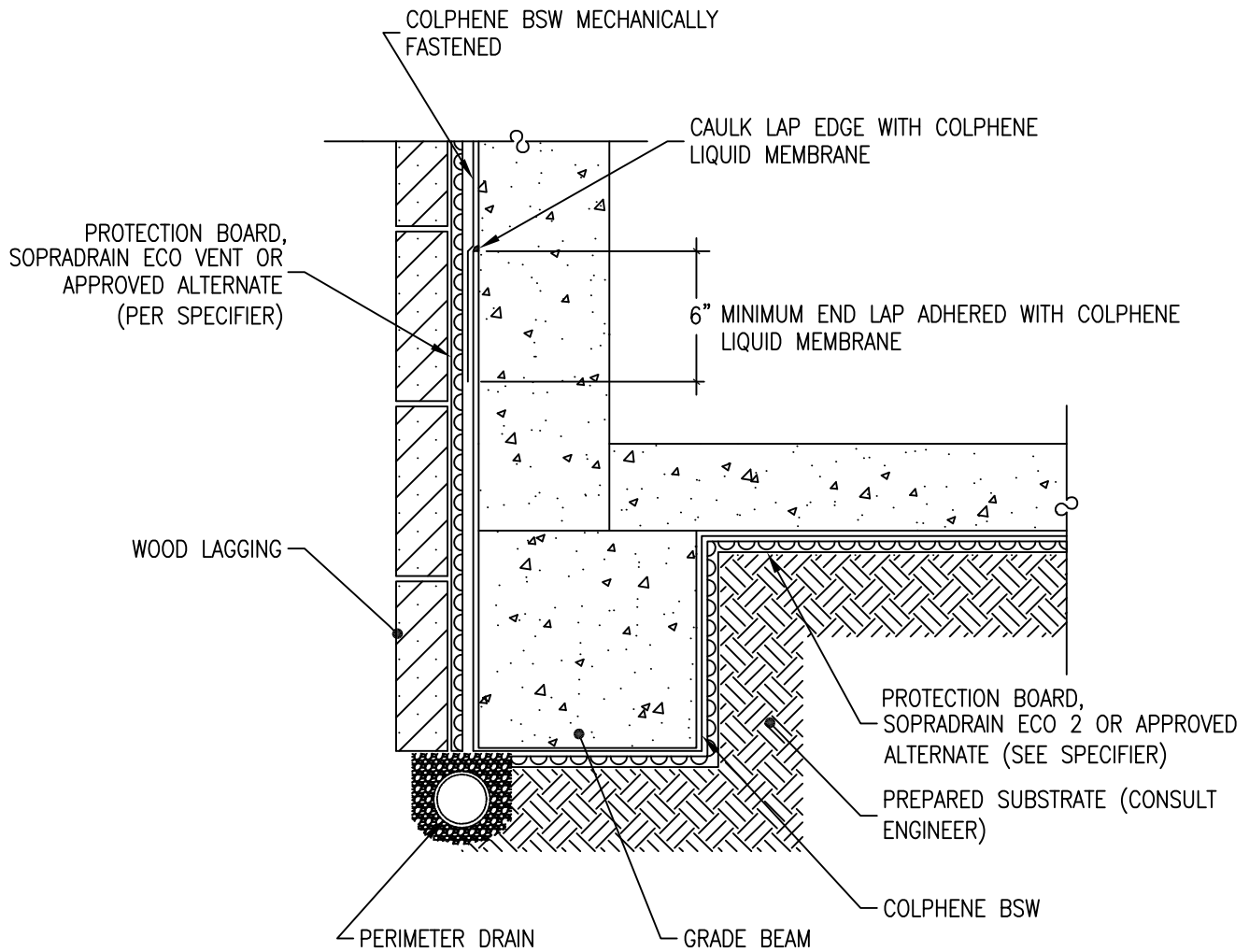




NOTES:


1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

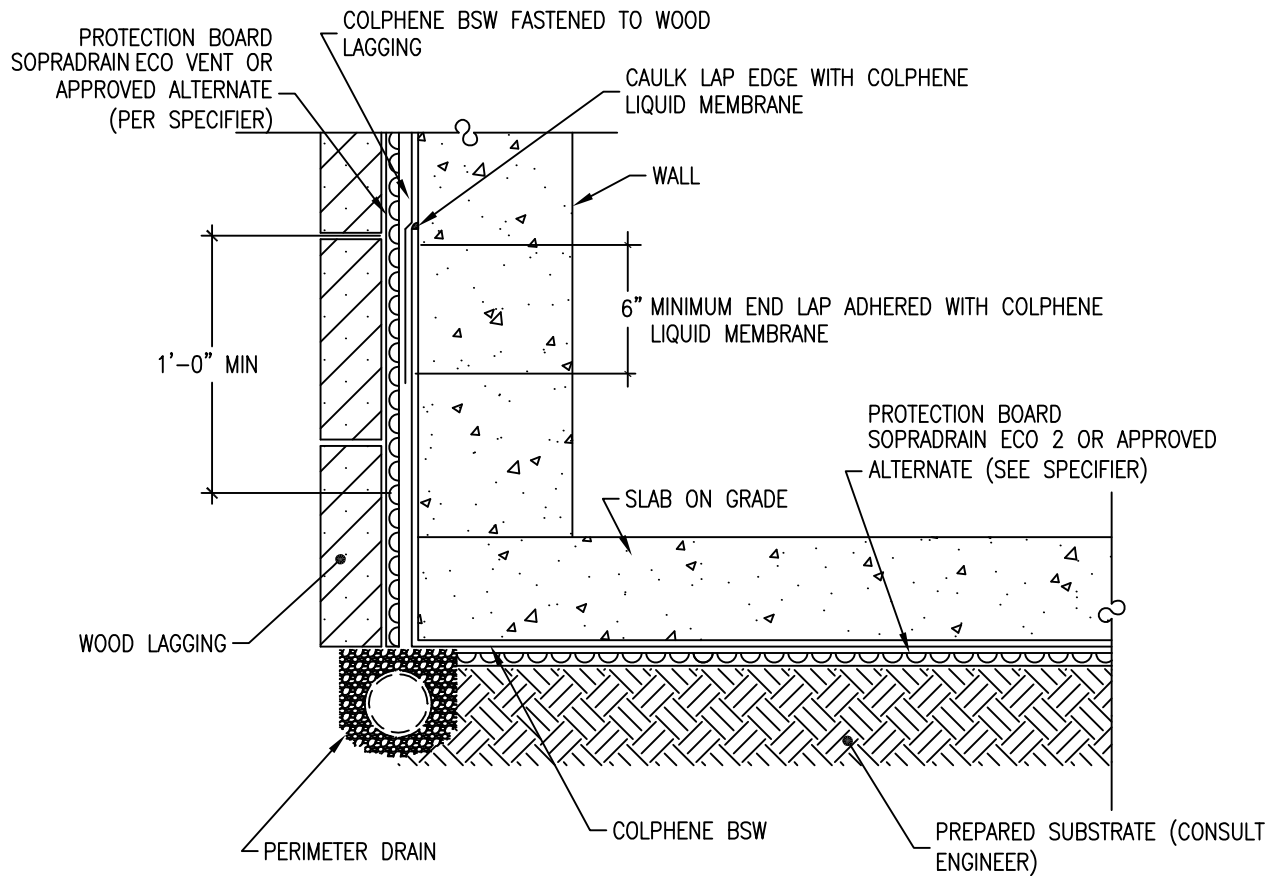
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|   |           | WADSWORTH, OHIO 44281 |                           |
|   |           | (330) 334-0066        |                           |
| TITLE<br>FOUNDATION WALL & FOOTING BELOW GRADE  |           |                       |                           |
| SCALE<br>NONE   | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>01/04/10 |
| DRAWING NUMBER<br>BGW-2   |           |                       | REV<br>0                  |



NOTES:


1. PROJECT SPECIFIC REINFORCEMENT REQUIREMENTS NOT SHOWN.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS. PROJECT SPECIFIC REINFORCEMENT REQUIREMENTS, IF ANY, NOT SHOWN.
3. SELF ADHERED, 4" MINIMUM SIDE LAPS. CUT EDGE LAPS TO BE CAULKED WITH COLPHENE LIQUID MEMBRANE.

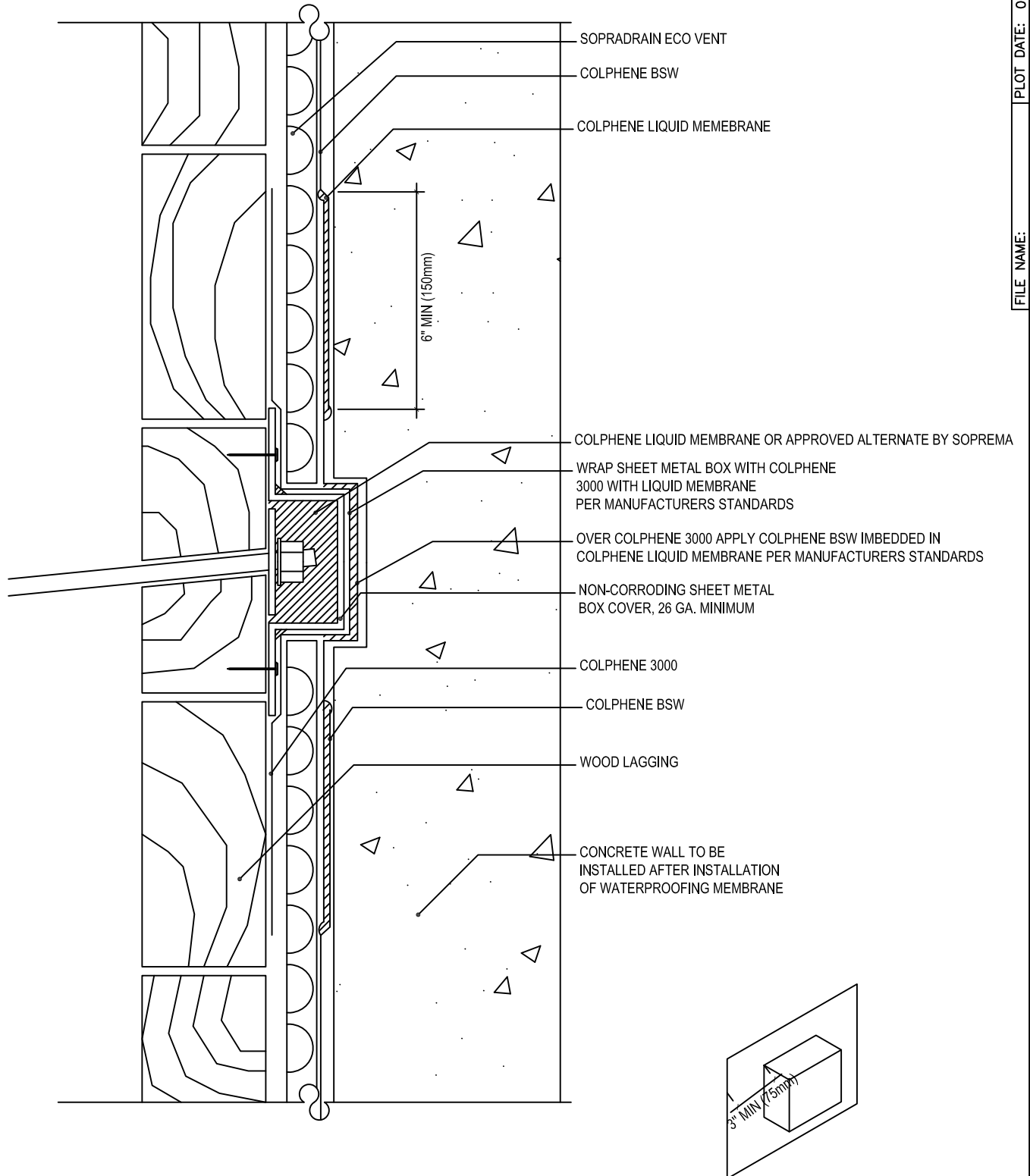
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|--|-----|-----------------------|---------------|
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|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| BLIND SIDE WATERPROOFING AT GRADE BEAM   |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 12/29/09      |
| DRAWING NUMBER   |     |                       | REV           |
| BSW01  |     |                       | 0             |




NOTES:

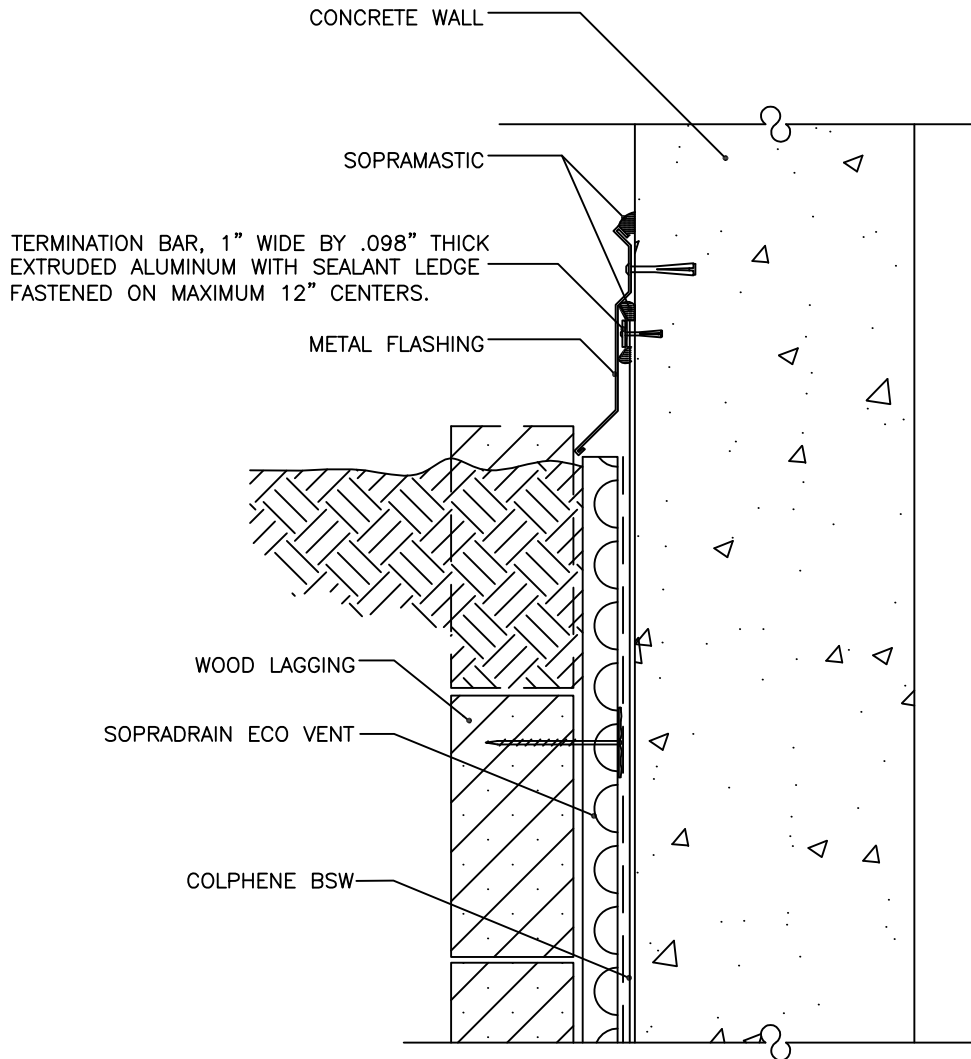
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS. PROJECT SPECIFIC REINFORCEMENT REQUIREMENTS, IF ANY, NOT SHOWN.
2. SELF ADHERED, 4" MINIMUM SIDE LAPS. CUT EDGE LAPS TO BE CAULKED WITH COLPHENE LIQUID MEMBRANE.

|  |      |                       |           |
|--|------|-----------------------|-----------|
|  |      | 310 QUADRAL DRIVE     |           |
|  |      | WADSWORTH, OHIO 44281 |           |
|  |      | (330) 334-0066        |           |
| TITLE<br>BLIND SIDE WATERPROOFING AT SLAB  |      |                       |           |
| SCALE  | NONE | DWN<br>TM             | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |           |
| BSW02  |      | 01/06/10              |           |
|  |      |                       | REV<br>0  |




|  |           |  |                           |
|--|-----------|--|---------------------------|
|  <b>SOPREMA</b><br>WATERPROOFING DIVISION |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
| TITLE COLPHENE BSW TIE-BACK DETAIL   |           |  |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>GP  | APPROVAL DATE<br>06/11/10 |
| DRAWING NUMBER<br>BSW03  |           |  | REV<br>0                  |

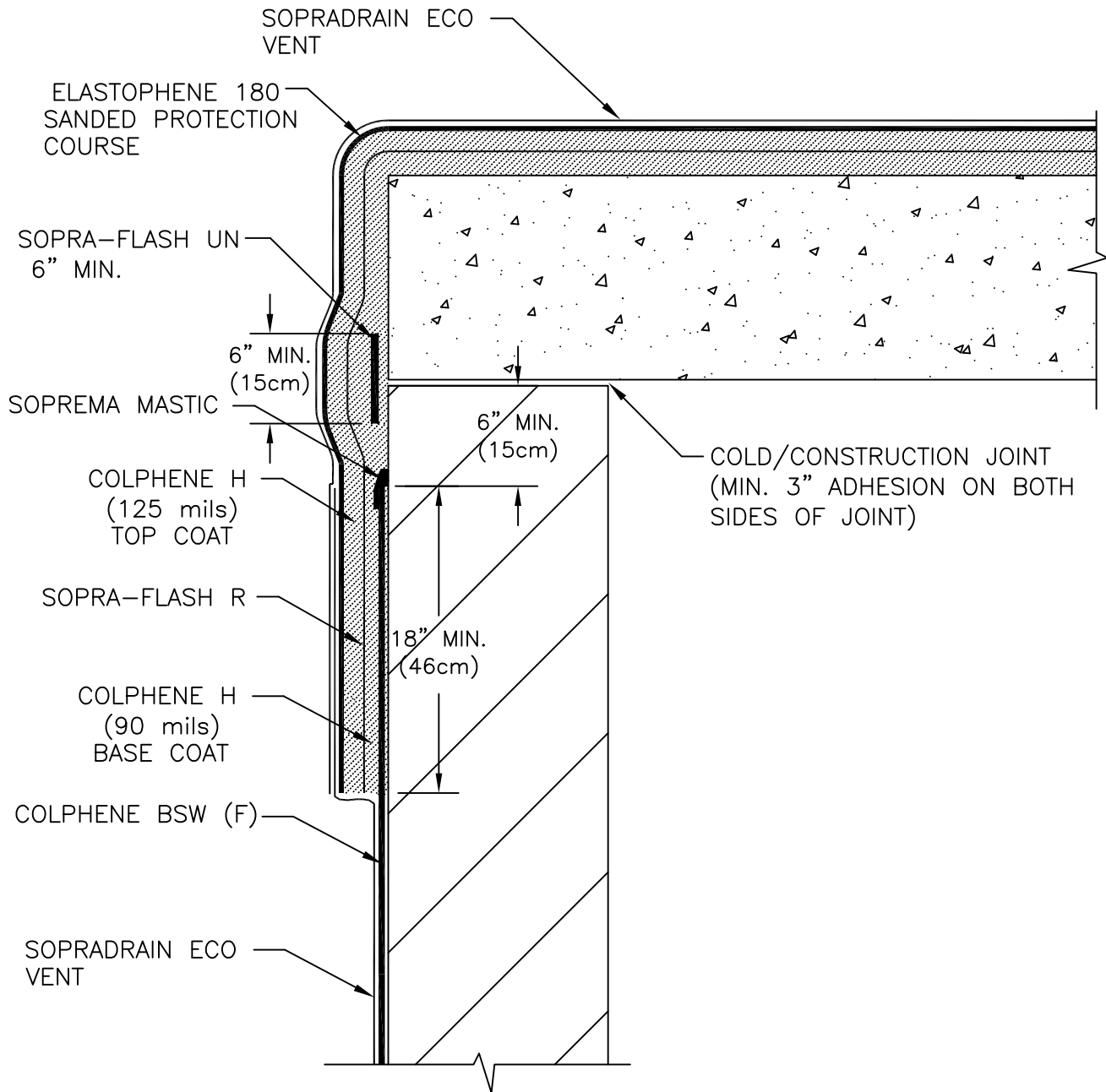
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:


1. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.

|  |      |                           |           |
|--|------|---------------------------|-----------|
|  |      | 310 QUADRAL DRIVE         |           |
|  |      | WADSWORTH, OHIO 44281     |           |
|  |      | (330) 334-0066            |           |
| TITLE<br>BSW AT TOP TERMINATION  |      |                           |           |
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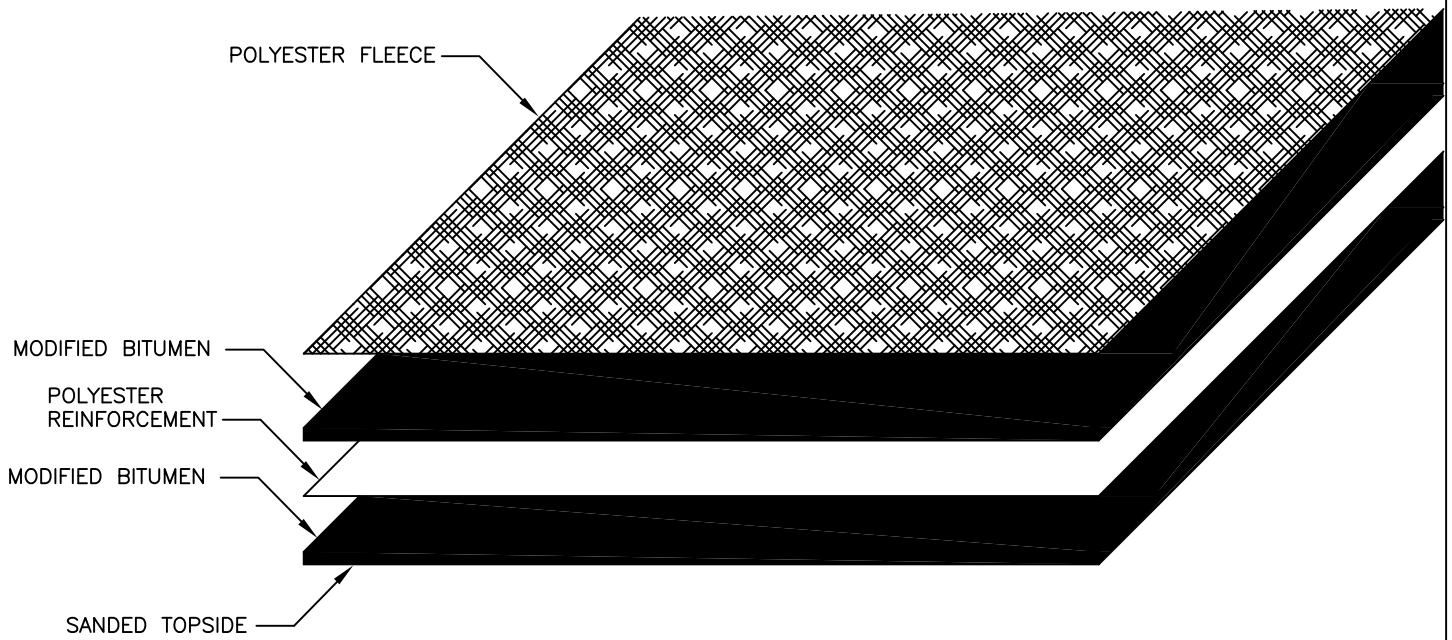


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. SUBSTRATE MUST BE PRIMED PRIOR TO THE INSTALLATION OF COLPHENE H SYSTEM.
3. COLD JOINTS SHOULD BE PROPERLY GROUTED.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE COLPHENE H TIE-IN TO COLPHENE BSW (F)                  |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE 02/08/11                                       |           |
| BSW05  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

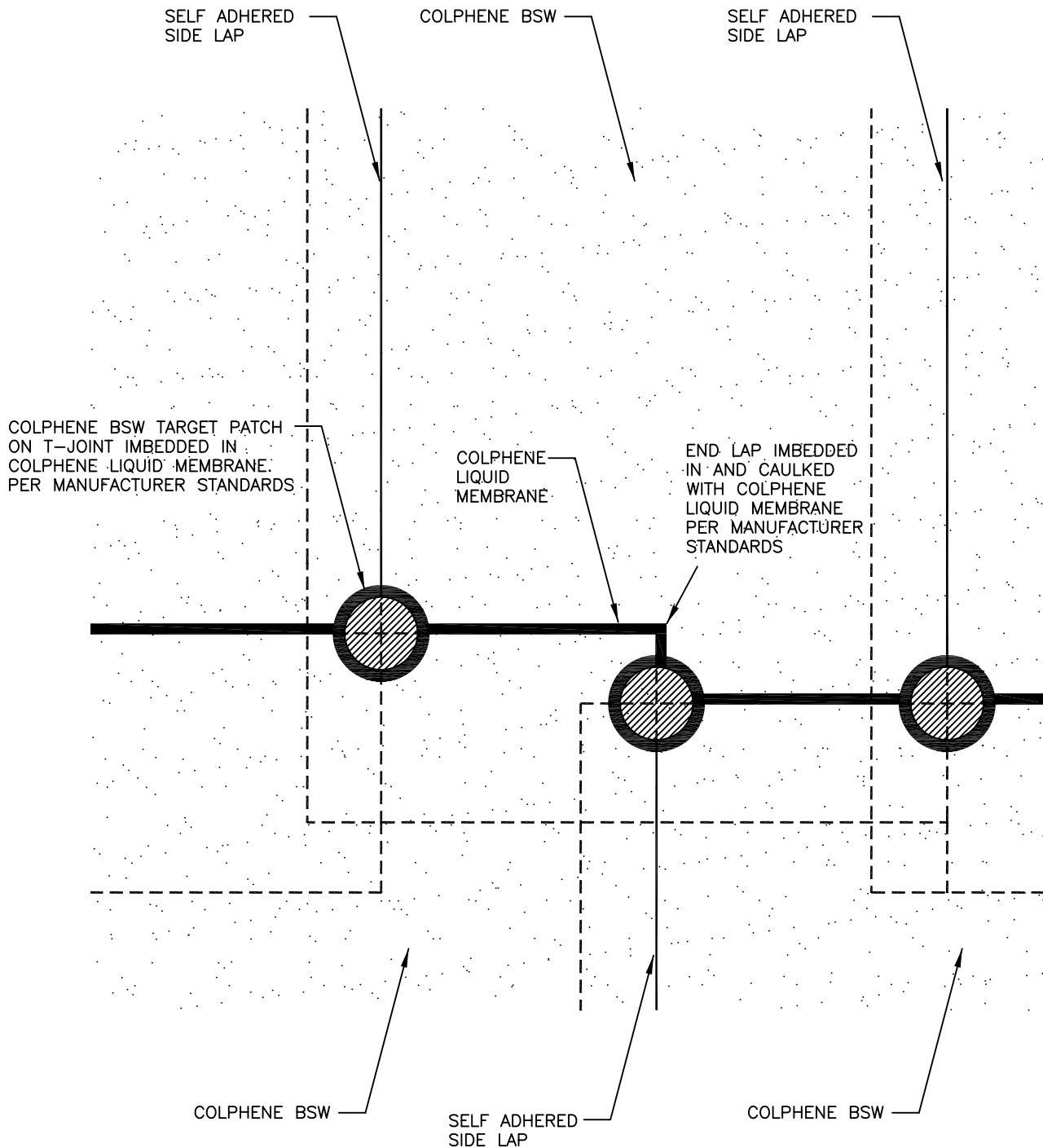


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE BSW(F) LAYERED DETAIL                                  |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>GP |
| DRAWING NUMBER   |      | APPROVAL DATE 07/26/10                                       |           |
| BSW06  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

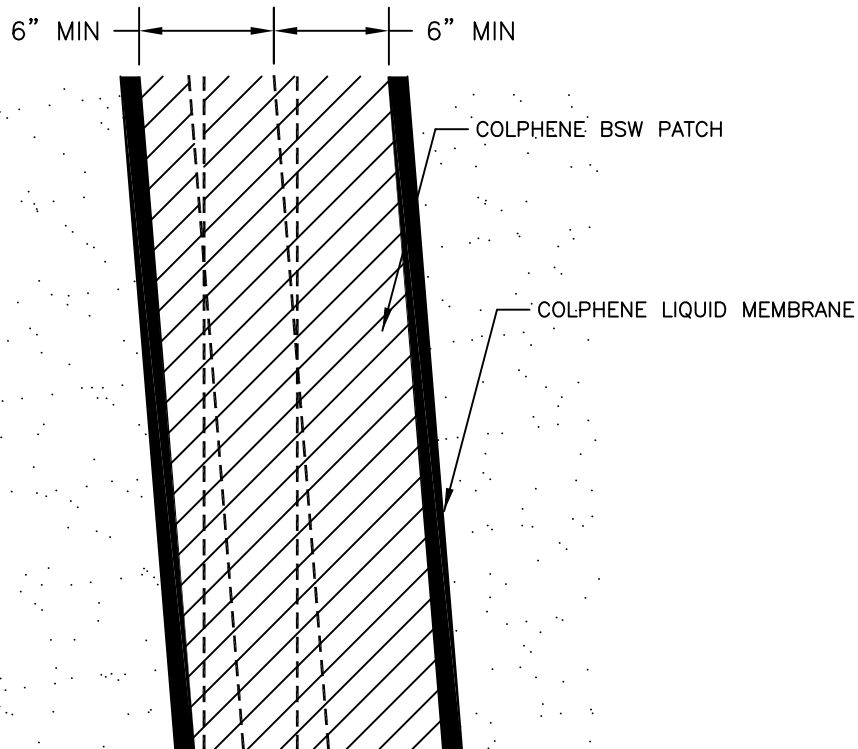
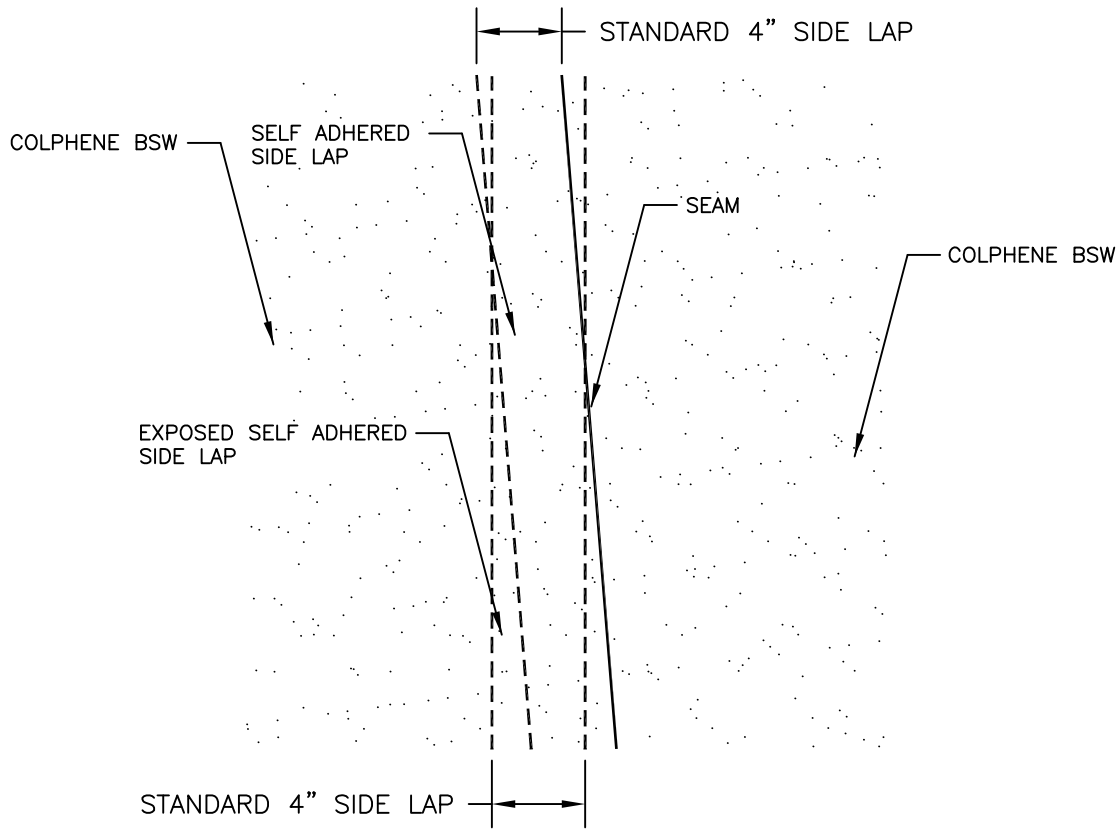


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. BURN FLEECE WITH HOT AIR WELDER 3" IN ALL DIRECTIONS FROM THE T-JOINT PRIOR TO APPLYING COLPHENE LIQUID MEMBRANE AND COLPHENE BSW TARGET PATCH.

|  |      |                       |          |
|--|------|-----------------------|----------|
|  |      | 310 QUADRAL DRIVE     |          |
|  |      | WADSWORTH, OHIO 44281 |          |
|  |      | (330) 334-0066        |          |
| TITLE COLPHENE BSW T-JOINT/END LAP   |      |                       |          |
| SCALE  | NONE | DWN TM                | CHK GP   |
| APPROVAL DATE  |      |                       | 07/20/10 |
| DRAWING NUMBER   |      |                       | BSW07    |
|  |      |                       | REV 1    |





NOTES:

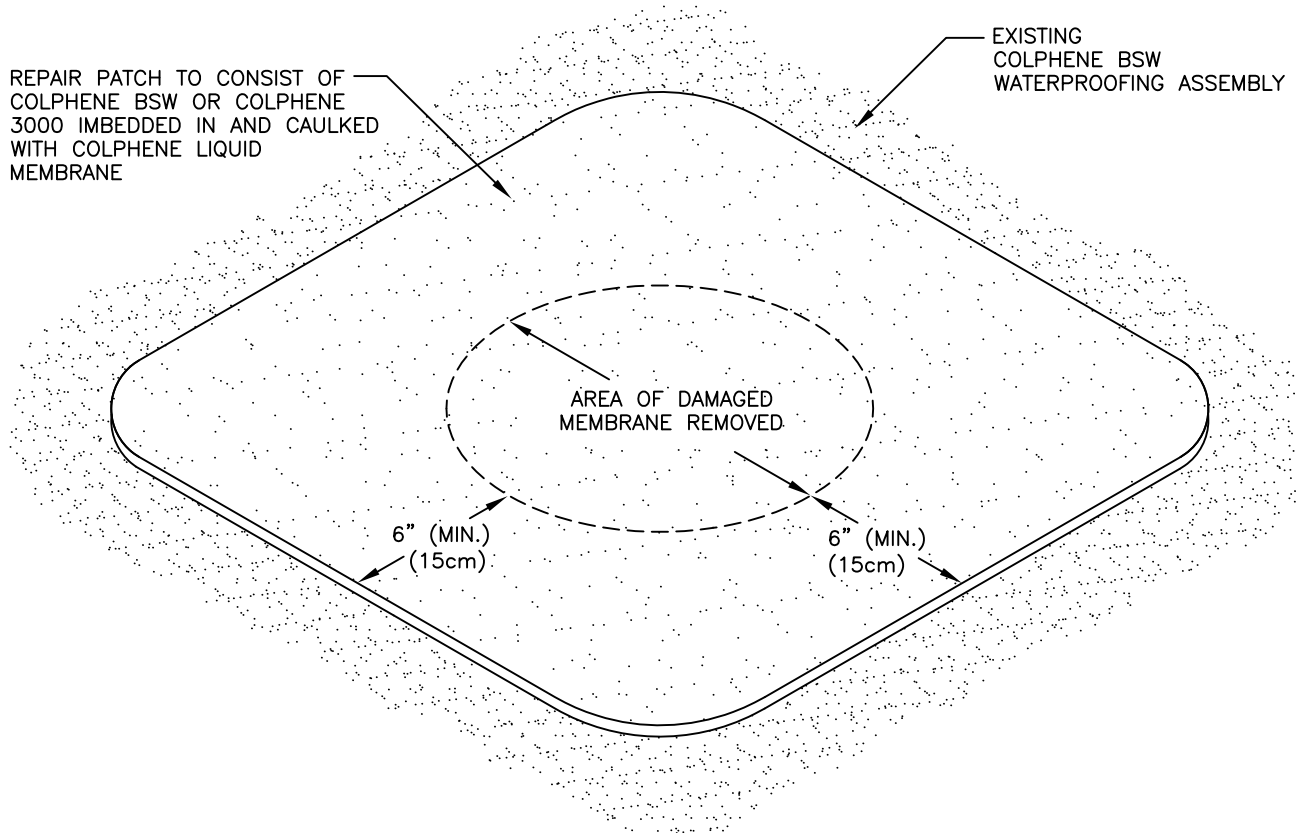
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. A MINIMUM OF 3" SELF ADHERED SIDE OVERLAP MUST BE PRESENT ON ALL MEMBRANE SIDE LAPS. BURN OFF FLEECE AND PATCH WITH COLPHENE BSW EMBEDDED IN AND CAULKED WITH COLPHENE LIQUID MEMBRANE 6" ON EACH SIDE OF SEAM IF THE MINIMUM 3" SELF ADHERED SIDE OVERLAP IS NOT OBTAINED.



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|                             |           |           |                           |          |
|-----------------------------|-----------|-----------|---------------------------|----------|
| TITLE<br>BSW SIDE LAP PATCH |           |           |                           |          |
| SCALE<br>NONE               | DWN<br>TM | CHK<br>GP | APPROVAL DATE<br>07/26/10 |          |
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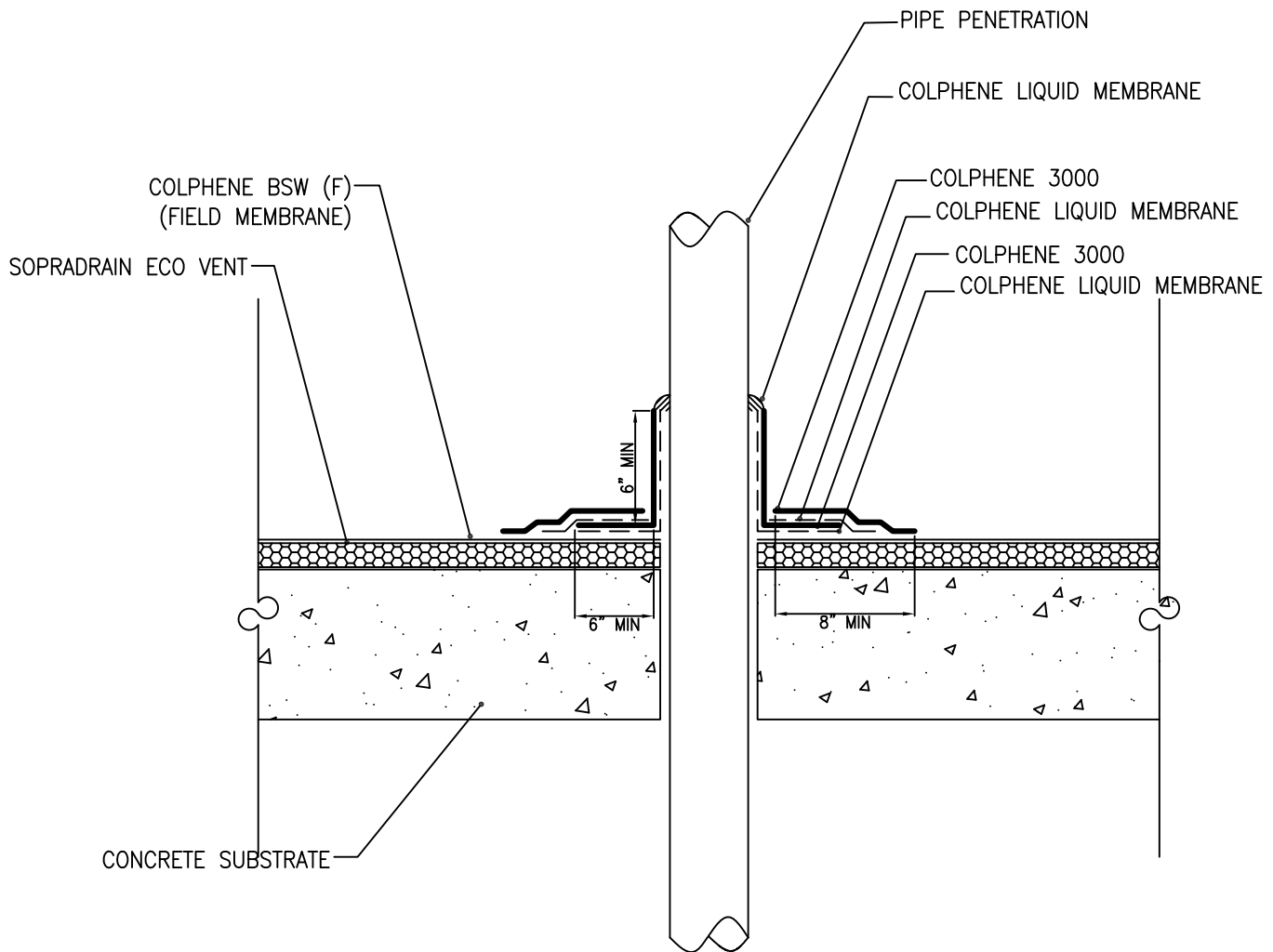
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



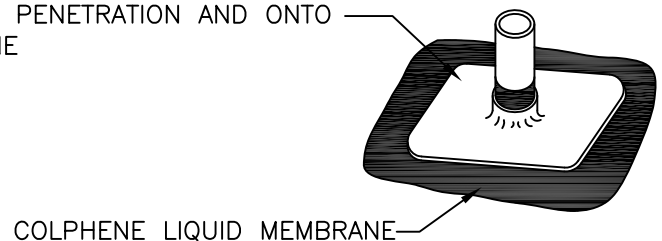
NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. BURN FLEECE WITH HOT AIR WELDER ON EXISTING COLPHENE BSW WATERPROOFING ASSEMBLY PRIOR TO APPLYING COLPHENE LIQUID MEMBRANE AND REPAIR TARGET PATCH.

|  |      |                        |           |
|--|------|------------------------|-----------|
|  |      | 310 QUADRAL DRIVE      |           |
|  |      | WADSWORTH, OHIO 44281  |           |
|  |      | (330) 334-0066         |           |
| TITLE COLPHENE BSW REPAIR PATCH  |      |                        |           |
| SCALE  | NONE | DWN<br>TM              | CHK<br>GP |
|  |      | APPROVAL DATE 07/15/10 |           |
| DRAWING NUMBER BSW09   |      |                        | REV<br>0  |




APPLY COLPHENE 3000 TIGHTLY OVER PIPE PENETRATION AND ONTO  
BASE COAT OF COLPHENE LIQUID MEMBRANE

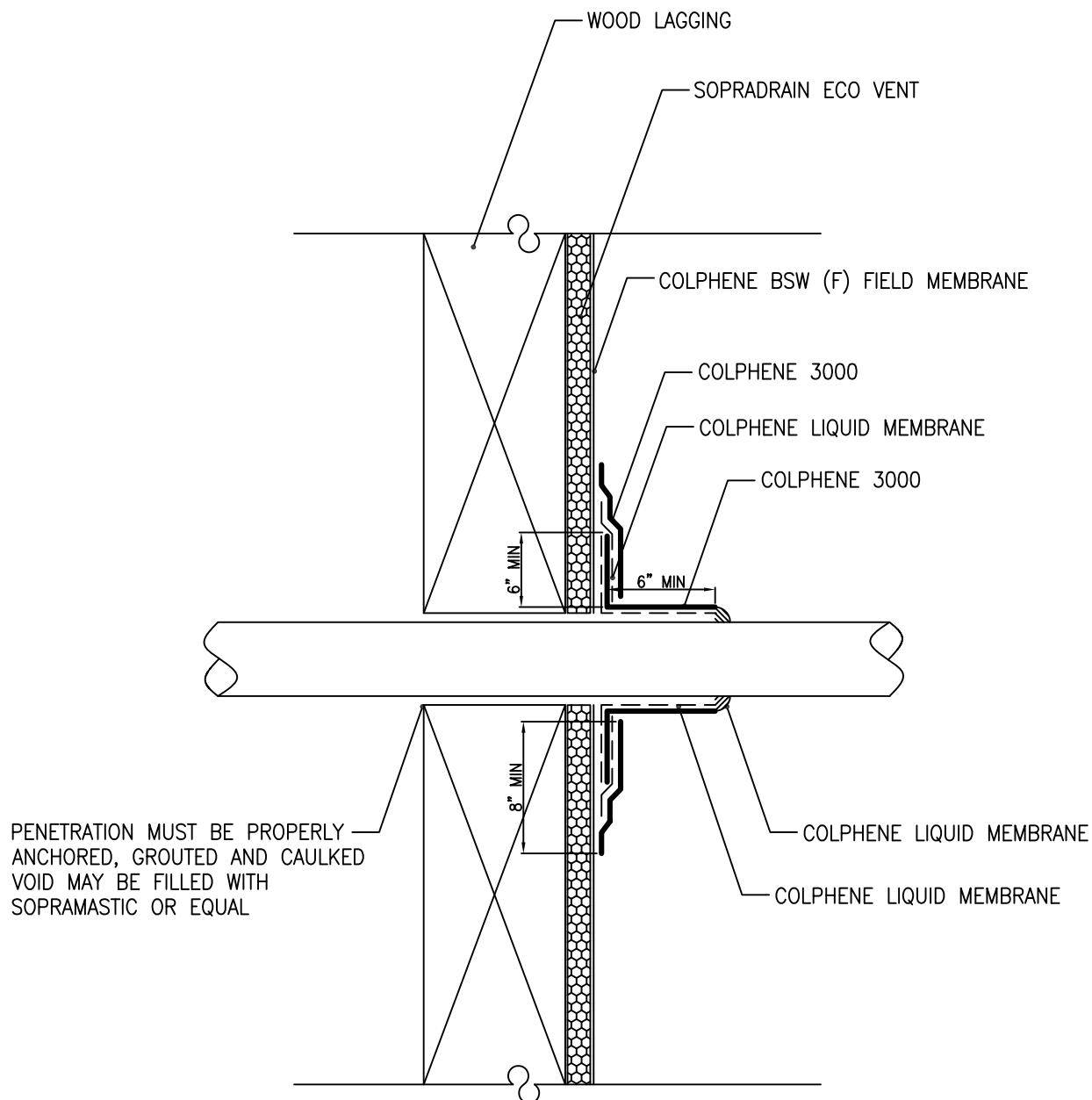


NOTES:

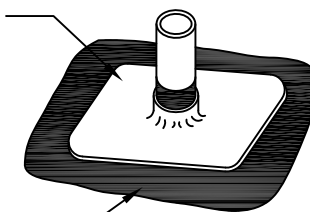
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. PENETRATIONS MUST BE FIRMLY SECURED AND PROPERLY PREPARED PRIOR TO THE INSTALLATION OF NEW MATERIALS. APPLY ELASTOCOL 600c PRIMER AS NEEDED.

|  |      |  |                           |
|--|------|--|---------------------------|
|  <b>SOPREMA</b><br>WATERPROOFING DIVISION |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |      | TITLE BSW- PIPE PENETRATION FLASHING                         |                           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP                 |
| DRAWING NUMBER   |      | BSW10  |                           |
|  |      |  | APPROVAL DATE<br>02/14/11 |
|  |      |  | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.




APPLY COLPHENE 3000 TIGHTLY OVER PIPE PENETRATION AND ONTO BASE COAT OF COLPHENE LIQUID MEMBRANE



NOTES:

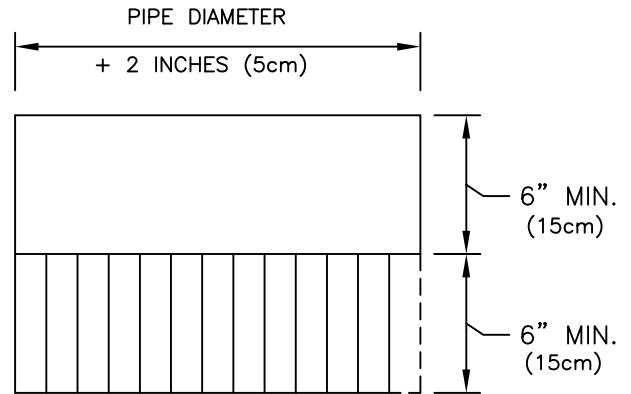
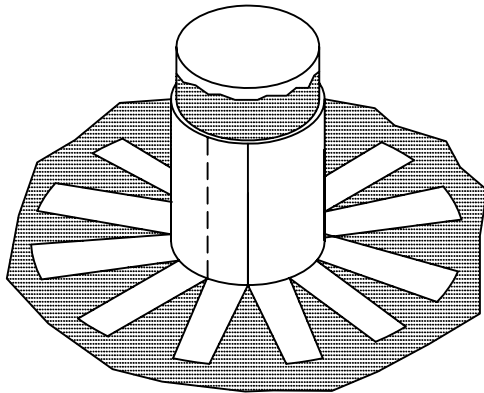
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. PENETRATIONS MUST BE FIRMLY SECURED AND PROPERLY PREPARED PRIOR TO THE INSTALLATION OF NEW MATERIALS. APPLY ELASTOCOL 600c PRIMER AS NEEDED.

|   |     |  |               |
|---|-----|--|---------------|
|  <b>SOPREMA</b><br><small>WATERPROOFING DIVISION</small> |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|   |     |  |               |
| TITLE BSW- VERTICAL PIPE PENETRATION FLASHING   |     |  |               |
| SCALE   | DWN | CHK  | APPROVAL DATE |
| NONE  | TM  | JP   | 02/14/11      |
| DRAWING NUMBER  |     |  | REV           |
| BSW11   |     |  | 0             |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

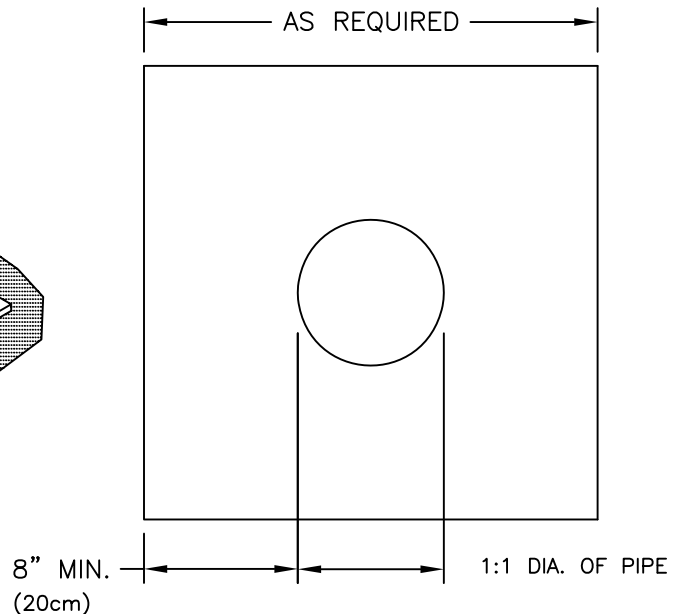
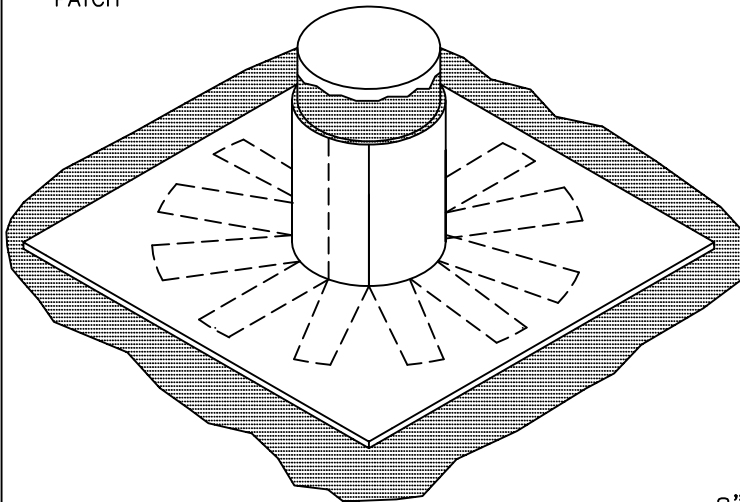
**STEP 1:**

CUT, THEN APPLY COLPHENE 3000 FINGER FLASHING IN COLPHENE LIQUID MEMBRANE AROUND PIPE. INSURE VERTICAL SHAFT OF PIPE IS FULLY COATED WITH COLPHENE LIQUID MEMBRANE. SEAL AND CAULK MEMBRANE AT LAP EDGE ON VERTICAL LAP EDGE OF THE MEMBRANE.




**STEP 2:**

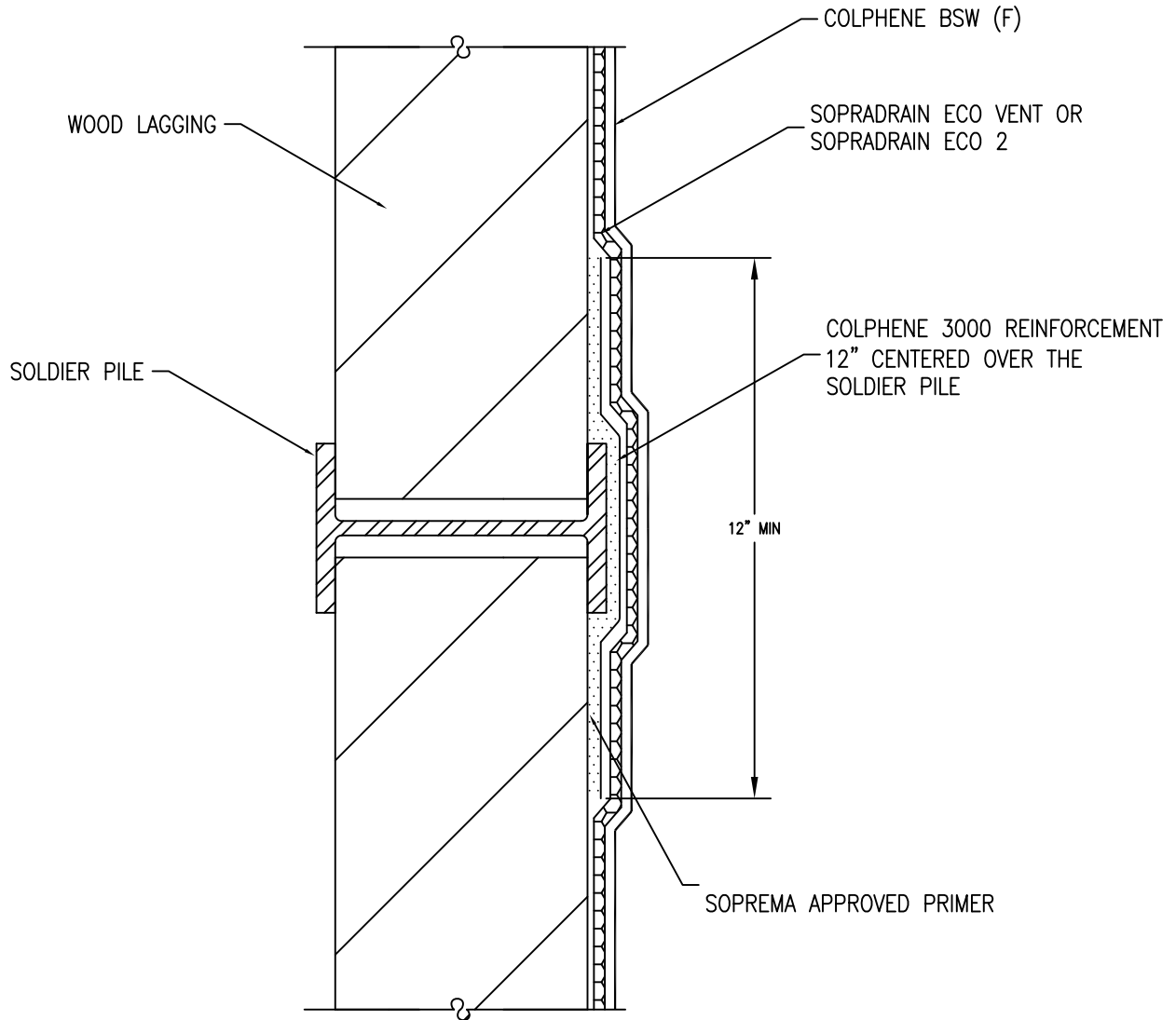
CUT, THEN APPLY COLPHENE 3000 TARGET PATCH IN A FULL BED OF COLPHENE LIQUID MEMBRANE INSURE ALL SERATED EDGES OF FINGER FLASHING ARE FULLY EMBEDDED IN COLPHENE LIQUID MEMBRANE AND COVERED BY FIRMLY SEATED TARGET PATCH



**NOTES:**


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. REMOVE ALL POSSIBLE CONTAMINANTS FROM ALL PIPE PENETRATIONS. PRIME, SAND AND PREPARE ALL PIPE SURFACES, THIS IS NECESSARY TO INSURE PROPER ADHESION
3. DETAIL IS TYPICAL FOR ALL STANDARD PIPE PENETRATIONS INCLUDING CONDUIT, PIPES AND VENTS
4. ALL PENETRATIONS MUST BE FIRMLY AND PROPERLY ANCHORED TO PROHIBIT ANY MOVEMENT
5. ALL VOIDS MUST BE SOLIDLY GROUTED OR APPROPRIATELY FILLED TO FORM A CLEAN, DRY AND SUITABLE SUBSTRATE

|  |     |                       |               |
|--|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| TYPICAL PIPE FLASHING CUTTING DIAGRAM  |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 02/14/11      |
| DRAWING NUMBER   |     |                       | REV           |
| BSW12  |     |                       | 0             |



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. IF COLPHENE BSW (F) IS USED AS THE REINFORCEMENT MEMBRANE IT MUST BE EMBEDDED IN AND CAULKED WITH COLPHENE LIQUID MEMBRANE.
3. SUBSTRATE MUST BE PRIMED PRIOR TO THE APPLICATION OF THE COLPHENE 3000 REINFORCEMENT MEMBRANE.

|  |     |                       |               |
|--|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| BLIND SIDE WATERPROOFING SOLDIER PILE REINFORCEMENT                                  |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | GP                    | 08/30/11      |
| DRAWING NUMBER   |     |                       | REV           |
| BSW13  |     |                       | 0             |



# AQUADERE

AQUADERE (09D)

Order No. S73225\*

Order No. S73225-A\*\*

\*For 1,000 Liter Tote (263 gallon)

\*\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Aquadere is a polymer emulsion-based primer designed to improve the adhesion of heat welded, hot asphalt and cold adhesive applied roofing and waterproofing membranes. Aquadere is applied to properly prepared horizontal and vertical surfaces prior to installation of flashing base membrane plies being installed. Acceptable surfaces are clean and dry concrete, metal, wood, or acceptable gypsum substrates. Aquadere can be used to prime the top surface of either an SBS base or inner ply prior to the flashing cap membrane being installed. Aquadere may be brush, roller, or spray applied.

### Aquadere Features and Benefits:

- May be used to prime base or ply sheet prior to installation of the ply or cap membrane.
- Brown when applied and black when ready to receive the membrane.
- Dries in one hour at 86° F (30° C) and three hours at 41° F (5° C).
- **Zero VOC's.**
- May be used anywhere Elastocol 500 is used over concrete, metal, or wood.

### Aquadere Limitations:

- Must be stirred or agitated before use.
- Store between 41° F (5° C) and 104° F (40° C); If stored at freezing; two days maximum at 32° F (0° C); it must be returned to 41° F (5° C) before use.
- This product is not suitable for plastic surfaces such as vinyl or water repellent treated panels.
- May not be used with self-adhered membranes.
- Minimum application temperature is 41° F (5° C) and rising.
- DO NOT THIN.

## COVERAGE & PACKAGING

| Product/<br>Property | AQUADERE  |
|----------------------|---|
| Description          | Brown liquid (dries black)  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L) pail or 263 gal. (1,000 L) tote   |
| Application          | 100 - 200 ft <sup>2</sup> /gal (0.4 - 0.8 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# COLPHENE 3000

SELF-ADHESIVE WATERPROOFING MEMBRANE

Order No. D10210\*

\* Boxed Summer Grade listed, contact Customer Service for unboxed Summer Grade and boxed or unboxed Winter Grade.

## DESCRIPTION

COLPHENE 3000 is a self-adhesive waterproofing membrane composed of SBS modified bitumen and a polyethylene woven composite facer. A silicone release film protects the self-adhesive underside.

COLPHENE 3000 is available in "summer grade" for applications at temperatures above fifty degrees (50° F) Fahrenheit (10° C) and "winter grade" for applications at temperatures between twenty-five degrees (25° F) Fahrenheit (-3.9° C) and fifty degrees (50° F) Fahrenheit (10° C).

## BASIC USE & APPLICATION

Refer to COLPHENE 3000 Guide Specification & Approved Details for specific application information.

COLPHENE 3000 is specially designed for vertical and horizontal waterproofing of foundation walls, tunnels, plaza decks, parking decks and split slab construction.

Starting at the low point, install COLPHENE 3000 to the primed substrate by peeling back the release film on the underside. Subsequent rolls shall be installed in the same manner and should be aligned with the preceding roll to maintain continuity. Use an approved roller and apply hand pressure over the entire surface to ensure solid adhesion to the substrate. The uppermost edge of the membrane shall be mechanically fastened to the substrate using approved fasteners and termination bars (vertical application only). All small protrusions (steel work, etc.) through the waterproofing membrane must be sealed with Sopramastic or Alsan Flashing. Contact SOPREMA Technical Department for specific application guidelines.

COLPHENE 3000 may also be used as a reinforcement for COLPHENE BSW (F).

## FEATURES & BENEFITS

- Tremendous resistance to hydrostatic pressure
- Excellent adhesion to most substrates
- UV resistant up to 30 days (Exposure should not exceed 30 days)
- Fully adhered, watertight laps
- Superior tensile strength, puncture resistance and dimensional stability
- Cold applied, no flames or kettles
- Easy to install

## LIMITATIONS

- COLPHENE 3000 should not be stored exposed to the elements. Rolls are stored upright on pallets.
- DO NOT install during inclement weather



# COLPHENE 3000

## PAGE 2

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### COMPOSITION & PACKAGING

| Product/<br>Property               | COLPHENE 3000  |
|------------------------------------|--|
| Reinforcement                      | none   |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | tri-laminate woven polyethylene                          |
| Underside                          | self-adhesive with release film                          |
| Approximate Nominal Thickness      | 60 mils (1.5 mm)   |
| Approximate Roll Coverage          | 201 ft <sup>2</sup> (18.7 m <sup>2</sup> )               |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 61 ft (18.6 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 64 lbs (29 kg)   |
| Rolls per Pallet*                  | 25 boxed   |
| * Rolls stocked upright on pallets |  |

### PHYSICAL PROPERTIES

| PROPERTIES   | TEST METHOD | TYPICAL VALUE             |
|--|-------------|---------------------------|
| Tensile strength, membrane   | ASTM D412   | 1624 lbf/in <sup>2</sup>  |
| Tensile strength, film   | ASTM D882   | 19500 lbf/in <sup>2</sup> |
| Elongation of rubberized asphalt   | ASTM D412   | >1000%                    |
| Low temperature flexibility  | ASTM D1970  | Unaffected at -31 °C      |
| Puncture resistance, membrane  | ASTM E154   | 168 lbs                   |
| Peel resistance  | ASTM D903   | 20 lbf/in                 |
| Resistance to hydrostatic head   | ASTM D751   | 231 ft of water           |
| Crack cycling at -32 °C, 100 cycles                                      | ASTM C836   | Unaffected                |
| Lap peel adhesion  | ASTM D1876  | 11.4 lbf/in               |
| Water vapor permeance  | ASTM E96    | 0.0086 perms              |
| Water absorption   | ASTM D570   | 0.1% maximum              |
| (All values are nominal. Test results from SOPREMA manufacturing plant.) |             |                           |

### WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



# SOPRABOARD

SOPRABOARD (82)

Order No. \*

\* See chart on Page 2 or contact your Customer Service or Sales Representative

## DESCRIPTION

SOPRABOARD is designed for use with Soprema's SBS modified bitumen membrane roof assemblies. Additionally, SOPRABOARD can be used as a protection board in Soprema's waterproofing systems and assemblies. The R-Values for one-eighth (1/8") inch thick (3.2 mm) and (1/4") inch thick (6.4 mm) Sopraboard are 0.11 and 0.17 respectively. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

SOPRABOARD is secured to an acceptable substrate by mechanical fastening, hot asphalt or approved cold adhesive. SOPRABOARD is an acceptable replacement for cover boards over most insulation substrates. The roof membranes are either hot mopped, heat welded, self-adhered or bonded to the SOPRABOARD using Approved cold adhesives. REMOVE PLASTIC FILM SEPARATOR FOR ALL ASSEMBLIES.

## COMPOSITION

SOPRABOARD is a multi-ply, semi-rigid asphaltic roofing substrate board composed of a mineral fortified asphaltic core formed between two asphaltic saturated fiberglass liners. Sopraboard must be stored flat -- NO DOUBLE-STACKING OF PALLETS.

## SURFACE PREPARATION

Apply to approved, clean and dry substrate following SOPREMA Approved Requirements, Approved Details and acceptable roofing practices. Not designed for permanent exposure. Ensure deck is suitable for installation of specified roof assembly. On recover projects, remove gravel, dirt, prime surface and bond SOPRABOARD using approx. 60 lbs (27 kg) per 100 ft<sup>2</sup> (9.29 m<sup>2</sup>) hot asphalt or approved coverage rate using insulation adhesive. When SOPRABOARD is mechanically fastened, the existing substrate does not need priming.

Soprema Approved SA Primer is applied to the top surface of SOPRABOARD when a self-adhered base ply is used. Install self-adhesive membrane ONLY when rolls have been stored in 70° F. (21° C.) conditions and ambient temperature is 50° F. (10° C.) and rising. During cool, cloudy, windy periods (less than 70° F [21° C]) with high humidity (early morning or late afternoon especially) use external heating of the Sopraboard with slight heat on the self-adhesive membrane roll to activate the self-adhesive so as to ensure full adhesion to the board. Install Sopraboard using good roofing practices which include warming Sopraboard during cold weather application to allow Sopraboard to lay flat.



## SOPRABOARD PHYSICAL PROPERTIES

| Board Thickness<br>inch (mm) | Compressive strength @<br>15% ASTM<br>D 545 psi | Tensile strength<br>ASTM<br>D 412 psi | Water absorption,<br>2h % max.<br>ASTM C 209 | Moisture content<br>ASTM<br>D 644 | Flexibility<br>(2" mandrel)<br>ASTM D 644 | Peel strength       |
|------------------------------|---|---------------------------------------|--|-----------------------------------|---|---------------------|
| 1/8" (3.2)*                  | 630   | 1050                                  | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 3/16" (4.7)                  | 470   | 700                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 1/4" (6.4)**                 | 440   | 450                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |

\* Meets ASTM D 6506, Class B, Type 2

\*\* Meets ASTM D 6506, Class B, Type 3

\*\*\* Depending upon primer and substrate used.

## APPROVALS

See Underwriters Laboratories, Inc. File No. R11436, FMG Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is 9001:2008 Certified. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

## WARRANTY

SOPREMA offers several warranty options dependent upon membrane combinations, system assembly, and environmental conditions. Contact your local SOPREMA representative for project warranty offerings.

## PACKAGING\*

| SOPRABOARD            |                |                           |               |           |
|-----------------------|----------------|---------------------------|---------------|-----------|
| SIZES                 | THICKNESS      | WEIGHTS**                 | SHEETS/PALLET | ORDER NO. |
| 4' X 4' (1.2 X 1.2 m) | 1/8" (3.2 mm)  | 14.4 lbs / sheet (6.5 kg) | 100           | D 08412   |
| 4' X 4' (1.2 X 1.2 m) | 3/16" (4.7 mm) | 21 lbs / sheet (9.5 kg)   | 55            | D 08414   |
| 4' X 4' (1.2 X 1.2 m) | 1/4" (6.4 mm)  | 27 lbs / sheet (12 kg)    | 60            | D 08416   |
| 4' X 5' (1.2 X 1.5 m) | 1/8" (3.2 mm)  | 18 lbs / sheet (8 kg)     | 100           | D 08410   |
| 4' X 5' (1.2 X 1.5 m) | 3/16" (4.7 mm) | 27 lbs / sheet (12 kg)    | 60            | D 08425   |
| 4' X 5' (1.2 X 1.5 m) | 1/4" (6.4 mm)  | 33 lbs / sheet (15 kg)    | 60            | D 08411   |
| 4' X 8' (1.2 X 2.5 m) | 1/8" (3.2 mm)  | 29 lbs / sheet (13 kg)    | 100           | D 08415   |
| 4' X 8' (1.2 X 2.5 m) | 3/16" (3.2 mm) | 43.5 lbs / sheet (20 kg)  | 55            | D 08413   |
| 4' X 8' (1.2 X 2.5 m) | 1/4" (3.2 mm)  | 55 lbs / sheet (25 kg)    | 40            | D 08423   |

\* DO NOT DOUBLE STACK PALLETS

\*\* Approximate Sheet Weight - All values are nominal per manufacturing tolerances.

\*\*\* Contact Customer Service or your Sales Representative



# COLPHENE LIQUID MEMBRANE

LIQUID-APPLIED DETAILING COMPOUND

Order No. \*

\*Contact Customer Service for Order Number and Availability.

## DESCRIPTION

COLPHENE LIQUID MEMBRANE is a two component, elastomeric, solvent free, cold applied material used in conjunction with a variety of Soprema waterproofing membranes.

## BASIC USE & APPLICATION

COLPHENE LIQUID MEMBRANE is an accessory product. Please refer to SOPREMA Guide Specifications & approved Details for specific application information.

**For use with COLPHENE 60 & COLPHENE 3000:**

COLPHENE LIQUID MEMBRANE is designed to be used as a fillet and/or reinforcement under Colphene 60/3000 membranes at inside and outside corners, penetrations/projections and membrane terminations.

**For use with COLPHENE BSW (F):**

COLPHENE LIQUID MEMBRANE is designed to be used as a membrane adhesive to seal end-laps and/or reinforcement at penetrations/projections and membrane terminations.

All work surfaces should be clean, dry, free of dirt, dust, debris, oils and other contaminants that may result in surfacing that is unsound.

- Keep temperature of cartridges between 65 and 85° F (18 - 29° C) twenty-four hours prior to use. Do not store in direct sunlight or high temperatures exceeding 90° F (32° C).
- Using a utility knife, remove the molded tips at the groove from the mixing head.
- Place the cartridge in to the appropriate applicator (label side up).
- Apply Colphene Liquid Membrane as recommended by Soprema. In order to avoid an initial inconsistent mix, the first small amount (approximately 12") of material from each cartridge should be discarded. NOTE: When sealing endlaps of Colphene BSW (F), apply liquid membrane and spread using approved hand trowel per Soprema recommendations.
- Once the approved sheet membrane is installed, immediately roll to ensure positive contact between Colphene Liquid Membrane and the sheet membrane.
- Partial cartridges can be applied at a later date by simply plugging the cartridges with the provided half moon plugs and using a new mixing tip.

## PACKAGING & COVERAGE

- Colphene Liquid Membrane is packaged in four (4) 1.5 L cartridges per case.
- Each cartridge will produce in a range of 50-75 linear feet of 3/4" - 1" wide beads.
- Coverage rates may vary when used over irregular surfaces.
- NOTE: Colphene BSW (F) endlaps are six inches (6") long and thirty-six inches (36") wide. Apply two (2) beads across the width (36") of the roll and spread using an approved hand trowel or putty knife.





# SBS MASTIC

SBS MASTIC (12)

Order No. D35651

## DESCRIPTION

SBS MASTIC is made from synthetic rubbers plasticized with bitumen and solvents. SBS MASTIC is provided in a cartridge container and used as a sealant to fill the void area on all self-adhered field and flashing base ply membrane side lap edges not having a bitumen bleed-out and on self-adhered membrane T-joints. This sealant can be applied to the seam edges before or after the Elastocol 500 (horizontal surfaces ONLY) or Elastocol 600c SA Primer (horizontal or vertical surfaces) is applied to Soprema high brush sanded SBS base membrane ply surfaces or self-adhesive field or base flashing membrane ply or inner ply surface prior to the next membrane layer being adhered. This product meets ASTM D 4586, Type I, Class II.

SBS MASTIC may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS MASTIC  |
|----------------------|---|
| Description          | sealant compound  |
| Installation         | standard cartridge gun  |
| Packaging            | caulking tube<br>10.4 oz. (310 ml)  |
| Application          | coverage varies according to size of bead,<br>temperature at application and<br>technique used by installer |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.







# ALSAN RS 230 FLASH

Alsan RS 230 Flash (Summer Formulation)

Order No. L-RS022S

Alsan RS 230 Flash (Winter Formulation)

Order No. L-RS022W

## DESCRIPTION & APPLICATION

Alsan RS 230 Flash is a high performance two-component rapid curing PMMA acrylic resin formulation used in Alsan RS cold liquid-applied membrane system applications.

### PRODUCT USES:

Alsan RS 230 Flash resin is combined with fleece fabric to form a monolithic, self flashing and self-adhering reinforced field membrane designed for use in interior and exterior new, tear-off and recovery applications.

Alsan RS 230 Flash may be used as an approved accessory for Soprema waterproofing systems.

### COLOR:

Alsan RS 230 Flash is available in Pebble Grey (RAL #7032) and White (RAL #9016, Order No. L-RS024S).

### VOC:

Alsan RS 230 Flash (winter and summer formulation) maximum content 54.34 g/L (catalyzed) as applied.

### PACKAGING:

Alsan RS 230 Flash resin (winter & summer formulation) is supplied in a 12-kg re-sealable container with locking ring.

### STORAGE:

Shelf life: 12 months in original unopened container. Always store closed containers in cool, ventilated and dry location away from heat and oxidizing agents. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C). Storing the containers above the recommended temperature may reduce the product's shelf life. The resin may polymerize at temperatures above 140°F (60°C). Avoid direct sunlight and heat source when storing products on project site.

### HANDLING:

Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product. Cured product may be disposed of in standard landfills. Uncured product is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NIOSH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

### MIXING:

Using a slow-speed (200 to 400 rpm) mechanical agitator, thoroughly mix the entire container of resin for two minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for two minutes and apply to substrate. Refer to Catalyst Dosages chart below for additional information.

### SURFACE PREPARATION:

Refer to Soprema Alsan RS "Substrate Preparation & Priming Guidelines" for information and requirements. Contact Soprema Technical Department for recommendations regarding specific applications.

### APPLICATION:

After mixing, apply resin to clean and prepared substrate at the required consumption using Soprema rollers, brushes or notched squeegee. The resin should be spread evenly onto the surface. See individual system specifications for specific guidelines regarding application of primer, membrane, topcoat and/or slip-resistant protective surfacing.



## TECHNICAL INFORMATION

### TEMPERATURE APPLICATION RANGES

|                    | Ambient temperature        | Substrate temperature      |
|--------------------|----------------------------|----------------------------|
| Summer formulation | 37° - 95°F<br>(3° - 35°C)  | 37° - 122°F<br>(3° - 50°C) |
| Winter formulation | 23° - 50°F<br>(-5° - 10°C) | 23° - 59°F<br>(-5° - 15°C) |

Substrate must not exceed a maximum six percent moisture content and maximum 96% relative humidity.

### COVERAGE RATES

|                           |                                     |
|---------------------------|-------------------------------------|
| Minimum total consumption | 0.28 kg/sf (3.0 kg/m <sup>2</sup> ) |
| Base coat minimum         | 0.19 kg/sf (2.0 kg/m <sup>2</sup> ) |
| Top coat minimum          | 0.09 kg/sf (1.0 kg/m <sup>2</sup> ) |

See recommendations for specific applications. Yields will vary depending upon substrate condition.

### CATALYST MIXING CHART

| Resin Quantity | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
|                | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 12.0 kg        | .48   | 48   | 5           | 0.24   | 24   | 2.5         |

### SET TIMES AT GIVEN TEMPERATURE

|                                    |                                 |                                  |
|------------------------------------|---------------------------------|----------------------------------|
| Ambient temperature                | 32°F (0°C) [Winter Formulation] | 68°F (20°C) [Summer Formulation] |
| Pot life:                          | 20 minutes                      | 15 minutes                       |
| Rain proof after:                  | 45 minutes                      | 30 minutes                       |
| Set time / walked on / next layer: | 90 minutes                      | 60 minutes                       |
| Fully cured:                       | 6 hours                         | 3 hours                          |

Pot life is dependent on ambient temperatures and will be reduced at higher temperatures. Minimum set times are approximate and may vary. Actual set times and cure times should be established in the field, based on actual field conditions.

### PHYSICAL PROPERTIES

| Property (as installed)                    | Values / Units        | Test Method            |
|--|-----------------------|------------------------|
| Membrane thickness                         | 115 mils (2.9 mm)     | ASTM D 5147 Section 5  |
| Peak load @ 73°F, avg.                     | 70 lbf/in (12.3 kN/m) | ASTM D 5147 Section 6  |
| Elongation @ peak load, avg.               | 42%                   | ASTM D 5147 Section 6  |
| Peak load @ 73°F, avg.                     | 90 lbf/in (15.8 kN/m) | ASTM D 412 (dumbbell)  |
| Elongation @ peak load, avg.               | 55%                   | ASTM D 412 (dumbbell)  |
| Shore A hardness, avg.                     | 81                    | ASTM D 2240            |
| Water absorbion, (Method I) (24h @ 73°F)   | 0.41%                 | ASTM D 570             |
| Water absorbion, (Method II) (48h @ 122°F) | 1.57%                 | ASTM D 570             |
| Low temperature flexibility                | -13° F (-25°C)        | ASTM D 5147 Section 11 |
| Dimensional stability (maximum movement)   | -0.063%               | ASTM D 5147 Section 10 |
| Tear strength                              | 107 lbf (0.5 kN)      | ASTM D 5147 Section 7  |

Values based on reinforced Alsan RS Systems at a coverage rate of 3.3 kg/m<sup>2</sup>



# ALSAN RS FLEECE

Alsan RS Fleece

Order No. \*\*

\*\* Contact Customer Service

## DESCRIPTION & INSTALLATION

Alsan RS Fleece is a non-woven, needle-punched polyester fabric reinforcement design for Alsan RS resin products.

**PRODUCT USES:**

Alsan RS Fleece is used as fabric reinforcement in Alsan RS two-component cold liquid-applied membrane systems to improve tear strength, puncture resistance, flexural fatigue and crack bridging capabilities while maintaining membrane uniformity.

**COLOR:**

Alsan RS Fleece is supplied as a white non-woven fabric.

**PACKAGING:**

Alsan RS Fleece is available in rolls 164 feet (50 m) long and in varying widths:

| FLEECE WIDTH         | FLEECE LENGTH  | GROSS COVERAGE | NET COVERAGE |
|----------------------|----------------|----------------|--------------|
| 41.3 inches (105 cm) | 164 ft. (50 m) | 584 sf         | 536 sf       |
| 20.7 inches (53 cm)  | 164 ft. (50 m) | 283 sf         | 255 sf       |
| 13.8 inches (35 cm)  | 164 ft. (50 m) | 188 sf         | 160 sf       |
| 4 inches (10 cm)     | 164 ft. (50 m) | n/a            | n/a          |

**STORAGE:**

Always store in a cool and dry location. Store flat to avoid deforming rolls and creasing fabric. Shelf life is indefinite with proper storage.

**HANDLING:**

Soprema Alsan RS Fleece may be disposed of in standard landfills. For more information, refer to instruction on the label of the package and to relevant Material Safety Data Sheet (MSDS).

**COVERAGE:**

Allow for a minimum 2" (5 cm) overlap at field and flashing side laps, 4" (10 cm) overlap at the end laps and a minimum 4: (10 cm) overlap at the base of the wall and all penetration flashings. Minimum of 5% should be considered for waste.

**SURFACE PREPARATION:**

Refer to Soprema Alsan RS "Substrate Preparation & Priming Guidelines" for information and requirements. Contact Soprema Technical Department for recommendations regarding specific applications.

**APPLICATION:**

Mix and apply Alsan RS resin in strict accordance with Soprema instructions. Apply mixed resin liberally to the prepared surface with a roller using a broad, even stroke. Roll out dry polyester fleece onto the liquid resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure). The fleece will begin to rapidly saturate the liquid resin. Allow fleece to saturate with resin from bottom up. Using a roller wet with resin, applying light pressure, roll the fleece with a medium nap roller to eliminate air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of fleece until fully saturated and continue to work resin. The correct amount of resin will leave no whiteness in fleece. The surface coating should be smooth and uniform.



# ALSAN RS FLEECE

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### TECHNICAL INFORMATION

| PHYSICAL PROPERTIES               |                          |                   |
|-----------------------------------|--------------------------|-------------------|
| Color                             | White                    |                   |
| Physical state                    | Solid                    |                   |
| Nominal thickness                 | 30-40 mils               |                   |
| Weight                            | 100 grams/m <sup>2</sup> |                   |
| Tensile strength @ break (N/50mm) | ≥130 longitudinal        | ≥150 longitudinal |
| Elongation                        | ≥50 longitudinal         | ≥70 longitudinal  |
| Tear resistance                   | 20 > daN                 |                   |
| Puncture strength                 | 24 > daN                 |                   |
| Permeability                      | -                        |                   |
| Water absorbtion                  | <1%                      |                   |



# ALSAN RS CATALYST POWDER

Alsan RS CATALYST POWDER

Order No. L-RS003

## DESCRIPTION & APPLICATION

Alsan RS Catalyst Powder is a reactive agent based on dibenzoylperoxide and is supplied as a white granular powder in pre-measured package boxes.

**PRODUCT USES:**

Alsan RS Catalyst Powder is a reactive agent used to induce curing of all Alsan RS resin products during membrane application.

**COLOR:**

Alsan RS Catalyst Powder is supplied as a white powder.

**PACKAGING:**

Alsan RS Catalyst Powder is available in prepackaged 0.1 kg packets.

**STORAGE:**

Always store closed containers in cool, ventilated and dry location away from open flame sources. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C).

**HANDLING:**

Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product. Cured product may be disposed of in standard landfills. Uncured product is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

**MIXING:**

Using a slow-speed (200 to 400 rpm) mechanical agitator, thoroughly mix the entire container of resin for two minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for two minutes and apply to substrate. Refer to individual product data sheets for specific recommendations and requirements for the resin being used. The amount of catalyst added to Alsan RS resins varies based on the resin type, weight of the resin used and temperature. Catalyze only the amount of material that can be used within the resins specified pot-life.



# ALSAN RS CATALYST

## PAGE 2

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### ALSAN RS 222 PRIMER, ALSAN RS 276 PRIMER CATALYST MIXING CHART

|                | 6% Catalyst Activation<br>32°F to 49°F (0°C to 10°C) |      |             | 4% Catalyst Activation<br>50°F to 68°F (15°C to 20°C) |      |             | 2% Catalyst Activation<br>69°F to 95°F (20°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.06   | 6    | n/a         | 0.04  | 4    | n/a         | 0.02  | 2    | n/a         |
| 10.0 kg        | 0.6  | 60   | 6           | 0.4   | 40   | 4           | 0.2   | 20   | 2           |

### ALSAN RS 230 FIELD CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
| Resin Quantity | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 25.0 kg        | 1   | 100  | 10          | 0.5  | 50   | 5           |

### ALSAN RS 230 FLASH CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
| Resin Quantity | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 12.0 kg        | .48   | 48   | 5           | 0.24   | 24   | 2.5         |

### 233 SELF-LEVELING MORTAR, 281 FINISH, 288 FINISH, RS PASTE CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 49°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>50°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 10.0 kg        | 0.4  | 40   | 4           | 0.2   | 20   | 2           |

### ALSAN RS TEXTURED COATING, ALSAN RS 290 TEXTURED FINISH CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 59°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 15.0 kg        | 0.6  | 60   | 6           | 0.3   | 30   | 3           |

### ALSAN RS DETAILER CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 49°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>50°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 2.0 kg         | 0.08   | 8    | n/a         | 0.04  | 4    | n/a         |

## FOR BELOW-GRADE WALLS / FOUNDATIONS



**COLPHENE 3000** is a high quality, self-adhesive waterproofing membrane ideal for waterproofing foundations, below-grade walls, plaza decks, and other concrete substrates. The membrane is composed of SBS modified bitumen and a tri-laminated woven polyethylene with multiple advantages.



### SURFACE PREPARATION

**COLPHENE 3000** must always be installed on clean, dry, solid substrates, which have been primed before application.

### COLPHENE 3000

Thickness ■ 1.5 mm (59 mils)

Dimension ■ 1 m x 18.7 m (39 in x 61 ft)

Made from the most reliable self-adhesive SBS modified bitumen in the industry.

A silicone release sheet protects the self-adhesive side.

### ADVANTAGES

- CONSISTENT THICKNESS
- SUPERIOR FLEXIBILITY
- PUNCTURE RESISTANT WITH HIGH TENSILE STRENGTH
- CAN BE APPLIED DIRECTLY ON ICF FOUNDATION BLOCKS
- PRE-CUT ROLLS AVAILABLE



# INSTALLATION INSTRUCTIONS

1



## PRIME

*the substrate.*

2



## PEEL BACK

*the top part of the silicone release film.  
Adhere the COLPHENE 3000, making sure  
the membrane is well aligned.*

3



## GRADUALLY PEEL BACK

*the remaining silicone release film, making  
sure the membrane is completely adhered.*

*The use of a hand roller is strongly recommended to remove  
air pockets.*

4



## USE

*SOPRAMASTIC to seal details  
and critical areas.*

*Backfill: In areas where pit-run sand is not available,  
a protective board is recommended to ensure the  
integrity of the waterproofing membrane.*

5



## COMPLETED

*waterproofing project.*

If you have any questions about this product or its installation, please contact your SOPREMA representative.



SOPREMA contributes to environmental protection and sustainable construction by manufacturing high quality products that meet the highest environmental standards. The Ginkgo Biloba leaf is the symbol selected by Soprema to represent its ecological commitment.



## **SELF ADHERED SHEET MEMBRANE WATERPROOFING**

### **COLPHENE 3000**

*This specification serves as a guideline and must be modified, as necessary, by the Designer of Record to suit the needs of the individual project. This specification is prepared in accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Any improvements and changes to the content of this specification can be made only with the written authorization of the Designer of Record. [delete this paragraph]*

#### **PART 1 – GENERAL**

##### **1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

##### **1.2 RELATED WORK**

- A. Division 2 – Site Work
- B. Division 3 – Concrete
- C. Division 4 – Masonry
- D. Division 5 – Structural Steel
- E. Division 6 – Rough Carpentry
- F. Division 7 – Sealants & Flashings
- G. Division 15 – Mechanical

##### **1.3 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
  - 1. D 5147 Standard Test Methods for Tensile Strength
  - 2. D 5147 Standard Test Methods for Ultimate Elongation
  - 3. D 5147 Standard Test Methods for Elongation of Rubberized Asphalt
  - 4. D 5147 Standard Test Methods for Flexibility at Cold Temperature
  - 5. D 5602 Standard Test Methods for Static Puncture
  - 6. D 5601 Standard Test Methods for Tear Resistance
  - 7. D 1876 Standard Test Methods for Lap Adhesion
  - 8. D 5147 Standard Test Methods for Water Absorption
  - 9. D 903 Standard Test Methods for Peel Resistance
  - 10. E 96(B) Standard Test Methods for Water Vapor Permeance
  - 11. C 836 Standard Test Methods for Crack Cycling at -32 C
  - 12. D 5385 Standard Test Methods for Resistance to Hydrostatic Head
- B. International Organization for Standardization (ISO) 9001:2000 Quality Standard

#### 1.4 SYSTEM DESCRIPTION

- A. Furnish and install a completed vertical and/or horizontal waterproofing assembly including a self-adhered sheet waterproofing membrane with a drainage / protection course. To ensure total system compatibility all products shall be purchased from a single-source manufacturer.

#### 1.5 SUBMITTALS

- A. Submit three (3) copies of the most current technical data sheets. These documents must describe the physical properties of the specified materials and explanations about product installation, including installation techniques, restrictions, limitations and any other manufacturer recommendations.
- B. Certification that all products are in compliance with specified ASTM criteria.
- C. Certification that all components of the waterproofing assembly are being supplied and warranted by a single manufacturer.
- D. Provide a specimen warranty from the manufacturer that includes all components of the waterproofing installation.

#### 1.6 QUALITY ASSURANCE

- A. **Refer to Section 1.5 SUBMITTALS.** Include items A, B, C & D.
- B. The installer must demonstrate his or her qualification to perform the work of this section by providing written evidence from the manufacturer providing the single-source warranty that the installer is an applicator in good standing and is authorized to install the specified waterproofing system on the project.
  - 1. Documentation of the installer's qualifications must be written on the manufacturer's letterhead, include the name and address of the installer and the full name and physical address of the waterproofing installation in the body of the letter, and must be signed by an authorized representative of the membrane manufacturer.
- C. **Refer to Section 1.4 DESCRIPTION.** All components of the waterproofing assembly must be supplied by the membrane manufacturer offering the single-source warranty.
- D. The manufacturer offering the single-source warranty must have full-time technical support staff to provide the installer with technical assistance in the installation of the products included in the warranty.
- E. Pre-Construction Conference. All parties responsible for work of this section are required to attend a pre-conference meeting to review the details of the project as they pertain to the integrity of the waterproofing assembly.
  - 1. All parties responsible for the work of this section are required to attend, including the architect, owner, installer and manufacturer offering the single-source warranty.
  - 2. All parties are to review the installation procedures of this section and the coordination required with related work.

**1.7 MANUFACTURER'S REPRESENTATIVE**

- A. The waterproofing materials manufacturer may delegate a representative to visit the work site at commencement of work.
- B. At all times, the contractor shall permit and facilitate access to the site by the manufacturer's representative cited above.

**1.8 DELIVERY, STORAGE & HANDLING**

- A. Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instruction for use and all identifying numbers.
- B. Store all materials in protected and well-ventilated areas. Only materials to be used the same day shall be removed from this location. Special care may be required at temperatures below 40°F (see product data sheets). Keep all materials away from open flame or welding sparks.
- C. Pails of materials shall be carefully stored and adequately protected in accordance with the manufacturer's recommendations.

**1.9 PROJECT CONDITIONS**

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.
- B. The General Contractor must provide for adequate protection of the installed membrane preventing damage that might arise from work performed by the other trades.
- C. Apply drainage / protection board / insulation as soon as possible after membrane installation.
- D. Do not allow waste products, including but not limited to petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat, to come in contact with the waterproofing membrane. Contaminated membrane must be cut out and replaced in accordance with the Approved Details.
- E. Concrete Deck/Wall Surface Condition; refer to Section 1.02 Related Sections.
- F. Concrete Deck/Wall Preparation; refer to Section 3.01 Surface Preparation.

**1.10 WARRANTY**

- A. Sheet Membrane Waterproofing: Upon completion of work, the contractor shall supply the owner with a single-source warranty issued by the manufacturer of the waterproofing assembly.
- B. The product manufacturer shall issue a written and signed document in the name of the owner, certifying the product will meet all the physical characteristics published by the manufacturer, for a period of [5] [10] years, starting from the date of completion of installation of membranes. No letter amending the manufacturer's standard warranty will be accepted and the warranty certificate must reflect these requirements.

**\*\*\* CONTACT SOPREMA FOR WARRANTY TERMS AND CONDITIONS\*\*\***

## PART 2 – PRODUCTS

### 2.1 GENERAL

- A. Waterproofing membrane components and accessories shall be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

Acceptable Manufacturer: Soprema Inc.  
310 Quadral Dr.  
Wadsworth, OH 44281  
Phone: 800-356-3521  
Fax: 330-334-4289  
Web Site: [www.soprema.us](http://www.soprema.us)

### 2.2 MATERIALS

- A. SHEET MEMBRANE WATERPROOFING: Colphene 3000 Summer Grade / Winter Grade manufactured by Soprema; a self-adhered, cold applied waterproofing membrane composed of SBS modified bitumen and a polyethylene woven complex top sheet. The membrane has a total thickness of 60 mils. Provide rubberized asphalt membrane covered with a release sheet which is removed during installation.

Specified product: **COLPHENE 3000 by SOPREMA, INC.**

| Properties                                      | Standards              | COLPHENE 3000               |
|---|------------------------|-----------------------------|
| Thickness (mm)                                  | –                      | 60 mils (1.5)               |
| Tensile strength, MD/XD (kN/m)                  | ASTM D5147             | 11.3 / 15.4 (64 / 88 lb/in) |
| Ultimate elongation, MD/XD (%)                  | ASTM D5147             | 40 / 25                     |
| Elongation of rubberized asphalt (%)            | ASTM D5147             | > 1000                      |
| Flexibility at cold temperature (°C)            | ASTM D5147             | -35 (-31 °F)                |
| Static puncture (N)                             | ASTM D5602             | 400 (90 lb)                 |
| Tear resistance, MD/XD (N)                      | ASTM D5601             | 375 / 400 (84 / 90 lb)      |
| Lap adhesion (N/m)                              | ASTM D1876             | 2000 (11.4 lb/in)           |
| Water absorption (%)                            | ASTM D5147             | 0.1 max                     |
| Peel resistance (N/m)                           | ASTM D903              | 3500 (20 lb/in)             |
| Water Vapor Permeance (ng/Pa·s·m <sup>2</sup> ) | ASTM E96 (Procedure B) | 0.49 (0.0086 perm)          |
| Crack cycling at -32 C, 100 Cycles              | ASTM C836              | Unaffected                  |
| Resistance to hydrostatic head                  | ASTM D5385             | 70 m min. (231 ft.)         |

- B. SURFACE PRIMER: Shall be a solvent based primer used specifically for self-adhered membranes. Primer is composed of a blend of natural resins and solvent/synthetic rubber; may be spray or roller applied.

Specified product: **ELASTOCOL 600c by SOPREMA, INC.**

SURFACE PRIMER: Asphalt primer conforming to ASTM D 41, low VOC, California compliant.

Specified product: **ELASTOCOL STICK WB PRIMER by SOPREMA, INC.**

SOPREMA Guide Specification  
Self-Adhered Sheet Membrane Waterproofing

- C. PREFABRICATED DRAINAGE BOARD: Shall be a composite drainage board consisting of a post –industrial recycled polypropylene core of fused, entangled filaments covered with a geocomposite filter fabric on its upper surface to allow water to pass into the drainage core while restricting the movement of soil particles and suitable for use in select vertical and horizontal applications.

Select one of the following: (edit for project requirements)

Specified product: **SOPRADRAIN ECO VENT by SOPREMA, INC.\*\***

Prefabricated composite drainage board consisting of a post-industrial recycled polypropylene core of fused, entangled filaments covered with a geocomposite filter fabric bonded to both sides.

Specified product: **SOPRADRAIN ECO 2 by SOPREMA, INC.\*\***

**\*\*NOTE: Sopradrain ECO VENT & ECO 2 exceed 40% post-industrial content and can help contribute up to 2 (two) LEED points when used in conjunction with other recycled content products.**

| Properties                    | Standards   | Values  |
|-------------------------------|-------------|---|
| Core:                         |             |   |
| Thickness                     | ASTM D-1777 | <b>ECO VENT, ECO 2 – 0.45 in.</b>                   |
| Compressive Strength          | ASTM D-1621 | <b>ECO VENT, ECO 2 - &gt;30,000</b>                 |
| Flow@ 3000 psf & 1.0 Gradient | ASTM D-4716 | <b>ECO VENT – 16 gpm/ft<br/>ECO 2 – 12.9 gpm/ft</b> |
| Fabric:                       |             |   |
| Flow Rate                     | ASTM D-4491 | <b>ECO VENT, ECO 2 – 120</b>                        |
| Grab Tensile Strength         | ASTM D-4632 | <b>ECO VENT, ECO 2 – 120 lbs</b>                    |
| Apparent Opening Size (AOS)   | ASTM D-4751 | <b>ECO VENT, ECO 2 – 70 sieve</b>                   |

**ALTERNATE Prefabricated Drainage Boards, per SPECIFIER, and as approved by SOPREMA, INC.**

- D. PROTECTION BOARD:

- Asphaltic Hardboard: Sopraboard manufactured by Soprema; shall be a pre-molded, semi-rigid asphaltic protection board composed of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

SOPREMA Guide Specification  
Self-Adhered Sheet Membrane Waterproofing

Specified product: **SOPRABOARD by SOPREMA, INC.**

2. **ALTERNATE** as approved by **SOPREMA, INC.**

E. **Insulation** *(If required, edit for project requirements)*

1. Rigid, extruded polystyrene insulation board for waterproofing assemblies meeting ASTM C-578 Type VI or Type VII criteria.
  - a) Insulation must be 40 psi or 60 psi compressive strength when tested in accordance with ASTM D-1621 criteria.
  - b) Water Absorption must be maximum 0.1% by volume when tested in accordance with ASTM C-272 criteria.
  - c) The foam blowing agent used in the manufacture of the insulation must provide at least 90% reduction in ozone potential as compared with standard CFC blowing agents. It shall be certified by the foam manufacturer to be CFC free.
  - d) The insulation must offer min R-5.0 per inch at 75° F mean temperature when tested in accordance with ASTM C-518 and be warranted by the manufacturer to retain at least 80% of its published R-value for the warranty period.

Specified product: **DOW Extruded Polystyrene Insulation Board offered by SOPREMA, INC.**

*Product types: STYROFOAM<sup>®</sup> Brand Plaza Deck; and High Load 100.  
Consult SOPREMA, INC. for required product type.*

E. **ACCESSORY PRODUCTS:**

1. Liquid membrane; two component, elastomeric, solvent free, cold applied fillet, adhesive, reinforcement.

Specified product: **COLPHENE LIQUID MEMBRANE by SOPREMA, INC.**

2. Multipurpose, elastomeric bitumen based mastic meeting ASTM D 4586, Type I, Class II.

Specified product: **SBS ELASTIC CEMENT by SOPREMA, INC.**

3. Synthetic rubbers, plasticized with bitumen and solvents to form an edge sealant compound, and meeting ASTM D 4586, Type I, Class II.

Specified product: **SBS MASTIC by SOPREMA, INC.**

4. Multipurpose, one part urethane sealant, edge sealant and caulking compound.

Specified product: **SOPRAMASTIC**

## SOPREMA Guide Specification

### Self-Adhered Sheet Membrane Waterproofing

5. Termination Bar: Extruded aluminum, 1" wide by .098" thick with sealant edge and fastener holes at maximum 12" centers.

Specified product: **As approved by SOPREMA, INC.**

6. Elastomeric, one step (two part) VOC compliant, solvent free quick setting foamable adhesive.

Specified product: **HIGH VELOCITY INSULATION ADHESIVE III by SOPREMA, INC.**

## PART 3 – EXECUTION

### 3.1 SURFACE INSPECTION

- A. The installer shall examine the substrates and other conditions under which this work is to be performed. Should any circumstances detrimental to the proper completion of the work, or deficiencies be determined, the Architect, Owner or General Contractor shall be given written notice of the unsatisfactory condition. Do not proceed with the installation of the specified waterproofing assembly until all surface deficiencies and unsatisfactory conditions have been corrected.
- B. All concrete surfaces must be finished with a wood float or wood trowel; very smooth surfaces (e.g. surfaces finished with a steel trowel) must be scarified, profiled or etched prior to installation of the waterproofing membrane to ensure proper bonding.
- C. Verify that concrete has cured and aged for minimum time period recommended by membrane manufacturer.
- D. Verify that substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D-4263.
- E. Determinations of bond strength and moisture content are the responsibility of the contractor and shall be performed periodically by the contractor throughout the course of work.
- F. Do not install materials in conditions of inclement weather.

### 3.2 SURFACE PREPARTION

- A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminates such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing. Meet requirements detailed in ASTM D 5295 "Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems".
- B. Cast-In-Place Concrete Substrates:

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1. Do not proceed with installation until concrete has properly cured and dried (minimum 7 days for normal structural concrete poured on a vented deck and minimum 14 days for lightweight structural concrete). Horizontal slabs should be sloped for positive drainage.
  2. Fill form tie rod holes with concrete and finish flush with surrounding surface.
  3. Repair substrate irregularities and imperfections, grouting and sealing joints and transitions as required to finish flush with surrounding surface areas.
  4. All concrete shall be smooth and free of voids. All areas shall be free of honeycombs, sharp protrusions, fins, laitance, and will be free of damaged, spalled areas.
  5. Grind irregular construction joints to suitable flush surface. Dissimilar materials must receive a reinforcing membrane.
  6. Form Release Agents: Petroleum based products, distillates are not to be used.  
**Contact SOPREMA**
- C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.
- D. Wood Substrates: Apply waterproofing membrane over securely fastened, sound surface. All joints and fasteners shall be flush to create a smooth surface.
- E. Related Materials: Treat joints and install flashing as recommended by waterproofing membrane manufacturer.

### 3.3 MEMBRANE INSTALLATION

- A. GENERAL : Refer to membrane manufacturer's literature for recommendations on installation, including but not limited to the following:
1. Apply primer by spray or roller at a rate recommended by the membrane manufacturer. Recoat areas not waterproofed if contaminated by dust. Allow to dry per membrane manufacturer's recommendations.
  2. All joints are to have been properly grouted, sealed and to have received the appropriate water stop as required. All such materials are to be fully cured and functioning as the primary joint seal, prepared to receive the waterproofing membrane. These joints, control joints, and any crack over 1/16" wide will be void free and stripped in with a 9" wide strip of Colphene 3000 membrane.
  3. Tee joints that occur during installation of the membrane will be coated 6" in all directions with a bed of troweled Colphene Liquid Membrane, and as necessary to assure all lap edges in the tee-joint will remain sealed. An additional layer of Colphene 3000 membrane may be required to be embedded in the Colphene Liquid Membrane and extend past the joint 6" in all directions.
  4. After cleaning, removal of all loose materials and proper surface preparation, all cuts, tears, abrasions, poor seam adhesion, and slit blemishes, fishmouths, wrinkles, and all other imperfections will be repaired with Colphene 3000 membrane extending 6" in all directions from the point of repair. The edges of this patch will receive a trowel



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### Self-Adhered Sheet Membrane Waterproofing

application of Colphene Liquid Membrane, Sopramastic SM-1, SBS Mastic, SBS Elastic Cement, or Alsan Flashing.

#### B. HORIZONTAL INSTALLATION:

1. All drains are to be seated flush with the deck, immobilized and grouted as required to eliminate voids. At all drain locations, one reinforcing ply of Colphene 3000 membrane is to be centered over the drain, extending a minimum of 12" past the drain bowl in all directions, onto the substrate. Apply a continuous bead of Colphene Liquid Membrane at the perimeter edges of this ply. Cut out the drain opening to allow the reinforcing ply to extend past the clamping ring. Center a ply of field membrane creating a dual ply at drain locations, also cutting the field ply to extend past the clamping ring. Apply Colphene Liquid Membrane into the drain bowl sealing the edges of both plies of Colphene 3000, and extended back 4" onto the horizontal surface where the clamping ring will seat. After cure of the Colphene Liquid Membrane, set and seat the clamping ring engaging both plies as the ring is secured.
2. All angle changes (vertical wall to horizontal deck substrate; and inside corners, wall to wall) will receive a bead of Colphene Liquid Membrane applied to extend 3" onto the vertical wall and 3" onto the horizontal deck. Install a 12" width of Colphene 3000 as a reinforcement membrane centered 6" up the wall and 6" onto the deck (wall to wall is to be centered 6" onto one wall and 6" onto the opposing wall). Apply pressure to insure membrane is fully adhered and sealed tightly. Outside corners will receive a 12" width of Colphene 3000 as a reinforcement, wrapping the corner 6" in each direction (Colphene Liquid Membrane is not required). Corners must be tightly seated and sealed from the finished side with Colphene Liquid Membrane as required. As the field membrane is installed, ensure all reinforcement membrane is covered, providing a full two ply finished assembly. All perimeter wall terminations are required, and must meet local building code requirements and Soprema Approved Details.
3. Install the Colphene 3000 membrane in shingle fashion, starting at the low point so the laps will properly shed water. Side-laps shall be 3", end-laps shall be 6" and staggered a minimum 12" from adjacent seams. Roll in place using a 75 lb. (min.) weighted roller. Ensure that all laps are firmly and smoothly adhered without voids, wrinkles, or fishmouths.
4. All penetrations are to be firmly anchored from the underside, immobilized and grouted flush to eliminate voids. Install Colphene 3000 to within ½" of the penetration. Apply a continuous bead of Colphene Liquid Membrane at the base of the penetration extended onto the horizontal deck 3" and up the penetration to the height of the finish elevation. Option: Alsan Flashing is accepted and approved for all penetration flashing and detailing. Install Colphene 3000 to within ½" of the penetration and apply Alsan H-80 Primer if needed. Apply Alsan Flashing base coat extended onto the deck 4" and up the penetration to the height of the finish elevation, Embed 6" wide reinforcing strip of Alsan Fleece, extended 3" onto the deck and 3" vertically up the penetration. Apply Alsan Flashing top coat extended 4" onto the horizontal deck and vertically to the height of the finished elevation.
5. Refer to Soprema Standard Details for additional flashing options.

#### C. VERTICAL INSTALLATION:

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### Self-Adhered Sheet Membrane Waterproofing

1. Footer and all angle changes, (vertical wall to horizontal deck substrate; and inside corners, wall to wall) will receive a bead of Colphene Liquid Membrane applied to extend 3" onto the vertical wall and 3" onto the horizontal deck. Install a 12" width of Colphene 3000 as a reinforcement membrane centered 6" up the wall and 6" onto the footer/deck (wall to wall is to be centered 6" onto one wall and 6" onto the opposing wall). Apply pressure to insure membrane is fully adhered and sealed tightly. Outside corners will receive a 12" width of Colphene 3000 as a reinforcement, wrapping the corner 6" in each direction (Colphene Liquid Membrane is not required). Corners must be tightly seated and sealed from the finished side with Colphene Liquid Membrane as required. As the field membrane is installed, ensure all reinforcement membrane is covered, providing a full two ply finished assembly. All perimeter wall terminations are required and must meet local building code requirements and Soprema Approved Details.
2. Install Colphene 3000 membrane with 3" minimum side laps, 6" minimum end laps, in maximum 8' lengths. Roll in place using firm pressure with a hand roller. Ensure that all laps are firmly and smoothly adhered and that there are no voids or fishmouths. Trowel a bead of Colphene Liquid Membrane, Sopramastic SM-1, SBS Mastic, or SBS Elastic Cement to all horizontal and all vertical terminations at the end of each day, and to laps that occur within 12" of a corner.
3. All penetrations are to be firmly anchored from the interior, immobilized and grouted flush to eliminate voids. Install Colphene 3000 to within ½" of the penetration. Apply a continuous bead of Colphene Liquid Membrane at the base of the penetration extended onto the vertical wall 3" and onto the penetration 12" minimum. Option: Alsan Flashing is accepted and approved for all penetration flashing and detailing. Install Colphene 3000 to within ½" of the penetration and apply Alsan H-80 Primer if needed. Apply Alsan Flashing base coat extended onto the wall 4" and a minimum of 12" onto the penetration. Embed 6" wide reinforcing strip of Alsan Fleece, extended 3" onto the wall and 3" out onto the penetration. Apply Alsan Flashing top coat extended 4" onto the wall and onto the penetration 12" minimum.
4. Terminations: Membrane shall be terminated in accordance with Soprema Approved Details. Colphene 3000 membrane will be terminated at or above grade by firmly seating and sealing top edge of the sheet, and applying a bead of Sopramastic SM-1 at the top edge of the sheet. The extruded aluminum termination bar will be fastened with appropriate, approved fasteners on not less than 12" centers. The termination bar must provide constant, adequate, even pressure to hold the membrane in place. Add additional fasteners as conditions (and assembly) require. Sopramastic SM-1 will be applied in the sealant ledge of the termination bar.

### 3.4 WATER TEST

- A. Flood Testing: Flood test each deck area for leaks, according to recommendations in ASTM D-5957, *Standard Guide for Flood Testing Horizontal Waterproofing Installations*, after completing and protecting waterproofing but before overlaying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.
  1. Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches. Maintain 2 inches of clearance from top of flashing membrane. It is recommended to flood each deck area for 48 hours.

- B. **VERIFY that the depth of water shall not exceed the load capacity of the deck.**
- C. After flood testing, repair any leaks or damaged membrane, repeat flood testing and make further repairs until waterproofing installation is fully watertight. The Owner may engage an independent testing agency to observe flood testing procedures and results.
- D. In lieu of flood testing, Electronic Breach Detection is an acceptable alternative. Contact **SOPREMA, INC.**

### 3.5 DRAINAGE / PROTECTION BOARD INSTALLATION

#### A. HORIZONTAL INSTALLATION:

Install the specified drainage layer directly on the waterproofing membrane with the filter fabric up, according to membrane manufacturer's written instructions. Use methods that do not penetrate the waterproofing assembly. Abut the drainage panels and overlap the shiplap filter fabric over the adjacent board. Carefully cut the drainage panels to fit the surface, ensuring that the waterproofing membrane is not damaged. Protect installed drainage panels during subsequent construction.

#### B. VERTICAL INSTALLATION:

Place and secure prefabricated drainage panels with the filter fabric facing away from vertical wall substrate. Use methods that do not penetrate waterproofing. Lap edges and ends of geotextile to maintain continuity. Protect installed drainage panels during subsequent construction. Install drainage panels or approved protection board in accordance with membrane manufacturer's written instructions.

(If required) Apply adhesive with spots 75mm (3 in) in diameter, every 900mm (36 in). Bottom panel should be supported. On the top row of protection board, apply a continuous bead of adhesive 25mm (1 in) wide to the top leading edge of the panels to be adhered. This bead will protect the adhesive spots during initial cure by limiting the flow of moisture behind the board in case of rain.

*Note: Backfilling should commence immediately after installation of protection boards.*

### 3.6 JOB COMPLETION

- A. Protect waterproofing from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by membrane manufacturer of affected construction.

**-END OF SECTION-**



## Colphene 3000 Training and Application Guide

### Colphene 3000 Waterproofing Membrane.

#### **1. Prepare substrate**

- Substrate must be structurally sound.
- Substrate must be visibly dry and free of moisture (As a minimum, test for capillary moisture by plastic sheet method according to ASTM D-4263: further intensive testing may be required ).
- Surface must be free of voids, spalled areas, loose aggregate and sharp protrusions.
- Remove all contaminates (such as grease, oil and wax) from all exposed surfaces.
- Remove dust, dirt, loose stone and debris.
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Meet requirements detailed in ASTM D 5295 "Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems".

##### A. Cast In Place Concrete Substrates

- Verify Concrete has cured and aged for minimum time period.
- Horizontal slabs should be sloped for positive drainage.
- Fill form tie rod holes with concrete and finish flush with surrounding surface.
- Repair substrate irregularities and imperfections.
- Ensure all concrete is smooth and free of voids.
- Grind irregular construction joints to suitable flush surface. Dissimilar materials must receive a reinforcing membrane.
- Petroleum based products/ distillates are **not** to be used.

##### B. Masonry Substrates

- Ensure concrete block or brick has smooth trowel-cut mortar joints or parge coat.

##### C. Wood Substrates

- Ensure surface is sound and securely fastened.
- All joints and fasteners shall be flush to create a smooth surface.

##### D. General

- Examine the substrates and other conditions under which this work is to be performed.
- Should any circumstances detrimental to the proper completion of the work, or deficiencies be determined, the Architect, Owner or General Contractor shall be given written notice of the unsatisfactory condition.

- Do not proceed with the installation of the specified waterproofing assembly until all surface deficiencies and unsatisfactory conditions have been corrected.

## 2. Apply Surface Treatment

Acceptable Primers: Elastocol 600C and Elastocol Stick WB (asphalt primer conforming to ASTM D41, low VOC, California compliant)

- Apply primer by spray or roller at the recommended rate of coverage (see PDS for recommended coverage rates).
- Allow primer to dry per manufactures recommendations (drying time can vary from 30 minutes to 2 hours).
- Only apply primer to recommended, suitably prepared substrate, not the membrane.



## 3. Pre-treat All Details

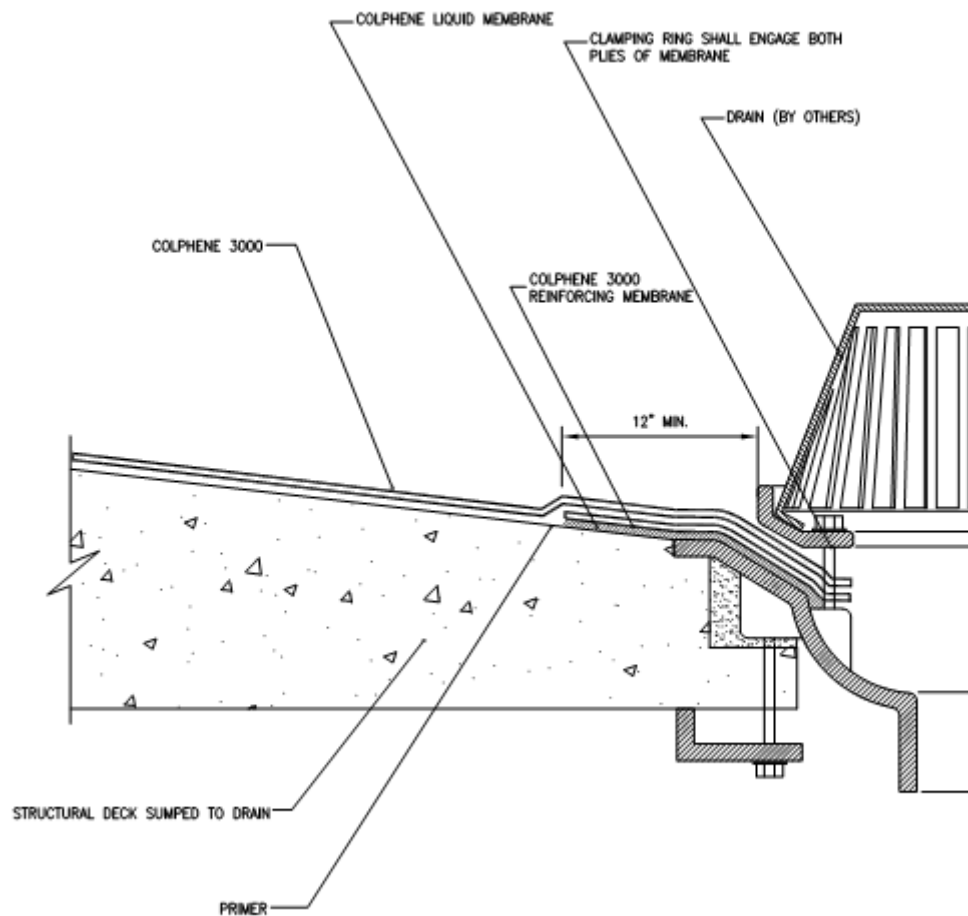
### A. Control Joints, Construction joints, Cracks and expansion Joints

- Properly grout, seal and apply the appropriate water stop (as required).
- Ensure all materials are cured and functioning as the primary joint seal.
- Joint, control joints and any crack over 1/16" will be void free and striped in with a strip of 9" Colphene 3000 centered, extended 4.5" each side of the joint/crack.

### B. Drains

- Immobilize and grout drains to eliminate voids. All drains must be sumped and set lower than the surrounding deck area.
- Pre-cut a target patch of Colphene 3000 reinforcement ply over drain extending a minimum of 12" past drain in all directions. Conditions may require the Colphene 3000 target patch be set in a full bed of Colphene Liquid Membrane.

- Apply a continuous bead of Colphene Liquid Membrane at the perimeter edges of the Colphene 3000 reinforcement ply.
- Cut out drain opening (allow the reinforcing ply to extend past the clamping ring).
- Center a ply of field membrane over the drain on top of the reinforcement ply.
- Cut out drain opening (allow the reinforcing ply to extend past the clamping ring).
- Apply Colphene Liquid Membrane into the drain bowl sealing the edges of both plies of Colphene 3000, and extended back 4" onto the horizontal surface where the clamping ring will seat, including inside the drain bowl past the clamping ring.
- Just prior to full cure of the Colphene Liquid Membrane, set and seat the clamping ring engaging both plies as the ring is secured.



## C. Corners and Angle Changes

### ***C.1 Angle Changes***

- All angle changes (vertical wall to horizontal deck substrate; and inside corners, wall to wall) will receive a bead of Colphene Liquid Membrane applied to extend 3" onto the vertical wall and 3" onto the horizontal deck.

- Install a 12" width of Colphene 3000 as a reinforcement membrane centered 6" up the wall and 6" onto the footer/ deck (wall to wall is to be centered 6" onto one wall and 6" onto the opposing wall).
- Apply pressure to ensure a fully adhered membrane and tight seal.

### ***C.2 Corners***

- Outside corners will receive a 12" width of Colphene 3000 as reinforcement, wrapping the corner 6" in each direction (Colphene Liquid Membrane not Required).
- Corners must be tightly seated and sealed (from the finished side) with Colphene Liquid membrane as required.
- Apply the field membrane fully covering the corner reinforcement membrane (two ply finished assembly).

## **4. Horizontal Application**

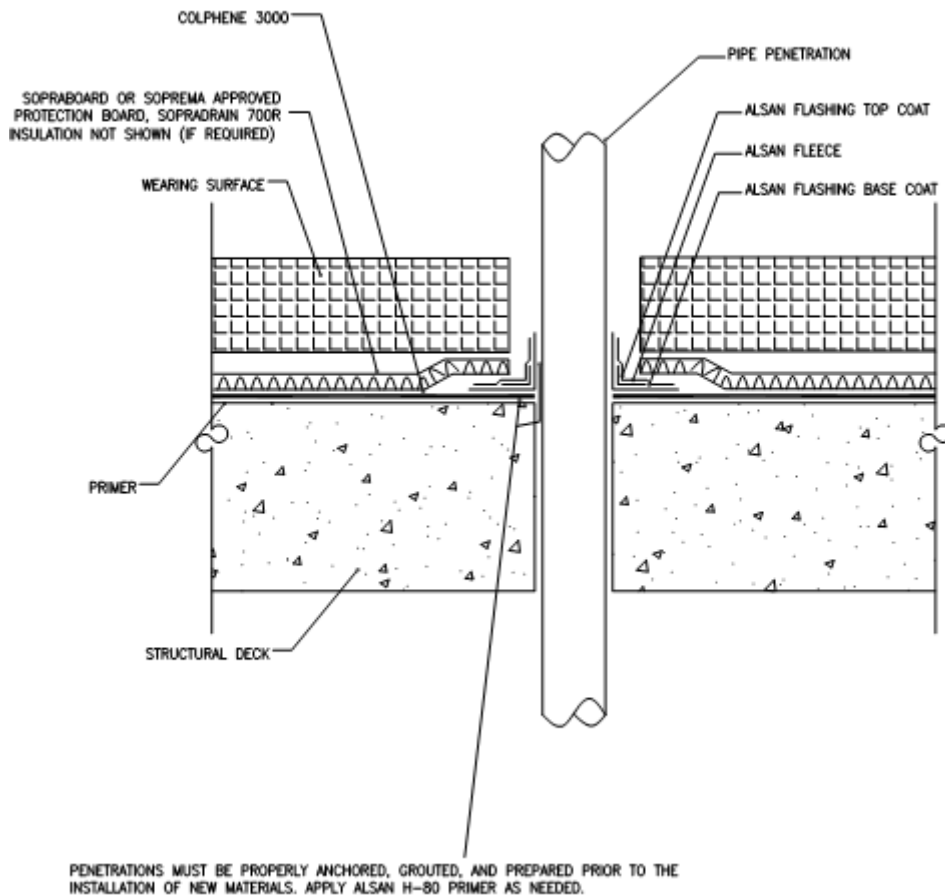
- Install Colphene 3000 in a shingle fashion (starting at the low point so the laps will properly shed water).
- Side laps shall be 3".
- End laps shall be 6".
- Stagger end laps a minimum of 12" from adjacent seams.
- Roll in place using a 75 lb. (min.) weighted roller.
- Ensure that all laps are firmly and smoothly adhered.
- Ensure no wrinkles, voids, fishmouths are present.
- All penetrations must be firmly anchored from the underside, immobilized and grouted flush to eliminate voids.
- Apply a continuous bead of Colphene Liquid Membrane at the base of the penetration extended onto the horizontal deck 3" and up the penetration to the height of the finish elevation.
- Install Colphene 3000 to within ½" of the penetration.
- Membrane tee joints will be coated 6" in all directions with a bed of troweled Colphene Liquid Membrane.
- An additional (optional) layer of Colphene 3000 shall be embedded in the Colphene Liquid Membrane extending past the joint 6" in all directions.

**Note:** *Alsan Flashing and Alsan RS Flashing is accepted and approved for all penetration flashing and detailing.*

- *Install Colphene 3000 to within ½" of the penetration and apply Alsan Trafic HP510 zero primer if needed.*



- Apply Alsan Flashing base coat extended onto the deck 4" and up the penetration to the height of the finish elevation, Embed 6" wide reinforcing strip of Alsan Fleece, extended 3" onto the deck and 3" vertically up the penetration.
- Apply Alsan Flashing top coat extended 4" onto the horizontal deck and vertically to the height of the finished elevation.



## 5. Vertical Application

- Install Colphene 3000 with minimum 3" side laps and 6" end laps.
- Install Colphene 3000 in maximum 8' lengths (longer lengths may be used with prior approval from Soprema).



- Roll in place using firm pressure with a hand roller.
- Ensure all laps are firmly and smoothly adhered.
- Ensure no wrinkles, voids, fishmouths are present.
- Trowel a bead of Colphene Liquid Membrane, Sopramastic SM-1, SBS Mastic, or SBS Elastic Cement to all horizontal and all vertical terminations at the end of each day, and to laps that occur within 12" of a corner.
- All penetrations must be firmly anchored from the underside, immobilized and grouted flush to eliminate voids.
- Apply a continuous bead of Colphene Liquid Membrane at the base of the penetration extended onto the vertical wall 3" and up the penetration a 12" minimum.
- Install Colphene 3000 to within ½" of the penetration.
- Colphene 3000 membrane will be terminated at or above grade by firmly seating and sealing the top edge of the sheet.
- Apply a bead of Sopramastic SM-1 at the top edge of the sheet.



- Install extruded aluminum termination bar using Soprema approved fasteners on not less than 12" centers.
- Add additional fasteners as conditions (and assembly) require to achieve uniform compression of the membrane to the substrate.

- Sopramastic SM-1 will be applied in the sealant ledge of the termination bar.
- Membrane tee joints will be coated 6" in all directions with a bed of troweled Colphene Liquid Membrane.
- An additional (optional) layer of Colphene 3000 shall be embedded in the Colphene Liquid Membrane extending past the joint 6" in all directions.

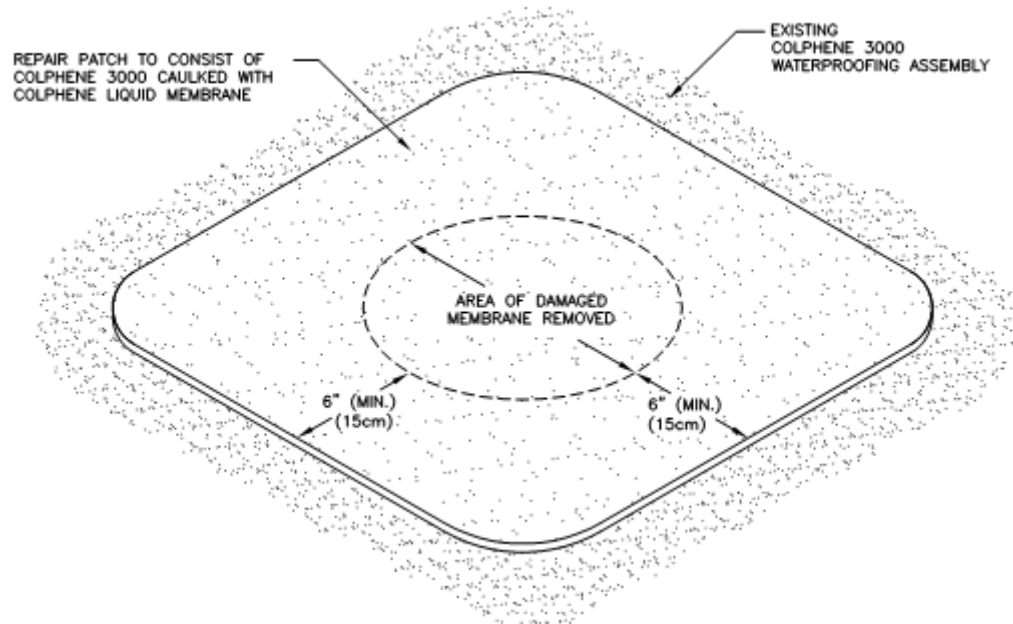
**Note:** *Alsan Flashing and Alsan RS Flashing is accepted and approved for all penetration flashing and detailing.*

- *Install Colphene 3000 to within ½" of the penetration and apply Alsan Traffic HP510 zero primer if needed.*
- *Apply Alsan Flashing base coat extended onto the wall 4" and a minimum of 12" onto the penetration, Embed 6" wide reinforcing strip of Alsan Fleece, extended 3" onto the wall and 3" out onto the penetration.*
- *Apply Alsan Flashing top coat extended 4" onto the wall and onto the penetration minimum 12".*

## 6. Work Inspection

### A. Visual Work Inspection

- Review entire membrane installation.
- If a damaged area is found repair the damaged area by applying a repair patch of Colphene 3000 6" in all directions of the damaged area.



- Apply a bead of Colphene Liquid Membrane, Sopramastic SM-1, SBS Mastic, or SBS Elastic Cement on the perimeter edges of the repair patch.

#### B. Using Water Test (for horizontal applications)

- Flood test each deck area leaks (ASTM D5957 *Standard Guide for Flood Testing Horizontal Waterproofing Installations*) before overlaying construction is placed.
- VERIFY that the depth of water shall not exceed the load capacity of the deck.
- Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches.
- Maintain 2 inches of clearance from top of flashing.
- Recommended flood time for each deck area is 48 hours.
- After flood testing, repair any leaks or damaged membrane.
- After repairs are made repeat flood test until the waterproofing installation is fully watertight.
- The Owner may engage an independent testing agency to observe flood testing procedures and results.

**Note:** *In lieu of flood testing, Electronic Breach Detection is an acceptable alternative. Please contact Soprema for details.*

### 6. Drain Board/Protection Board Installation

**Current Specified Drainboards:** Sopradrain ECO-Vent, Sopradrain ECO 2

**Specified Protection Board:** Sopraboard or Soprema approved alternate

#### A. Horizontal Installation

- Install the specified drainage layer directly on the waterproofing membrane with the filter fabric up.
- Installation methods should be harmless to the waterproofing assembly.
- Abut the drainage panels and overlap the shiplap filter fabric over the adjacent board.
- Cut the drainage panels to fit the surface (use caution not to damage the waterproofing assembly).

#### B. Vertical Installation

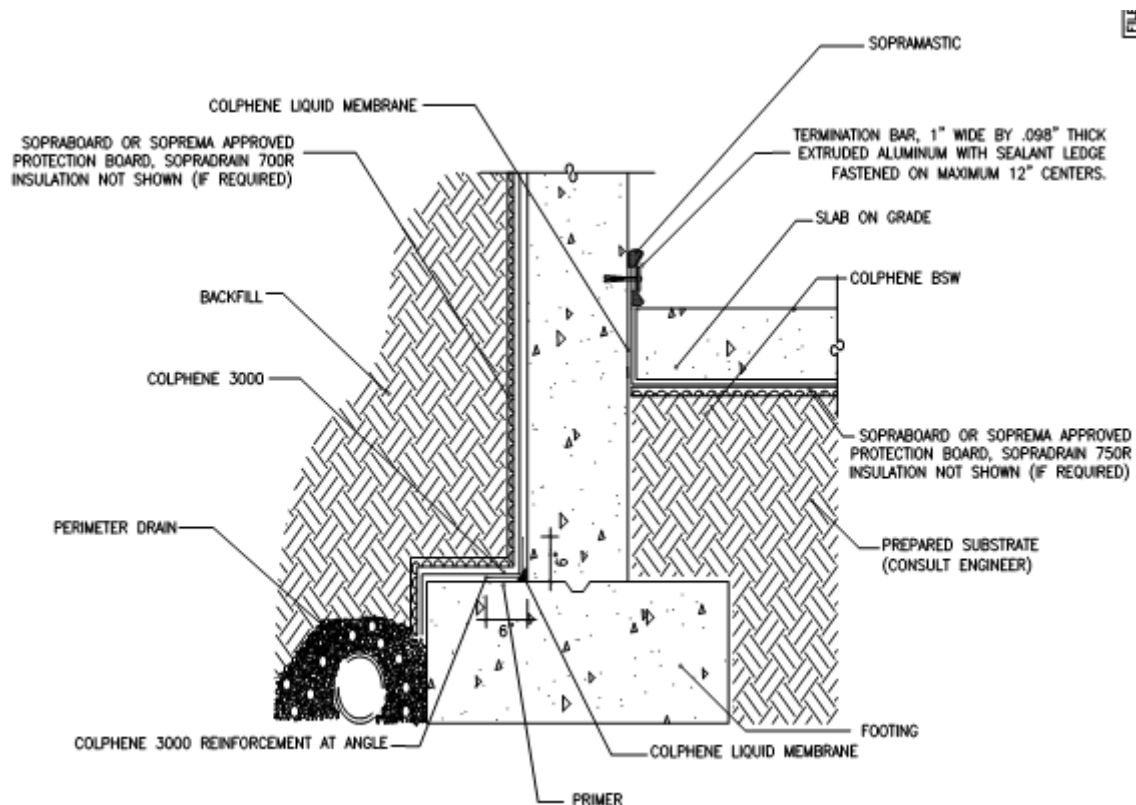
- Place and secure prefabricated drainage panels with the filter fabric facing away from vertical wall.

- Installation methods should be harmless to the waterproofing assembly.
- Lap edges and ends of geo-textile to maintain continuity.
- If required apply adhesive to adhere drainage layer ( a 3" spot every 36").
- On the top row of protection board apply a continuous bead of adhesive (1" wide) to the top leading edge of the panels to be adhered. (Protect the adhesive spots during initial cure by limiting the flow of moisture behind the board in case of rain).
- Backfill should commence immediately after installation of protection boards.

## Colphene 3000 Training and Application Guide (Cont.)

### Colphene 3000 Waterproofing Membrane.

#### **7. Foundation Wall With Drainage System**



#### A. Surface Preparation

- Substrate must be structurally sound.
- Substrate must be visibly dry and free of moisture (As a minimum, test for capillary moisture by plastic sheet method according to ASTM D-4263: further intensive testing may be required).
- Surface must be free of all voids, spalled areas, loose aggregate and sharp protrusions.
- Remove all contaminants (such as grease, oil and wax) from all exposed surfaces.
- Remove dust, dirt, loose stone and debris.
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Meet requirements detailed in ASTM D 5295 "Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems".
- Verify Concrete has cured and aged for minimum time period.
- Horizontal slabs should be sloped for positive drainage.
- Fill form tie rod holes with concrete and finish flush with surrounding surface.
- Repair substrate irregularities and imperfections.
- Ensure all concrete is smooth and free of voids.
- Grind irregular construction joints to suitable flush surface. Dissimilar materials must receive a reinforcing membrane.
- Petroleum based products/distillates are **not** to be used.

#### B. Surface Treatment

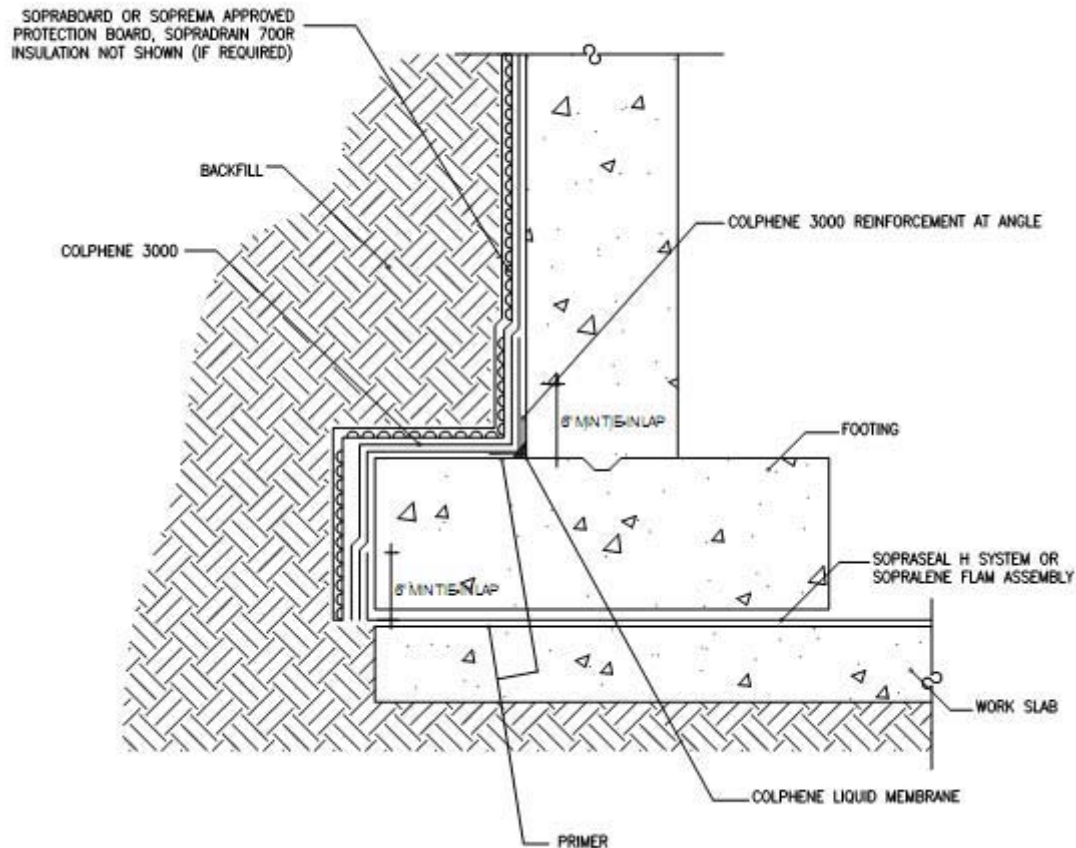
- Apply Elastocol 600c primer by spray or roller at the recommended coverage rate (see PDS for recommended coverage rate).
- Allow to dry per manufactures recommendations (drying time can vary from 30 minutes to 2 hours).
- Only apply primer to recommended, suitably prepared substrate, not the membrane.

#### C. Detailing

- The transition between the footing and the foundation wall (corner/angle change) will receive a bead of Colphene Liquid Membrane applied to extend 3" onto the vertical wall and 3" onto the horizontal deck.

- Install a 12" width of Colphene 3000 as a reinforcement membrane centered 6" up the wall and 6" onto the footer/ deck (wall to wall is to be centered 6" onto one wall and 6" onto the opposing wall).
- Install Colphene 3000 field with minimum 3" side laps and 6" end laps.
- Install Colphene 3000 field in maximum 8' lengths (longer lengths may be used with prior approval from Soprema).
- Roll in place using firm pressure with a hand roller.
- Ensure all laps are firmly and smoothly adhered.
- Ensure no wrinkles, voids, fishmouths are present.
- Colphene 3000 membrane will be terminated at or above grade by firmly seating and sealing the top edge of the sheet.
- Apply a bead of Sopramastic SM-1 at the top edge of the sheet.
- Place and secure prefabricated drainage panels with the filter fabric facing away from vertical wall.
- Installation methods should be harmless to the waterproofing assembly.
- Lap edges and ends of geo-textile to maintain continuity.
- If required apply adhesive to adhere drainage layer ( a 3" spot every 36").
- On the top row of protection board apply a continuous bead of adhesive ( 1" wide) to the top leading edge of the panels to be adhered. (Protect the adhesive spots during initial cure by limiting the flow of moisture behind the board in case of rain).
- Backfill should commence immediately after installation of protection boards.

## **8. Foundation Wall And Footing Below Grade**



#### A. Surface Preparation

- Substrate must be structurally sound.
- Substrate must be visibly dry and free of moisture (Test for capillary moisture by plastic sheet method according to ASTM D-4263).
- Surface must be free of voids, spalled areas, loose aggregate and sharp protrusions.
- Remove contaminates such as grease, oil and wax from exposed surfaces.
- Remove dust, dirt, loose stone and debris.
- Use repair materials and methods which are acceptable to Soprema's sheet membrane waterproofing.
- Meet requirements detailed in ASTM D 5295 "Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems".
- Verify Concrete has cured and aged for minimum time period.
- Horizontal slabs should be sloped for positive drainage.
- Fill form tie rod holes with concrete and finish flush with surrounding surface.
- Repair substrate irregularities and imperfections.
- Ensure all concrete is smooth and free of voids.



- Grind irregular construction joints to suitable flush surface. Dissimilar materials must receive a reinforcing membrane.
- Petroleum based products, distillates are **not** to be used.

## B. Surface Treatment

- Apply Elastocol 600c primer by spray or roller at the recommended coverage .
- Allow to dry per manufactures recommendations (drying time can be anywhere from 30 minutes to 2 hours).
- Only apply primer to recommended substrate, not the membrane.

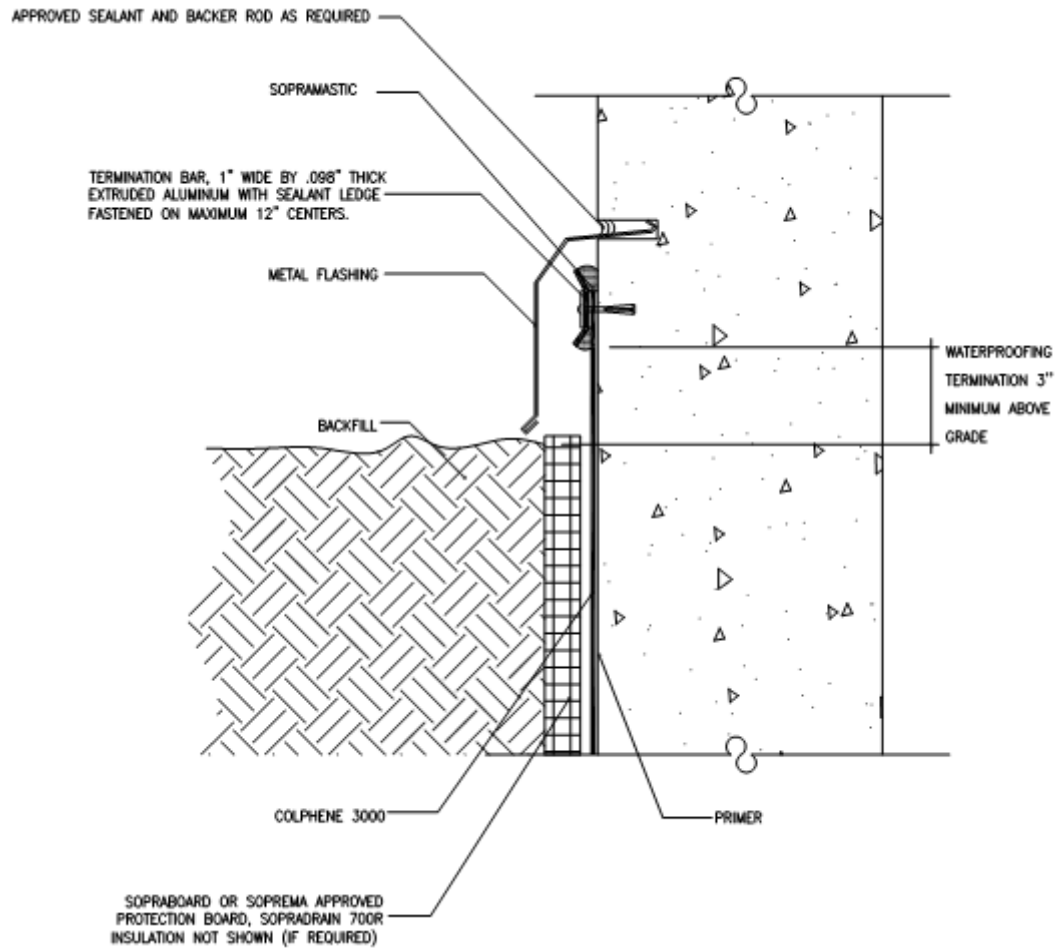
## C. Detailing

- The transition between the footing and the foundation wall (corner/angle change) will receive a bead of Colphene Liquid Membrane applied to extend 3" onto the vertical wall and 3" onto the horizontal deck.
- Install a 12" width of Colphene 3000 as a reinforcement membrane centered 6" up the wall and 6" onto the footer/ deck (wall to wall is to be centered 6" onto one wall and 6" onto the opposing wall).
- Install a second layer of Colphene 3000 extending a minimum of 6" past the Colphene 3000 corner reinforcement on the vertical wall and tying in a minimum of 6" to the existing Colphene H system or Sopralene Flam assembly.
- Install Colphene 3000 field with minimum 3" side laps and 6" end laps.
- Install Colphene 3000 field in maximum 8' lengths.
- Roll in place using firm pressure with a hand roller.
- Ensure all laps are firmly and smoothly adhered.
- Ensure no wrinkles, voids, fishmouths are present.
- Colphene 3000 membrane will be terminated at or above grade by firmly seating and sealing the top edge of the sheet.
- Apply a bead of Sopramastic SM-1 at the top edge of the sheet.
- Place and secure prefabricated drainage panels with the filter fabric facing away from vertical wall.
- Installation methods should be harmless to the waterproofing assembly.
- Lap edges and ends of geo-textile to maintain continuity.
- If required apply adhesive to adhere drainage layer ( a 3" spot every 36").
- On the top row of protection board, in addition to the adhesive used to secure it to the membrane, apply a continuous bead of adhesive (1" wide) to the top leading edge of

the panels to be adhered. (Protect the adhesive spots during initial cure by limiting the flow of moisture behind the board in case of rain).

- Backfill should commence immediately after installation of protection boards.

## 9. Waterproofing Membrane Termination At Grade



### Detailing

- Colphene 3000 membrane will be terminated at or above grade by firmly seating and sealing the top edge of the sheet.
- Apply a bead of Sopramastic SM-1 at the top edge of the sheet.
- Install extruded aluminum termination bar using Soprema approved fasteners on not less than 12" centers.
- Add additional fasteners as conditions (and assembly) require to achieve uniform compression of the membrane to the substrate.
- Sopramastic SM-1 will be applied in the sealant ledge of the termination bar.



# COLPHENE 3000

SELF-ADHESIVE WATERPROOFING MEMBRANE

Order No. D10210\*

\* Boxed Summer Grade listed, contact Customer Service for unboxed Summer Grade and boxed or unboxed Winter Grade.

## DESCRIPTION

COLPHENE 3000 is a self-adhesive waterproofing membrane composed of SBS modified bitumen and a polyethylene woven composite facer. A silicone release film protects the self-adhesive underside.

COLPHENE 3000 is available in "summer grade" for applications at temperatures above fifty degrees (50° F) Fahrenheit (10° C) and "winter grade" for applications at temperatures between twenty-five degrees (25° F) Fahrenheit (-3.9° C) and fifty degrees (50° F) Fahrenheit (10° C).

## BASIC USE & APPLICATION

Refer to COLPHENE 3000 Guide Specification & Approved Details for specific application information.

COLPHENE 3000 is specially designed for vertical and horizontal waterproofing of foundation walls, tunnels, plaza decks, parking decks and split slab construction.

Starting at the low point, install COLPHENE 3000 to the primed substrate by peeling back the release film on the underside. Subsequent rolls shall be installed in the same manner and should be aligned with the preceding roll to maintain continuity. Use an approved roller and apply hand pressure over the entire surface to ensure solid adhesion to the substrate. The uppermost edge of the membrane shall be mechanically fastened to the substrate using approved fasteners and termination bars (vertical application only). All small protrusions (steel work, etc.) through the waterproofing membrane must be sealed with Sopramastic or Alsan Flashing. Contact SOPREMA Technical Department for specific application guidelines.

## FEATURES & BENEFITS

- Tremendous resistance to hydrostatic pressure
- Excellent adhesion to most substrates
- UV resistant up to 30 days (Exposure should not exceed 30 days)
- Fully adhered, watertight laps
- Superior tensile strength, puncture resistance and dimensional stability
- Cold applied, no flames or kettles
- Easy to install

## LIMITATIONS

- COLPHENE 3000 should not be stored exposed to the elements. Rolls are stored upright on pallets.
- DO NOT install during inclement weather



# COLPHENE 3000

## PAGE 2

PDS-336  
Rev 04/11

### COMPOSITION & PACKAGING

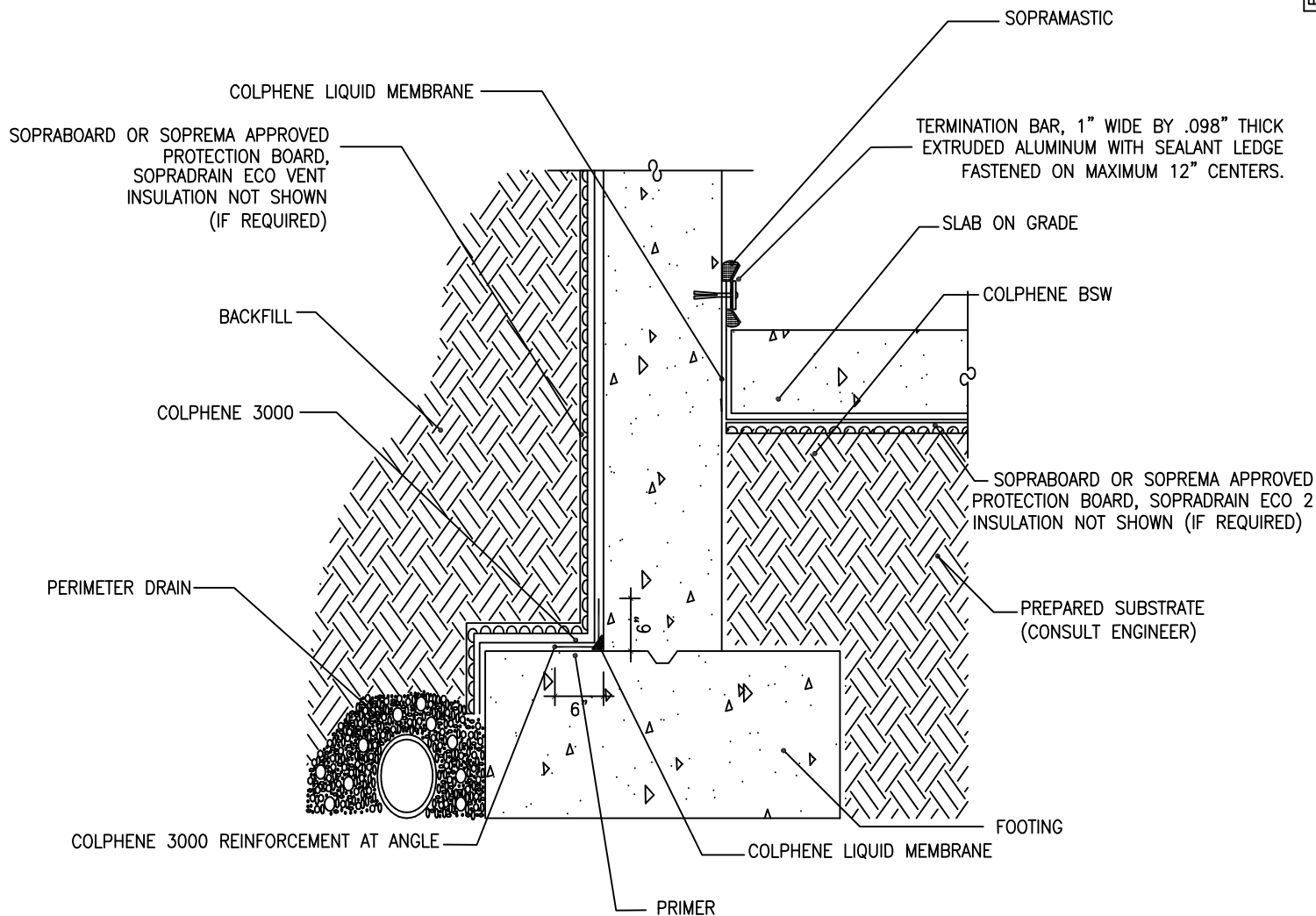
| Product/<br>Property               | COLPHENE 3000  |
|------------------------------------|--|
| Reinforcement                      | none   |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | tri-laminate woven polyethylene                          |
| Underside                          | self-adhesive with release film                          |
| Approximate Nominal Thickness      | 60 mils (1.5 mm)   |
| Approximate Roll Coverage          | 201 ft <sup>2</sup> (18.7 m <sup>2</sup> )               |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 61 ft (18.6 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 64 lbs (29 kg)   |
| Rolls per Pallet*                  | 25 boxed   |
| * Rolls stocked upright on pallets |  |

### PHYSICAL PROPERTIES

| PROPERTIES   | TEST METHOD | TYPICAL VALUE             |
|--|-------------|---------------------------|
| Tensile strength, membrane   | ASTM D412   | 1624 lbf/in <sup>2</sup>  |
| Tensile strength, film   | ASTM D882   | 19500 lbf/in <sup>2</sup> |
| Elongation of rubberized asphalt   | ASTM D412   | >1000%                    |
| Low temperature flexibility  | ASTM D1970  | Unaffected at -31 °C      |
| Puncture resistance, membrane  | ASTM E154   | 168 lbs                   |
| Peel resistance  | ASTM D903   | 20 lbf/in                 |
| Resistance to hydrostatic head   | ASTM D751   | 231 ft of water           |
| Crack cycling at -32 °C, 100 cycles                                      | ASTM C836   | Unaffected                |
| Lap peel adhesion  | ASTM D1876  | 11.4 lbf/in               |
| Water vapor permeance  | ASTM E96    | 0.0086 perms              |
| Water absorption   | ASTM D570   | 0.1% maximum              |
| (All values are nominal. Test results from SOPREMA manufacturing plant.) |             |                           |

### WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



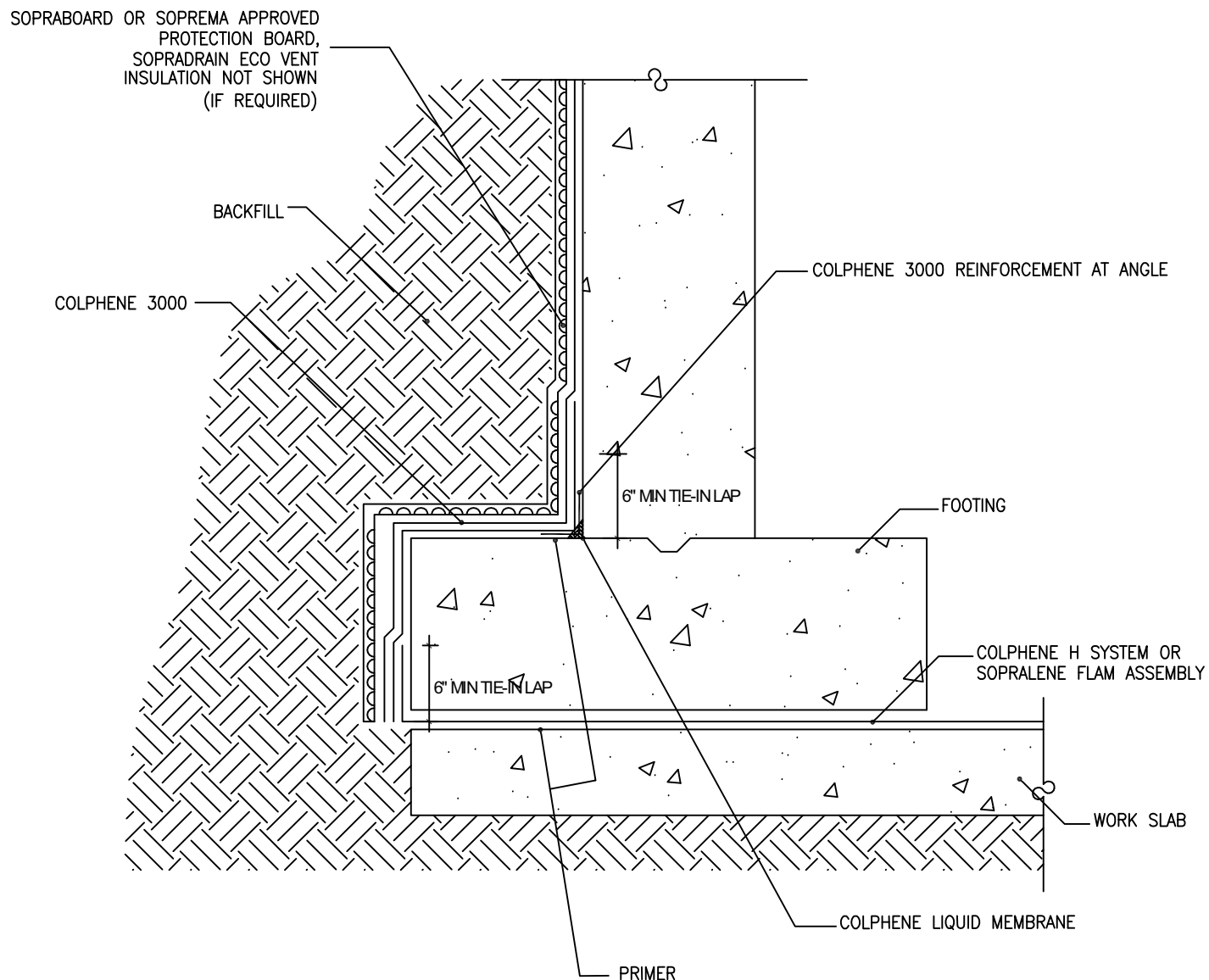
NOTES:

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.




310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

| TITLE                                |     |     |               |
|--------------------------------------|-----|-----|---------------|
| FOUNDATION WALL WITH DRAINAGE SYSTEM |     |     |               |
| SCALE                                | DWN | CHK | APPROVAL DATE |
| NONE                                 | TM  | JP  | 12/29/09      |
| DRAWING NUMBER                       |     |     | REV           |
| BGW-1                                |     |     | 0             |



NOTES:

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

|   |           |                       |                           |
|---|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|   |           | WADSWORTH, OHIO 44281 |                           |
|   |           | (330) 334-0066        |                           |
| TITLE<br>FOUNDATION WALL & FOOTING BELOW GRADE  |           |                       |                           |
| SCALE<br>NONE   | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>01/04/10 |
| DRAWING NUMBER<br>BGW-2   |           |                       | REV<br>0                  |

APPROVED SEALANT AND BACKER ROD AS REQUIRED

SOPRAMASTIC

TERMINATION BAR, 1" WIDE BY .098" THICK  
EXTRUDED ALUMINUM WITH SEALANT LEDGE  
FASTENED ON MAXIMUM 12" CENTERS.

METAL FLASHING

BACKFILL

WATERPROOFING  
TERMINATION 3"  
MINIMUM ABOVE  
GRADE

COLPHENE 3000

PRIMER

SOPRABOARD OR SOPREMA APPROVED  
PROTECTION BOARD,  
SOPRADRAIN ECO VENT  
INSULATION NOT SHOWN  
(IF REQUIRED)

#### NOTES:

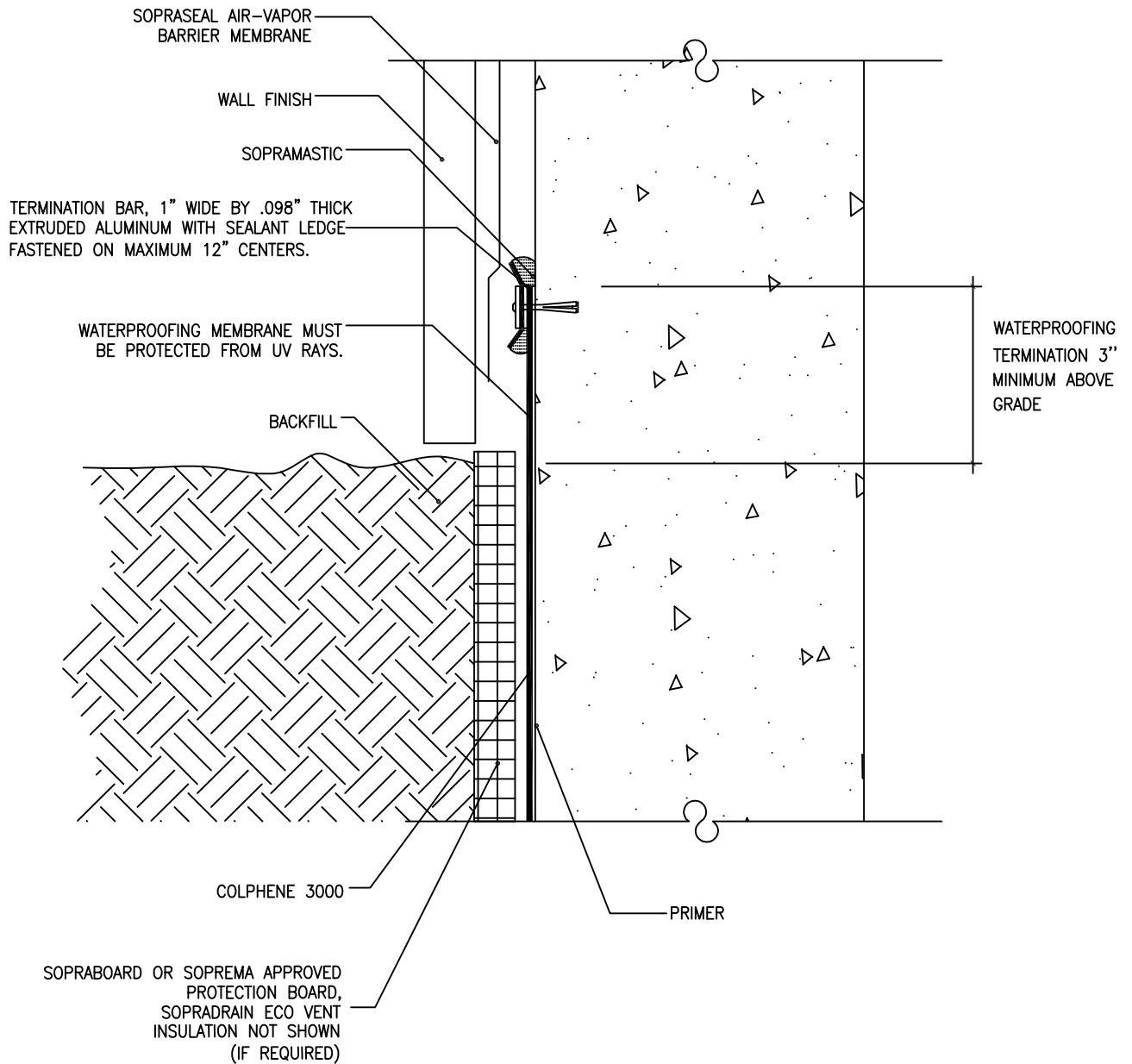
1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066


|  |      |           |           |                           |
|--|------|-----------|-----------|---------------------------|
| TITLE<br>WP MEMBRANE TERMINATION GRADE |      |           |           |                           |
| SCALE                                  | NONE | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>12/29/09 |
| DRAWING NUMBER<br>BGW-3                |      |           |           | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

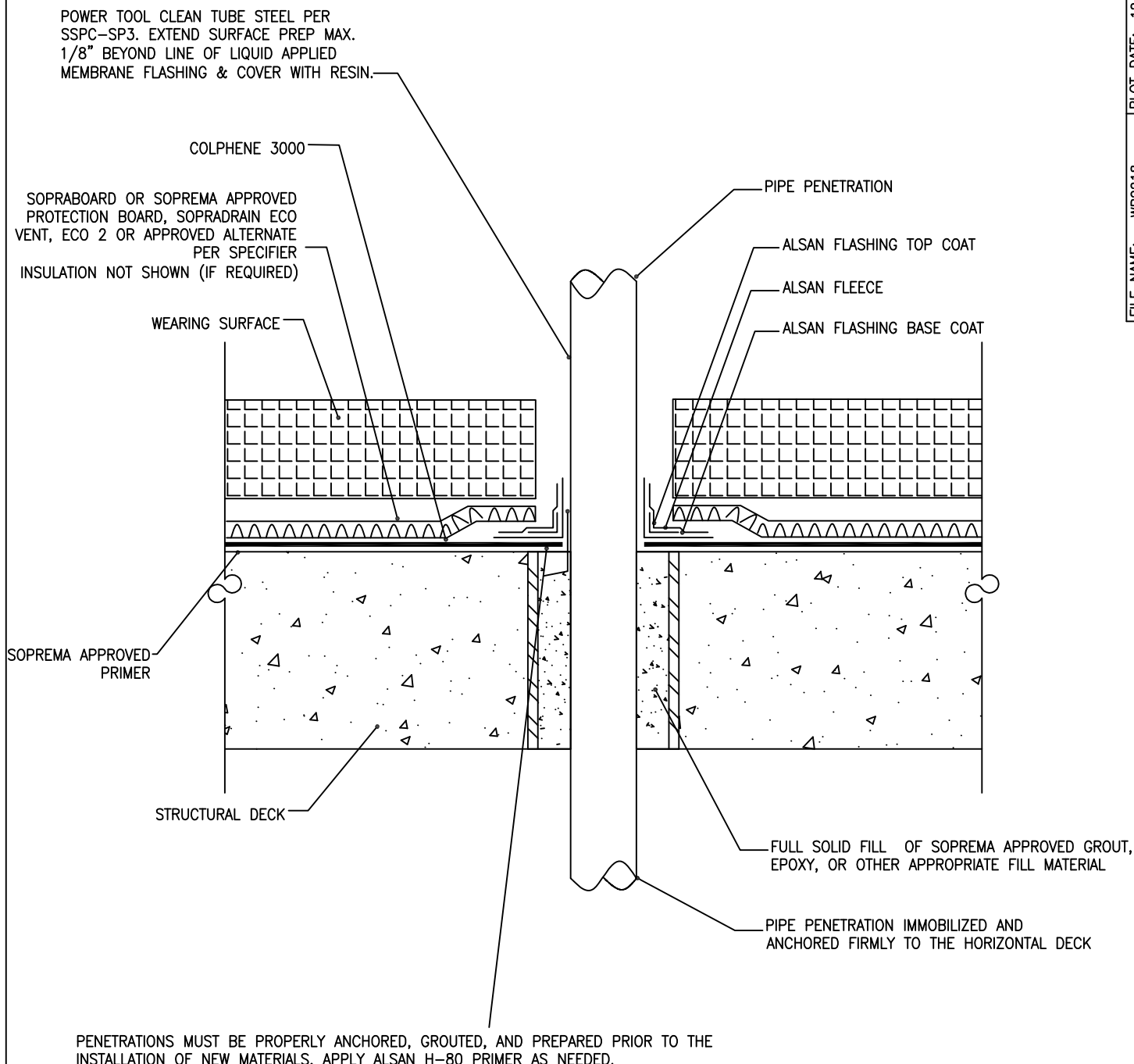


NOTES:

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.


|   |     |                       |               |
|---|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|   |     | WADSWORTH, OHIO 44281 |               |
|   |     | (330) 334-0066        |               |
| TITLE   |     |                       |               |
| FOUNDATION WALL/EXTERIOR WALL CLADDING TIE-IN   |     |                       |               |
| SCALE   | DWN | CHK                   | APPROVAL DATE |
| NONE  | TM  | JP                    | 12/14/09      |
| DRAWING NUMBER  |     |                       | REV           |
| BGW-4   |     |                       | 0             |

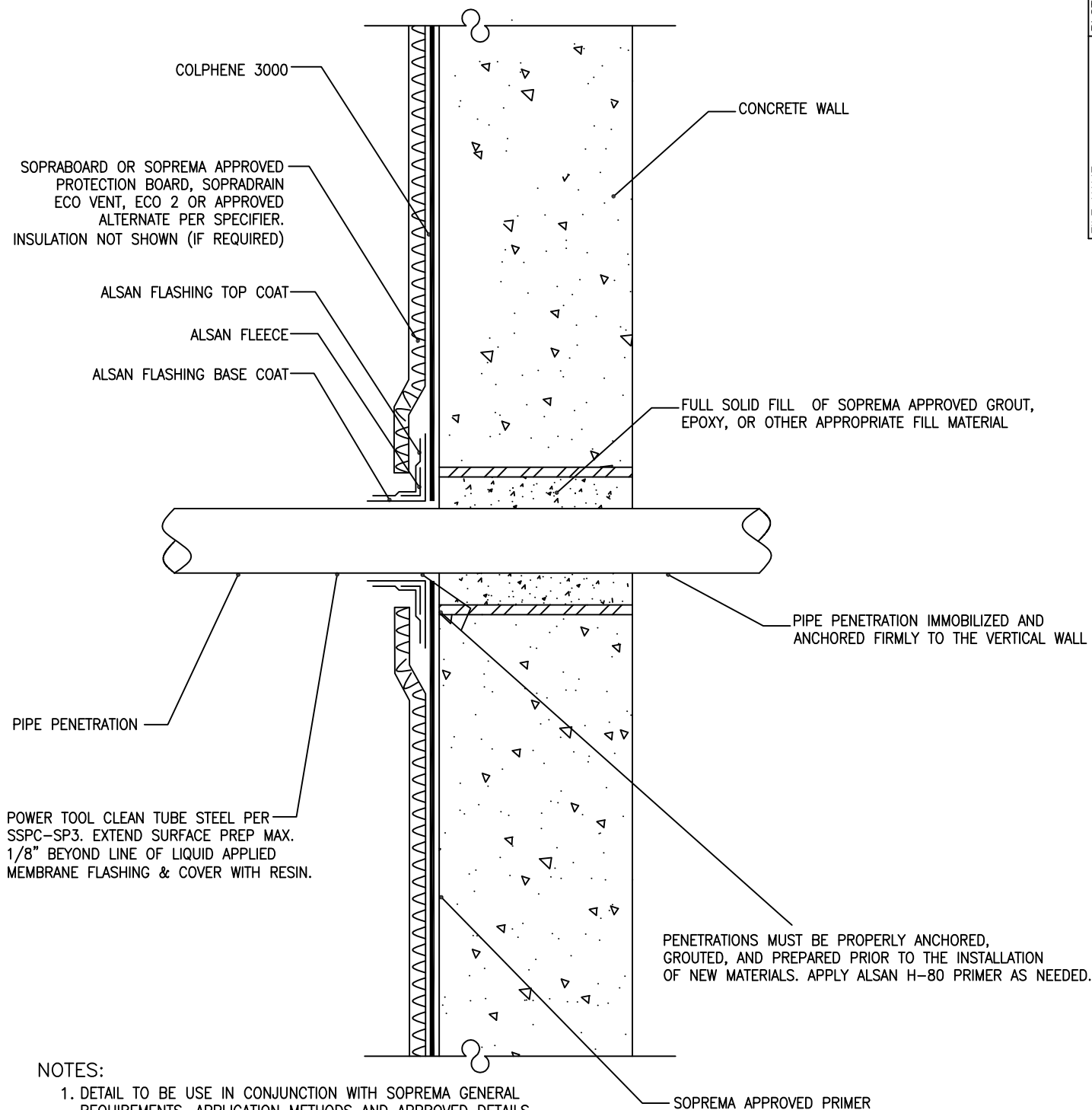




#### NOTES:


1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. ALSAN FLASHING (FLEECE) TO EXTEND MINIMUM 4" ONTO DECK AND 4" VERTICALLY ONTO PENETRATION
3. A SECOND LAYER OF MEMBRANE MAY BE INSTALLED USING THE SAME INSTALLATION METHOD SHOWN ABOVE. 2ND LAYER SIDE LAP TO BE OFFSET 18" FROM THE BOTTOM LAYER.
4. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.

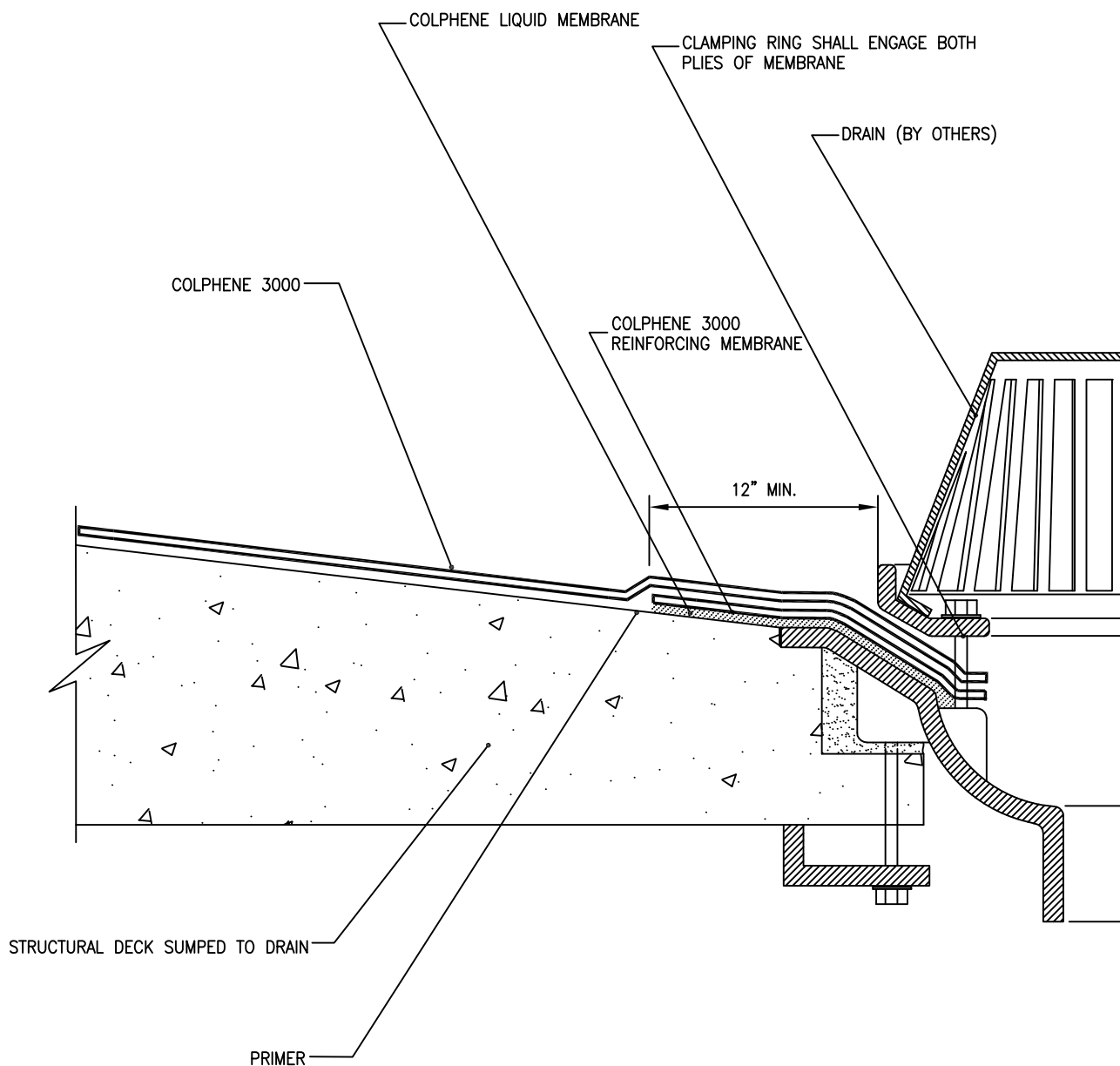
|   |     |                       |               |
|---|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|   |     | WADSWORTH, OHIO 44281 |               |
|   |     | (330) 334-0066        |               |
| TITLE PIPE PENETRATION FLASHING   |     |                       |               |
| SCALE   | DWN | CHK                   | APPROVAL DATE |
| NONE  | TM  | JP                    | 12/11/09      |
| DRAWING NUMBER  |     |                       | REV           |
| BGW-5   |     |                       | 0             |



#### NOTES:


1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. ALSAN FLASHING (FLEECE) TO EXTEND MINIMUM 4" ONTO DECK AND 4" VERTICALLY ONTO PENETRATION
3. A SECOND LAYER OF MEMBRANE MAY BE INSTALLED USING THE SAME INSTALLATION METHOD SHOWN ABOVE. 2ND LAYER SIDE LAP TO BE OFFSET 18" FROM THE BOTTOM LAYER.
4. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.

|   |     |  |               |
|---|-----|--|---------------|
|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|   |     |  |               |
| TITLE   |     |  |               |
| VERTICAL PIPE PENETRATION FLASHING  |     |  |               |
| SCALE   | DWN | CHK  | APPROVAL DATE |
| NONE  | TM  | JP   | 06/14/10      |
| DRAWING NUMBER  |     |  | REV           |
| BGW-5b  |     |  | 0             |

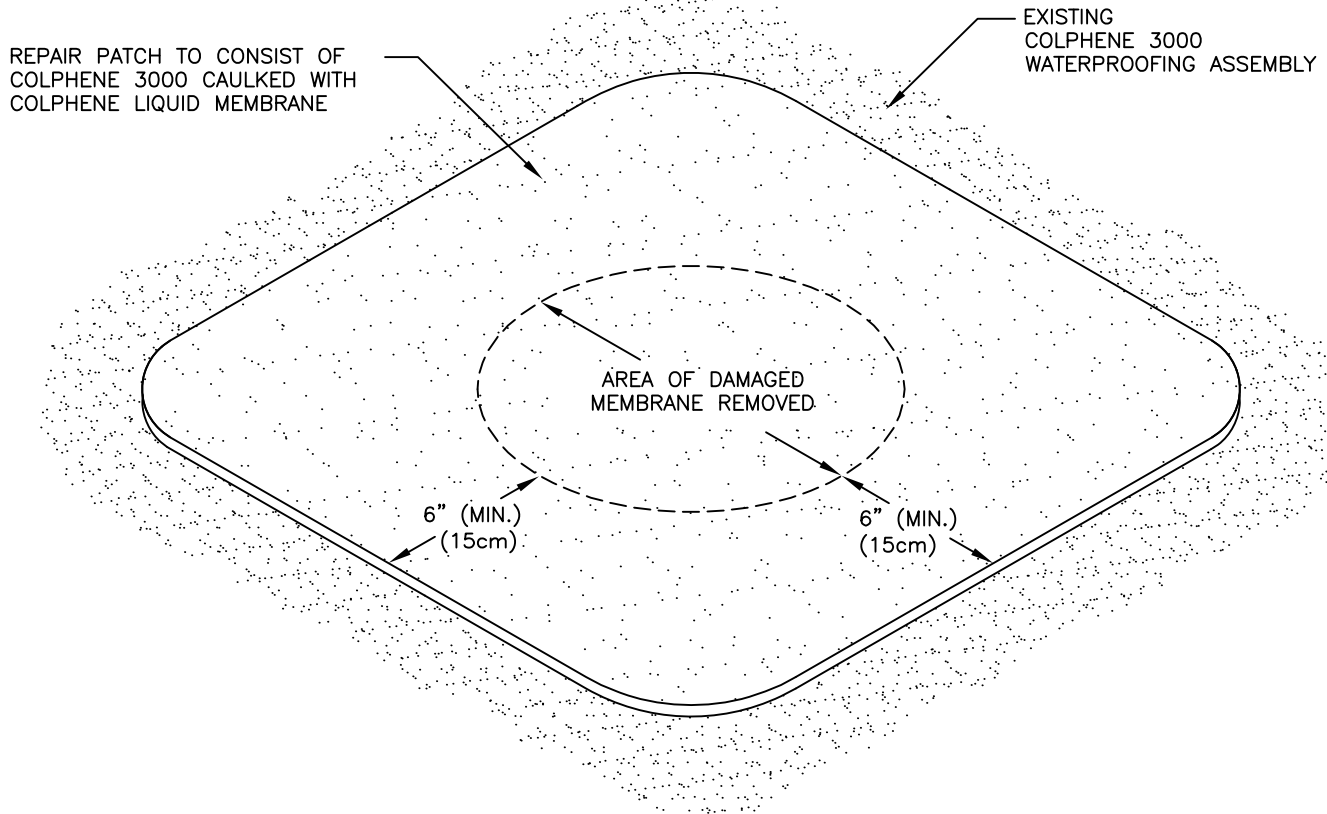


NOTES:

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. CONCRETE DECK MUST BE PRIMED WITH ELASTOCOL 600-C OR OTHER APPROVED PRIMER PRIOR TO THE INSTALLTION OF COLPHENE 3000 MEMBRANE.
3. BOTH PLIES OF COLPHENE 3000 MEMBRANE SHALL EXTEND DOWN INTO THE DRAIN BOWL AND ENGAGE THE CLAMPING RING. REINFORCING MEMBRANE PLY SHALL BE IMBEDDED IN COLPHENE LIQUID MEMBRANE AND SHALL EXTEND OUT ONTO THE DECK A MINIMUM OF 12" ON ALL SIDES.


|  |      |  |           |                           |
|--|------|--|-----------|---------------------------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |                           |
|  |      | TITLE<br>DRAIN FLASHING (TYP.)                               |           |                           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP | APPROVAL DATE<br>12/11/09 |
| DRAWING NUMBER<br>BGW-6  |      |  | REV<br>0  |                           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

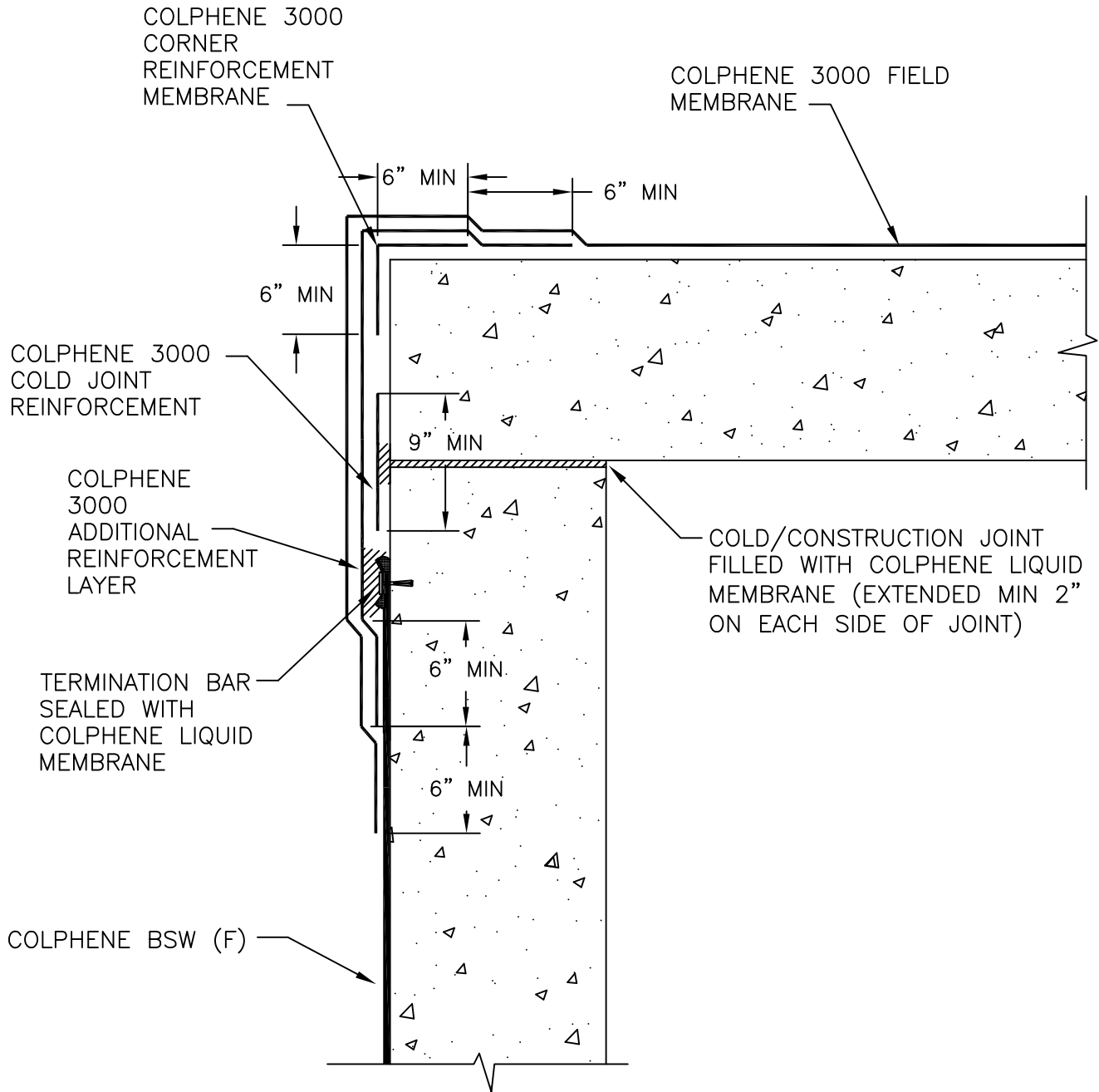


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.


|  |      |                       |           |
|--|------|-----------------------|-----------|
|  |      | 310 QUADRAL DRIVE     |           |
|  |      | WADSWORTH, OHIO 44281 |           |
|  |      | (330) 334-0066        |           |
| TITLE COLPHENE 3000 REPAIR PATCH   |      |                       |           |
| SCALE  | NONE | DWN<br>TM             | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |           |
| BGW-07   |      | 12/23/10              |           |
|  |      |                       | REV<br>0  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. SUBSTRATE MUST BE PROPERLY PREPARED AND PRIMED PRIOR TO THE INSTALLATION OF COLPHENE 3000.
3. COLD JOINTS SHOULD BE PROPERLY GROUTED.
4. THIS DETAIL IS A BASIS OF DESIGN, JOB SPECIFIC DETAILS MAY BE REQUIRED PRIOR TO THE START OF CONSTRUCTION.
5. TERMINATION BAR ON COLPHENE BSW (F) INSTALLED AT COMPLETION OF THE VERTICAL WALL POUR.

|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>COLPHENE 3000 TIE-IN TO COLPHENE BSW (F)            |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>04/11/11                                    |           |
| BGW-8  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.





# ELASTOCOL 600c

ELASTOCOL 600c (09)

Order No. D38745\*

\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Elastocol 600c SA Primer is a blend of natural resins, solvent/synthetic rubber and is used on horizontal and vertical properly prepared, clean and dry concrete, metal or wood substrates prior to self-adhered field and flashing base membrane plies being installed. It is also used in priming either a high brush sanded SBS inner ply or base ply flashing prior to the self-adhesive flashing cap membrane ply being installed. The substrate must be clean, dry, and free of dust, grease or other contaminants Elastocol 600c is available in a "spray" container, Order No. D216.

See published Specifications and Approved Details.

During hot periods of the year, the self-adhesive base or inner ply and cap sheet are rolled out onto the dry substrate, set and re-rolled (scroll method). Then Elastocol 600c or other approved self-adhered primer are applied to the horizontal surface. After drying, the release film of the scrolled layer of self-adhesive membrane is removed and the membrane is matted onto the primed substrate with these steps being repeated for each succeeding layer.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL 600c  |
|----------------------|---|
| Description          | elastomeric bitumen based primer  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L)   |
| Application          | 100 - 150 ft <sup>2</sup> /gal (0.4 - 0.6 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# ELASTOCOL STICK WB PRIMER

ELASTOCOL STICK WB PRIMER (09C)

Order No. A215

\*Contact Customer Service or your Sales Representative for Order Number and availability.

## DESCRIPTION & LIMITATIONS

Elastocol Stick WB Primer is a polymer emulsion-based primer designed to improve the adhesion of self-adhesive waterproofing membranes on horizontal and vertical properly prepared, clean and dry masonry, wood, acceptable gypsum or concrete substrates prior to installation of self-adhered field and flashing base membrane plies being installed. Elastocol Stick WB Primer may be used in priming either an SBS base or inner ply prior to the flashing cap membrane being installed. Elastocol Stick WB Primer may be brush, roller, or spray applied. Spraying equipment recommendations are a tip size between 0.020 and 0.025 inch with a continuous pressure setting of 1,300 psi. Elastocol Stick WB Primer does not contain VOC's.

Elastocol Stick WB Primer Limitations:

- The cap membrane must be installed the same day as the base membrane.
- This product is not suitable for plastic surfaces such as vinyl (including PVC pipe) or water repellent treated panels.
- Avoid freezing, store Elastocol Stick WB Primer above 40° F (4.4° C). Apply under clean, dry, debris-free conditions.
- Application temperature range is 45° to 104° F (7.2° to 40° C).
- Dry time ranges from 30 minutes to 2 hours.
- May not be used to prime Soprapboard.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL STICK WB PRIMER  |
|----------------------|--|
| Description          | polymer emulsion   |
| Installation         | brush, roller, or spray  |
| Packaging            | 5 gallon (18.9 L)  |
| Application          | Up to 500 ft <sup>2</sup> /gal (0.08 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## APPLICATION

The Elastocol Stick WB Primer is ready to receive a self-adhered membrane when it has dried to a tacky texture and is no longer in a liquid state. A common test for the readiness of the primer is to simply touch/push it with a clean dry finger or knuckle. If liquid primer is exposed, or strings when the finger is removed, it is not ready for mating.

During hot periods of the year, the self-adhesive base or inner ply and cap sheet are rolled out onto the dry substrate, set and re-rolled (scroll method). Then Elastocol Stick WB Primer or other approved self-adhered primer are applied to the horizontal surface. After drying, the release film of the scrolled layer of self-adhesive membrane is removed and the membrane is matted onto the primed substrate with these steps being repeated for each succeeding layer. See published Specifications and Approved Details.

When Elastocol Stick WB Primer is used over a sand surfaced base or ply sheet, or on a vertical surface, additional dry time is recommended. Allow ten to fifteen extra minutes of dry time after the primer has passed the dryness test described above.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2008 Certified.



# SOPRABOARD

SOPRABOARD (82)

Order No. \*

\* See chart on Page 2 or contact your Customer Service or Sales Representative

## DESCRIPTION

SOPRABOARD is designed for use with Soprema's SBS modified bitumen membrane roof assemblies. Additionally, SOPRABOARD can be used as a protection board in Soprema's waterproofing systems and assemblies. The R-Values for one-eighth (1/8") inch thick (3.2 mm) and (1/4") inch thick (6.4 mm) Sopraboard are 0.11 and 0.17 respectively. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

SOPRABOARD is secured to an acceptable substrate by mechanical fastening, hot asphalt or approved cold adhesive. SOPRABOARD is an acceptable replacement for cover boards over most insulation substrates. The roof membranes are either hot mopped, heat welded, self-adhered or bonded to the SOPRABOARD using Approved cold adhesives. REMOVE PLASTIC FILM SEPARATOR FOR ALL ASSEMBLIES.

## COMPOSITION

SOPRABOARD is a multi-ply, semi-rigid asphaltic roofing substrate board composed of a mineral fortified asphaltic core formed between two asphaltic saturated fiberglass liners. Sopraboard must be stored flat -- NO DOUBLE-STACKING OF PALLETS.

## SURFACE PREPARATION

Apply to approved, clean and dry substrate following SOPREMA Approved Requirements, Approved Details and acceptable roofing practices. Not designed for permanent exposure. Ensure deck is suitable for installation of specified roof assembly. On recover projects, remove gravel, dirt, prime surface and bond SOPRABOARD using approx. 60 lbs (27 kg) per 100 ft<sup>2</sup> (9.29 m<sup>2</sup>) hot asphalt or approved coverage rate using insulation adhesive. When SOPRABOARD is mechanically fastened, the existing substrate does not need priming.

Soprema Approved SA Primer is applied to the top surface of SOPRABOARD when a self-adhered base ply is used. Install self-adhesive membrane ONLY when rolls have been stored in 70° F. (21° C.) conditions and ambient temperature is 50° F. (10° C.) and rising. During cool, cloudy, windy periods (less than 70° F [21° C]) with high humidity (early morning or late afternoon especially) use external heating of the Sopraboard with slight heat on the self-adhesive membrane roll to activate the self-adhesive so as to ensure full adhesion to the board. Install Sopraboard using good roofing practices which include warming Sopraboard during cold weather application to allow Sopraboard to lay flat.



## SOPRABOARD PHYSICAL PROPERTIES

| Board Thickness<br>inch (mm) | Compressive strength @<br>15% ASTM<br>D 545 psi | Tensile strength<br>ASTM<br>D 412 psi | Water absorption,<br>2h % max.<br>ASTM C 209 | Moisture content<br>ASTM<br>D 644 | Flexibility<br>(2" mandrel)<br>ASTM D 644 | Peel strength       |
|------------------------------|---|---------------------------------------|--|-----------------------------------|---|---------------------|
| 1/8" (3.2)*                  | 630   | 1050                                  | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 3/16" (4.7)                  | 470   | 700                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 1/4" (6.4)**                 | 440   | 450                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |

\* Meets ASTM D 6506, Class B, Type 2

\*\* Meets ASTM D 6506, Class B, Type 3

\*\*\* Depending upon primer and substrate used.

## APPROVALS

See Underwriters Laboratories, Inc. File No. R11436, FMG Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is 9001:2008 Certified. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

## WARRANTY

SOPREMA offers several warranty options dependent upon membrane combinations, system assembly, and environmental conditions. Contact your local SOPREMA representative for project warranty offerings.

## PACKAGING\*

| SOPRABOARD            |                |                           |               |           |
|-----------------------|----------------|---------------------------|---------------|-----------|
| SIZES                 | THICKNESS      | WEIGHTS**                 | SHEETS/PALLET | ORDER NO. |
| 4' X 4' (1.2 X 1.2 m) | 1/8" (3.2 mm)  | 14.4 lbs / sheet (6.5 kg) | 100           | D 08412   |
| 4' X 4' (1.2 X 1.2 m) | 3/16" (4.7 mm) | 21 lbs / sheet (9.5 kg)   | 55            | D 08414   |
| 4' X 4' (1.2 X 1.2 m) | 1/4" (6.4 mm)  | 27 lbs / sheet (12 kg)    | 60            | D 08416   |
| 4' X 5' (1.2 X 1.5 m) | 1/8" (3.2 mm)  | 18 lbs / sheet (8 kg)     | 100           | D 08410   |
| 4' X 5' (1.2 X 1.5 m) | 3/16" (4.7 mm) | 27 lbs / sheet (12 kg)    | 60            | D 08425   |
| 4' X 5' (1.2 X 1.5 m) | 1/4" (6.4 mm)  | 33 lbs / sheet (15 kg)    | 60            | D 08411   |
| 4' X 8' (1.2 X 2.5 m) | 1/8" (3.2 mm)  | 29 lbs / sheet (13 kg)    | 100           | D 08415   |
| 4' X 8' (1.2 X 2.5 m) | 3/16" (3.2 mm) | 43.5 lbs / sheet (20 kg)  | 55            | D 08413   |
| 4' X 8' (1.2 X 2.5 m) | 1/4" (3.2 mm)  | 55 lbs / sheet (25 kg)    | 40            | D 08423   |

\* DO NOT DOUBLE STACK PALLETS

\*\* Approximate Sheet Weight - All values are nominal per manufacturing tolerances.

\*\*\* Contact Customer Service or your Sales Representative



# COLPHENE LIQUID MEMBRANE

LIQUID-APPLIED DETAILING COMPOUND

Order No. \*

\*Contact Customer Service for Order Number and Availability.

## DESCRIPTION

COLPHENE LIQUID MEMBRANE is a two component, elastomeric, solvent free, cold applied material used in conjunction with a variety of Soprema waterproofing membranes.

## BASIC USE & APPLICATION

COLPHENE LIQUID MEMBRANE is an accessory product. Please refer to SOPREMA Guide Specifications & approved Details for specific application information.

**For use with COLPHENE 60 & COLPHENE 3000:**

COLPHENE LIQUID MEMBRANE is designed to be used as a fillet and/or reinforcement under Colphene 60/3000 membranes at inside and outside corners, penetrations/projections and membrane terminations.

**For use with COLPHENE BSW (F):**

COLPHENE LIQUID MEMBRANE is designed to be used as a membrane adhesive to seal end-laps and/or reinforcement at penetrations/projections and membrane terminations.

All work surfaces should be clean, dry, free of dirt, dust, debris, oils and other contaminants that may result in surfacing that is unsound.

- Keep temperature of cartridges between 65 and 85° F (18 - 29° C) twenty-four hours prior to use. Do not store in direct sunlight or high temperatures exceeding 90° F (32° C).
- Using a utility knife, remove the molded tips at the groove from the mixing head.
- Place the cartridge in to the appropriate applicator (label side up).
- Apply Colphene Liquid Membrane as recommended by Soprema. In order to avoid an initial inconsistent mix, the first small amount (approximately 12") of material from each cartridge should be discarded. NOTE: When sealing endlaps of Colphene BSW (F), apply liquid membrane and spread using approved hand trowel per Soprema recommendations.
- Once the approved sheet membrane is installed, immediately roll to ensure positive contact between Colphene Liquid Membrane and the sheet membrane.
- Partial cartridges can be applied at a later date by simply plugging the cartridges with the provided half moon plugs and using a new mixing tip.

## PACKAGING & COVERAGE



- Colphene Liquid Membrane is packaged in four (4) 1.5 L cartridges per case.
- Each cartridge will produce in a range of 50-75 linear feet of 3/4" - 1" wide beads.
- Coverage rates may vary when used over irregular surfaces.
- NOTE: Colphene BSW (F) endlaps are six inches (6") long and thirty-six inches (36") wide. Apply two (2) beads across the width (36") of the roll and spread using an approved hand trowel or putty knife.





# MATERIAL SAFETY DATA SHEET

## COLPHENE LIQUID MEMBRANE

| HMIS  | PROTECTIVE CLOTHING   | TRANSPORT OF DANGEROUS GOODS |
|---|---|------------------------------|
| <div style="border: 1px solid black; padding: 5px;"> <div style="background-color: blue; color: white; padding: 2px; text-align: center;"><b>2</b> HEALTH</div> <div style="background-color: red; color: white; padding: 2px; text-align: center;"><b>1</b> FLAMMABILITY</div> <div style="background-color: orange; color: white; padding: 2px; text-align: center;"><b>1</b> REACTIVITY</div> <div style="background-color: white; color: black; padding: 2px; text-align: center;"><b>B</b> PROTECTIVE EQUIPMENT</div> </div> |   | <b>NOT REGULATED</b>         |

### SECTION II. CHEMICAL PRODUCT AND COMPANY INFORMATION

|  |  |
|--|--|
| <b>Product name:</b><br><b>Use:</b><br><br><b>Manufacturer:</b><br><br><b>Distributor:</b><br><br><b>In case of emergency:</b> | Colphene Liquid Membrane<br>Lap and flashing adhesive<br><br>Soprema, Inc.<br>310 Quadral Drive<br>Wadsworth, Ohio 44281<br>UNITED STATES<br><br>Soprema, Inc.<br>310 Quadral Drive<br>Wadsworth, Ohio 44281<br>UNITED STATES<br><br>SOPREMA (8:00am to 5:00pm - Eastern time): (800) 356-3521<br>CHEMTREC (USA) (24h.): (800) 424-9300<br>CANUTEC (Canada): (613) 996-6666<br>International: (703) 527-3887 |
|--|--|

### EMERGENCY OVERVIEW!!!

**This product is harmful by inhalation, when in contact with the skin and if it is swallowed. This product may cause sensitization by inhalation and skin contact. Repeated inhalation of vapors may cause an allergic respiratory response, the onset of which may be delayed several hours after exposure. Avoid contamination. Water reacts with product liberating CO2 gas.**

**SECTION II. COMPOSITION AND INFORMATION ON DANGEROUS INGREDIENTS**

| Component   | CAS#          | % by weight |
|---|---------------|-------------|
| Polyurethene polymer                                | Not available | 40-60       |
| Methylene bisphenol isocyanate (MDI)                | 101-68-8      | 15-40       |
| Diisodecyl phthalate (mixed isomers)                | 68515-49-1    | 10-30       |
| 1,1'-Methylenebis (isocyanato-) benzene             | 26447-40-5    | 5-10        |
| Benzene, 1,1'-methylenebis[isocyanato-, homopolymer | 39310-05-9    | 1-5         |
| Dimethyl silicone polymer with silica               | 67762-90-7    | 1-5         |

**Component Information/Information on Non-Hazardous Components**

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

This material is a controlled product under Canadian WHMIS regulations.

**SECTION III. POTENTIAL HEALTH EFFECTS****Potential Health Effects: Eyes**

This product is irritating to the eyes. Symptoms include itching, burning, redness and tearing.

**Potential Health Effects: Skin**

This product is irritating to the skin. This product may cause an allergic skin reaction.

**Potential Health Effects: Ingestion**

Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Potential Health Effects: Inhalation**

Allergic lung reaction such as asthma, which includes coughing, wheezing, chest pain and tightness, difficulty breathing and shortness of breath; irritation of the upper respiratory tract, which includes burning of mouth, throat, and chest.

**SECTION IV. FIRST AID MEASURES**

|                   |   |
|-------------------|---|
| <b>SKIN</b>       | Wash exposed skin with soap and water. If irritation develops or persists, seek medical attention. Contaminated leather articles, including shoes, that cannot be decontaminated should be discarded.           |
| <b>EYES</b>       | Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.  |
| <b>INHALATION</b> | Move affected individual to an area free of risk from further exposure. Administer oxygen or artificial respiration as needed. Immediate or delayed asthma-like symptoms may develop. Obtain medical attention. |
| <b>INGESTION</b>  | If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions.                        |

**SECTION V. FIRE-FIGHTING MEASURES**

|   |   |
|---|---|
| <b>GENERAL FIRE HAZARDS</b>                 | See Section 9 for Flammability Properties.<br>Cool containers with water spray. Containers may burst if overheated. This product reacts with water producing CO <sub>2</sub> gas. Do not reseal contaminated containers as a hazardous pressure build up could result in container rupture. |
| <b>HAZARDOUS COMBUSTION PRODUCTS</b>        | Combustion products may include carbon oxides, nitrogen oxides, hydrocarbons, HCN and isocyanates.  |
| <b>EXTINGUISHING MEDIA</b>                  | Use methods for the surrounding fire.   |
| <b>FIRE FIGHTING EQUIPMENT/INSTRUCTIONS</b> | Firefighters should wear full protective clothing including self contained breathing apparatus.   |

**SECTION VI. ACCIDENTAL RELEASE MEASURES****Containment Procedures**

Wear appropriate personal protective equipment. Stop the flow of material, if this is without risk. Do not allow to drain to sewers.

**Clean-Up Procedures**

Ventilate the contaminated area. Absorb spill with inert material. Shovel material into appropriate container for further neutralization and disposal. Dispose of in accordance with federal, state and local regulations in a permitted waste management facility.

**Evacuation Procedures**

Evacuate the area promptly. Keep upwind of the spilled material and isolate exposure.

**Special Procedures**

Avoid inhalation of vapors or mists. Surfaces may become slippery after a spill.



**SECTION VII. HANDLING AND STORAGE****HANDLING:**

Avoid contact with skin and eyes. Do not breathe vapors. Wear proper personal protective equipment. Avoid contact with water. Do not re-seal contaminated product as a hazardous build-up of pressure may result from liberation of CO<sub>2</sub> gas. Avoid contact with metals such as aluminum, brass, copper, galvanized metals, tin and zinc.

**STORAGE:**

Keep containers properly sealed in a cool, dry, well-ventilated area below 105F. Do not store in open, unlabeled or mislabeled containers. Do not reuse empty container without commercial cleaning or reconditioning.

**SECTION VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION****Component Exposure Limits****Methylene bisphenol isocyanate (MDI) (101-68-8)**

ACGIH: 0.005 ppm TWA

OSHA: 0.02 ppm Ceiling; 0.2 mg/m<sup>3</sup> Ceiling

NIOSH: 0.005 ppm TWA; 0.05 mg/m<sup>3</sup> TWA

0.020 ppm Ceiling (10 min); 0.2 mg/m<sup>3</sup> Ceiling (10 min)

|                             |   |
|-----------------------------|---|
| <b>SKINS</b>                | The use of neoprene, nitrile rubber or butyl rubber gloves is recommended.  |
| <b>RESPIRATORY</b>          | Use a NIOSH-approved organic vapor respirator to protect against inhalation of vapors. A respirator should be used if ventilation is unavailable, or is inadequate for keeping vapor levels below the applicable exposure limits. |
| <b>EYES</b>                 | Wear chemical goggles; add face shield (if splashing is possible).  |
| <b>ENGINEERING CONTROLS</b> | Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.   |
| <b>GENERAL</b>              | Eye wash fountain and emergency showers are recommended.  |

**SECTION IX. PHYSICAL AND CHEMICAL PROPERTIES**

|                            |                              |                                       |                          |
|----------------------------|------------------------------|---------------------------------------|--------------------------|
| <b>PHYSICAL FORM</b>       | Liquid                       | <b>AUTO IGNITION</b>                  | Not available            |
| <b>APPEARANCE</b>          | Straw-colored viscous liquid | <b>BURNING RATE</b>                   | Not available            |
| <b>ODOR</b>                | Negligible                   | <b>LOWER FLAMMABILITY LIMIT (LFL)</b> | Not available            |
| <b>pH</b>                  | Not available                | <b>UPPER FLAMMABILITY LIMIT (UFL)</b> | Not available            |
| <b>VAPOR PRESSURE</b>      | Not available                | <b>FLASH POINT METHOD</b>             | Pensky-Martin Closed Cup |
| <b>BOILING POINT</b>       | Not available                | <b>FLASH POINT</b>                    | > 200°F (93°C)           |
| <b>VAPOR DENSITY</b>       | Not available                | <b>OCTANOL/H<sub>2</sub>O COEFF.</b>  | Not available            |
| <b>MELTING POINT</b>       | Not available                | <b>PERCENT VOLATILE</b>               | < 0.15                   |
| <b>SOLUBILITY IN WATER</b> | Reacts with water            | <b>VISCOSITY</b>                      | 7500 cps @ 75°F          |
| <b>SPECIFIC GRAVITY</b>    | 1.10                         | <b>VOC</b>                            | Not available            |
| <b>EVAPORATION RATE</b>    | Not available                |                                       |                          |

**SECTION X. STABILITY AND REACTIVITY****STABILITY:**

Stable at room temperature. Reaction with water (moisture) produces CO<sub>2</sub> gas. Exothermic reaction with materials containing active hydrogen groups.

**INCOMPATIBILITY:**

Water, alcohols, amines, bases and acids.

**HAZARDOUS DECOMPOSITION:**

Carbon oxides, nitrogen oxides, hydrocarbons, HCN and isocyanates.

**CONDITIONS TO AVOID:**

Avoid high temperatures. Avoid contact with water. Avoid contamination. Avoid contact with metals such as aluminum, brass, copper, galvanized metals, tin and zinc.

**POSSIBILITY OF HAZARDOUS REACTIONS:**

Polymerization will occur at elevated temperatures in the presence of alkalies, tertiary amines and metal compounds.

## SECTION XI. TOXICOLOGICAL INFORMATION

### Acute Dose Effects

#### A: General Product Information

This product is harmful by inhalation, when in contact with the skin and if it is swallowed. This product may cause sensitization by inhalation and skin contact. Repeated inhalation of vapors may cause an allergic respiratory response, the onset of which may be delayed several hours after exposure. This product is irritating to the eyes. Symptoms include itching, burning, redness and tearing. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

#### B: Component Analysis - LD50/LC50

##### Methylene bisphenol isocyanate (MDI) (101-68-8)

Oral LD50 Rat: 9200 mg/kg

##### Diisodecyl phthalate (mixed isomers) (68515-49-1)

Oral LD50 Rat: >60000 mg/kg; Dermal LD50 Rabbit: 16000 mg/kg

##### 1,1'-Methylenebis (isocyanato-) benzene (26447-40-5)

Inhalation LC50 Rat: 0.369 mg/L/4H; Dermal LD50 Rabbit: >6200 mg/kg

### Repeated Dose Effects

Repeated or prolonged exposure to MDI may result in isocyanate sensitization (chemical asthma) in some individuals, causing them to react to isocyanate exposure at concentrations below the established exposure limits. Symptoms include chest tightness, wheezing, coughing, and shortness of breath. Effects can be delayed. Overexposure can cause lung damage, including decreased lung function. Prolonged or repeated skin contact may cause irritation leading to dermatitis. Skin sensitization may also occur.

Lung injury has been observed in laboratory animals after repeated excessive exposure to MDI/polymeric MDI aerosol droplets.

Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/polymeric MDI (6 mg/m) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

### Carcinogenicity

#### A: General Product Information

No additional information available.

#### B: Component Carcinogenicity

##### Methylene bisphenol isocyanate (MDI) (101-68-8)

IARC: Monograph 71 [1999], Supplement 7 [1987], Monograph 19 [1979] (Group 3 (not classifiable))

##### 1,1'-Methylenebis (isocyanato-) benzene (26447-40-5)

IARC: Monograph 71 [1999], Supplement 7 [1987], Monograph 19 [1979] (Group 3 (not classifiable))

## SECTION XII. ECOLOGICAL INFORMATION

### Ecotoxicity

#### A: General Product Information

No information available for the product. Product is immiscible with water.

#### B: Component Analysis - Ecotoxicity - Aquatic Toxicity

##### Diisodecyl phthalate (mixed isomers) (68515-49-1)

| Test & Species  |             | Conditions |
|---|-------------|------------|
| 96 Hr LC50 Pimephales promelas                              | > 1 mg/L    | static     |
| 96 Hr LC50 Oncorhynchus mykiss                              | > 1 mg/L    | static     |
| 96 Hr LC50 Lepomis macrochirus                              | > 0.55 mg/L | static     |
| 96 Hr EC50 Selenastrum capricornutum                        | > 1.3 mg/L  |            |
| 48 Hr EC50 Daphnia magna                                    | > 1 mg/L    |            |
| <b>1,1'-Methylenebis (isocyanato-) benzene (26647-40-5)</b> |             |            |
| 96 Hr EC50 Skeletonema costatum                             | 3230 mg/L   |            |
| 24 Hr EC50 Daphnia magna                                    | > 1000 mg/L |            |

**SECTION XIII. DISPOSAL CONSIDERATIONS****US EPA Waste Number & Descriptions****A: General Product Information**

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

**B: Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions**

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

**SECTION XIV. TRANSPORTATION INFORMATION****US DOT Information**

**Shipping Name:** Not Regulated.

**TDG Information**

**Shipping Name:** Not Regulated.

**SECTION XV. REGULATORY INFORMATION****US Federal Regulations****A: General Product Information**

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are either exempt from listing (i.e. polymers, hydrates) or are listed on the confidential inventory as declared by the supplier.

**B: Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Methylene bisphenol isocyanate (MDI) (101-68-8)**

SARA 313: 1.0 % de minimis concentration (listed under Chemical Category N120, Diisocyanates)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

**Acute Health:** Yes **Chronic Health:** Yes **Fire:** No **Pressure:** Yes **Reactive:** Yes

**State Regulations****A: General Product Information**

Other state regulations may apply. Check individual state requirements.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

| Component                            | CAS #   | CA  | MA  | MN  | NJ  | PA  | RI  |
|--------------------------------------|---------|-----|-----|-----|-----|-----|-----|
| Methylene bisphenol isocyanate (MDI) | 80-62-6 | Yes | Yes | Yes | Yes | Yes | Yes |

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):  
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

**Component Analysis - WHMIS IDL**

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

| Component                            | CAS #    | Minimum Concentration |
|--------------------------------------|----------|-----------------------|
| Methylene bisphenol isocyanate (MDI) | 101-68-8 | 0.1%                  |

**WHMIS Classification: D2A, D2B****Additional Regulatory Information**

**A: General Product Information** No additional information available.

**B: Component Analysis - Inventory**

| Component   | CAS #      | TSCA | CAN | EEC    |
|---|------------|------|-----|--------|
| Methylene bisphenol isocyanate (MDI)                | 101-68-8   | Yes  | DSL | EINECS |
| Diisodecyl phthalate (mixed isomers)                | 68515-49-1 | Yes  | DSL | EINECS |
| 1,1'-Methylenebis (isocyanato-) benzene             | 26447-40-5 | Yes  | DSL | EINECS |
| Benzene, 1,1'-methylenebis[isocyanato-, homopolymer | 39310-05-9 | Yes  | DSL | No     |
| Dimethyl silicone polymer with silica               | 67762-90-7 | Yes  | DSL | No     |

## SECTION XVI. OTHER INFORMATION

### Glossary:

ACGIH: American Conference of Governmental Industrial Hygienists  
ANSI: American National Standards Institute  
ASTM: American Society for Testing and Materials  
CAS: Chemical Abstract Services  
CFR: Code of Federal Regulations (United States)  
CSA: Canadian Standardisation Association  
DOT: Department of Transportation (United States)  
DSL: Domestic Substances List (Canada)  
EPA: Environmental Protection Agency (United States)  
HMIS: Hazardous Material Information System  
IARC: International Agency for Research on Cancer  
LC50: (Lethal concentration<sub>50</sub>) Concentration of a substance in air that causes death of 50% mortality of a defined animal population  
LD50: (Lethal dose<sub>50</sub>) Single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of a defined animal population.  
NFPA: National Fire Protection Association (United States)  
NIOSH: National Institute for Occupational Safety and Health  
NTP: National Toxicology Program  
OSHA: Occupational Safety & Health Administration (United States)  
PEL: Permissible Exposure Limit  
RCRA: Resource Conservation and Recovery Act (United States)  
RTECS: Registry of Toxic Effects of Chemical Substances  
TDG: Transportation of Dangerous Goods  
TLV: Threshold Limit Value  
TWA: Time-weighted average  
TSCA: Toxic Substances Control Act (United States)  
WHMIS: Workplace Hazardous Materials Information System (Canada)

### Reference:

Supplier MSDS

This MSDS has been prepared by: SOPREMA, INC.  
For information: 800-543-3085

The Material Safety Data Sheets of SOPREMA are available on Internet at the following site: [HTTP://WWW.SOPREMA.US](http://WWW.SOPREMA.US)

### Justification of the update:

New MSDS.

This MSDS contains all the information required by ANSI Z-400.1-1998 standard (United States), by regulation 29 CFR Part 1910.1200 of the Hazard Communication Standard of OSHA, and is in accordance with standard DORS/88-66 OF WHMIS Canada.

**To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**



# SBS ELASTIC CEMENT

SBS ELASTIC CEMENT (11)

Order No. D35635

## DESCRIPTION

SBS ELASTIC CEMENT is a ready to use, elastomeric bitumen based mastic which contains a bituminous binder with sticking agents/solvents and is used on flat or 1/4": 12" or less horizontal slopes for setting drain leads, penetration pockets, pipe flanges, metal gravel stops, etc. This product meets ASTM D 4586, Type I, Class II.

SBS ELASTIC CEMENT may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS ELASTIC CEMENT   |
|----------------------|--|
| Description          | elastomeric bitumen general adhesive   |
| Installation         | special extrusion gun or patch   |
| Packaging            | 5 gallon pail (18.9 L)   |
| Application          | 70 to 140 ft <sup>2</sup> /gal.<br>(0.28 to 0.57 L/m <sup>2</sup> ),<br>depending on surface |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.





# SBS MASTIC

SBS MASTIC (12)

Order No. D35651

## DESCRIPTION

SBS MASTIC is made from synthetic rubbers plasticized with bitumen and solvents. SBS MASTIC is provided in a cartridge container and used as a sealant to fill the void area on all self-adhered field and flashing base ply membrane side lap edges not having a bitumen bleed-out and on self-adhered membrane T-joints. This sealant can be applied to the seam edges before or after the Elastocol 500 (horizontal surfaces ONLY) or Elastocol 600c SA Primer (horizontal or vertical surfaces) is applied to Soprema high brush sanded SBS base membrane ply surfaces or self-adhesive field or base flashing membrane ply or inner ply surface prior to the next membrane layer being adhered. This product meets ASTM D 4586, Type I, Class II.

SBS MASTIC may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS MASTIC  |
|----------------------|---|
| Description          | sealant compound  |
| Installation         | standard cartridge gun  |
| Packaging            | caulking tube<br>10.4 oz. (310 ml)  |
| Application          | coverage varies according to size of bead,<br>temperature at application and<br>technique used by installer |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.







# ALSAN FLASHING

Alsan Flashing (5 gallons) (10)  
Alsan Flashing (1 gallon) (10A)

Order No. D32800  
Order No. D32825

## DESCRIPTION

ALSAN Flashing is a patented polyurethane/bitumen resin, single-component, and moisture-cured compound that utilizes low solvent technologies.

ALSAN PolyFleece is a flexible reinforcement that is embedded into the first layer of ALSAN Flashing Base Coat and then covered over with additional Base Coat material. ALSAN PolyFleece is available in various widths, but typically the four (4") inch wide (102 mm) reinforcement is installed at change of plane junctures, angles or at other stress points. See published Specifications and Approved Details.

Used in combination, ALSAN Flashing and ALSAN PolyFleece create a watertight, puncture & UV resistant liquid applied flashing or field membrane Roof Assembly (ALSAN Flashing System). The ALSAN Flashing System is applied to properly prepared perimeter edge metal, curbs, roof penetrations, columns, parapet walls and area dividers (Restrained/supported wall constructions only). The ALSAN Flashing System can also be used as either a reinforcing ply over existing field membrane seams and joints, surfacing layer over field membrane where ponding water occurs or as a stand-alone liquid membrane roof assembly.

ALSAN Flashing may be used as an approved accessory for Soprema waterproofing systems.

## APPLICATION INSTRUCTIONS

ALSAN Flashing is compatible with Soprema SBS modified bitumen membranes as well as other types of commercial grade roofing membranes and building component surfaces. It is easy to apply and requires only simple tools. ALSAN Flashing consists of two coats: Base Coat and Finish Coat. Additional layers may be required when specific job conditions exist. Stir ALSAN Flashing prior to application.

Surfaces must be structurally sound, dry, clean, including but not limited to: free of dirt, moisture, loose particles, oil, grease, tar, paint, wax, rust and concrete curing and parting compounds. All surfaces must be mechanically prepared to remove previous coatings, laitance, and all miscellaneous surface contamination and to provide a profile for proper adhesion.

When coatings cannot be removed or if a surface is questionable, field test to determine proper adhesion or which ALSAN Primer may be required to insure acceptable adhesion. Priming is usually not required on clean, dry plywood, concrete, metal (without manufacturing oils) and other cured and dry masonry surfaces. When in doubt, contact the Soprema Technical Department.

Neither apply ALSAN Flashing when substrates are over 187° F (86° C), under 40° F (4° C) nor when inclement weather is anticipated.

When ALSAN Flashing Base Coat has been exposed for more than seven (7) days, apply ALSAN Primer H80 or ALSAN Trafik HP 510 Zero at a rate of 200-250 square feet per gallon to the existing Base Coat surface. Allow a minimum drying time for H80 Primer of 2-6 hrs. depending upon drying conditions. If the ALSAN Flashing Finish Coat (or next layer of Base Coat) is not applied to the dry H80 primed substrate within 36 hours (At 68° F, [20° C]) then the existing Base Coat must be re-primed.



## APPLICATION INSTRUCTIONS (CONTINUED)

**Apply ALSAN Flashing Base Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>) onto the vertical and horizontal substrates extending the Base Coat a minimum one (1") inch (25 mm) past the point where the ALSAN PolyFleece reinforcement will be placed. Immediately center and embed the ALSAN PolyFleece into the wet (not skinned over) ALSAN Flashing Base Coat. Extend ALSAN PolyFleece a min. one (1") inch (25 mm) vertically and a min. two (2) in. (51 mm) out onto the horizontal surface without wrinkles or folds. ALSAN PolyFleece must overlap previous piece by two (2) inches (51 mm) on side and end laps.

**Apply ALSAN Flashing Embedment Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>). Coat over the ALSAN PolyFleece to ensure that it is completely embedded, covered and watertight.

**Apply ALSAN Flashing Finish Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>) or that additional amount to insure the substrate is watertight. Base Coat must be clean, dry, set-up and/or primed (when required) prior to the application of the ALSAN Flashing Finish Coat.

ALSAN Flashing Finish Coat can be applied to the existing Base Coat after thirty minutes. In cool weather conditions, Base Coat set-up time can vary from between thirty-minutes up to several hours before applying a next layer of Base Coat or the Finish Coat.

As an option, after initial tack to the top-surface, apply matching color ceramic granules pressing them into the Finish Coat.

## APPROVED THERMAL INSULATIONS & COVERBOARDS

ALSAN Flashing and ALSAN PolyFleece can be used as a liquid membrane roof assembly when applied onto the following thermal insulation and cover boards:

- Sopraboard, 1/8 in. min. (3.2 mm)
- High Density Wood Fiber Board (HDWFB) coated six sides, 1/2 in. min. (13 mm)
- Plywood, 1/2 in. min. (13 mm), structural use panels, 7/16 in. min (11 mm).
- DensDeck, 1/4 in. min. (6 mm) Min. 1/2 or 5/8 in. (13 to 16 mm) required for FM Approvals thermal barriers)
- Polyisocyanurate\* flat stock, 1.4 in. min. (36 mm), polyisocyanurate\* tapered system, 1/2 in. (13 mm) min. with approved cover boards\*.
- FM Approvals Listed vapor retarders, Sopralene Flam 180 or Sopralene 180 SP 3.5mm (heat welded only); Elastophene HD, Elastophene 180 Sanded, Sopralene 180 Sanded, Soprabase, Sopraglass Premium Base Sheet, Modified Sopra-G, hot mopped or adhered with Soprema cold adhesive to properly prepared, clean, dry and primed (where required) or these membranes or base sheets are mechanically fastened to acceptable substrates prior to the application of the ALSAN Flashing System.
- Contact Soprema for other possible Approved Substrates

\*Note: Industry standards recommend, FM Approvals and in some cases UL requires cover or rigid board be installed on top of polyisocyanurate insulations when applying liquid membrane roof assemblies. Generic cover boards are listed above. Contact Soprema for additional information on currently Approved polyisocyanurate insulation boards that can receive a direct application of ALSAN Flashing to the board facer.



## LIMITATIONS

All coverage rates are approximate, theoretical and do not account for waste, spillage, irregular surfaces and roof mechanic and/or roofing contractor's supervisor or Architect of Record on-site inspector instructions or their acceptance of per job application techniques. The contractor is ultimately responsible to determine, day-to-day limitations and when to terminate work on a given day because of those job-site limitations, how to maintain acceptable application and coverage ranges, and is responsible to complete the ALSAN Flashing System that is acceptable to Soprema to issue a warranty and in effect successfully finished the roof assembly in accordance with Soprema General Requirements, ALSAN Flashing Approved Details and Product Data Sheets.

ALSAN Flashing can be applied in cold temperatures. However, application coverage rates can vary depending upon ALSAN Flashing, surface and ambient temperatures. Use electric pail warmers to insure ALSAN Flashing temperatures at the point of application will still provide acceptable wet and dry mil thicknesses.

Do not apply to wet, damp surfaces or to new single ply membranes.

Store ALSAN Flashing in original containers, upside down and on the shaded side of roof or in a storage building meeting all federal, state and local regulations. Maximum storage temperature not in direct sunlight is 90° F (32° C). Container pressure may increase with temperature. Handle and open container with care. Use impervious gloves and eye protection.

KEEP OUT OF THE REACH OF CHILDREN. KEEP AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. Avoid contact with eyes, skin or clothing and wash thoroughly after handling. DO NOT take internally. Adequate ventilation MUST be used. Use impervious gloves and eye protection. If area is poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Keep container lid sealed when not using. Observe all warning labels until container is commercially reconditioned and/or cleaned.

High vapor concentrations may cause depression of central nervous system. This product contains isocyanate. May cause sensitization by inhalation and by contact with skin. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000.

## WARRANTY

Contact your local Soprema representative for project warranty offerings.





# ALSAN POLYFLEECE

## DESCRIPTION & INSTALLATION

Soprema Alsan PolyFleece is flexible, non-woven, spanlaced polyester fabric reinforcement used in Soprema Alsan cold liquid-applied one-component polyurethane reinforced roofing and waterproofing membrane systems to improve tear strength, puncture resistance, flexural fatigue and crack bridging capabilities while maintaining membrane uniformity.

Soprema Alsan PolyFleece is recommended and widely used as flashing reinforcement with Alsan Flashing and other Alsan liquid-applied one-component polyurethane resins. It is highly flexible, conforms to any shape, irregular penetrations and other surfaces. It has excellent coating saturation capabilities into elastomeric polyurethane resins.

Mix and apply Soprema Alsan resin in strict accordance with Soprema instructions. Apply mixed resin liberally to the prepared surface with a roller using a broad, even stroke. Roll out spanlaced polyester fleece onto the liquid resin, making sure that the roll is unrolling smooth and without any wrinkles or fish mouths. The fleece will begin to rapidly saturate with the liquid resin. Allow the fleece to saturate with resin from bottom up. Using a roller, wet the fleece with resin applying light pressure. Roll the fleece with a medium nap roller to eliminate any air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of fleece until fully saturated and the layer of resin is fully and evenly applied. The coat should be smooth and uniform. The amount of resin applied at the top of the fleece surface should not leave visible whiteness in fleece. Additional finish coat, granules and/or quartz silica aggregate broadcasting may be required if specified.

Soprema Alsan PolyFleece rolls are available in nominal widths and sizes:

| Fleece width | Fleece length   | Gross coverage | Order Number |
|--------------|-----------------|----------------|--------------|
| 4 in.        | 50 ft. (15.3 m) | 16 sf          | S972         |
| 6 in.        | 50 ft. (15.3 m) | 25 sf          | S971         |
| 8 in.        | 50 ft. (15.3 m) | 33 sf          | S968         |
| 39 in.       | 50 ft. (15.3 m) | 164 sf         | S970         |

Allow for 2" minimum overlap at field and flashing membrane side laps, minimum 4" overlap at all end laps and minimum 4" overlap at all flashings and tie-ins.

## CHARACTERISTICS

| Product/Property   | ALSAN POLYFLEECE       |           |
|--------------------|------------------------|-----------|
| Color              | White                  |           |
| Fiber content      | 100% Polyester         |           |
| Physical state     | Solid                  |           |
| Construction       | Stitch bond            |           |
| Weight             | 2.4 oz./square yard    |           |
| Width              | Variable / per request |           |
| Nominal thickness  | 30 mils                |           |
| Grab tensile (lbs) | MD 44 lbs              | XD 25 lbs |
| Mullen burst (psi) | 70 lbs.                |           |



## HANDLING AND STORAGE

Always store in cool and dry location. Store rolls in stand-up position to avoid flattening and deforming.

Shelf life: Indefinite with proper storage.

## SPECIAL INDICATIONS

Safety Instruction:

- Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product.
- Soprema Alsan Fleece may be disposed of in standard landfills. For more information, refer to instruction on the label of the package and to relevant Material Safety Data Sheet (MSDS).
- Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

Quality control:

SOPREMA has always attached the highest importance to Quality Control. For this reason, we operate an internationally recognized Quality System according to ISO 9001:2000, with the system independently monitored and certified by AFAQ-Association Française d'Assurance Qualité (French Main Quality Certification Office).

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes and a manufacturer of liquid membrane systems with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. SOPREMA has been at the forefront of liquid membrane technology for nearly two decades.





PROTECT EXTERIOR SURFACES FOR YEARS WITH A

SEAMLESS WATERTIGHT SOLUTION



## WHY APPLY COLPHENE H...

- Stops Moisture Penetration Year-Round
- Prevents Early Deterioration of Substrate
- Forms a Tough, Flexible, Seamless Membrane



## APPLICATIONS:

**COLPHENE H is used in many industrial, commercial and institutional applications:**

- Plaza/parking decks
- Terraces or balconies
- Split-slab construction
- Below-grade foundation walls
- Bridge decks and tunnels
- Green roofs and planters
- Roof decks in an inverted roof assembly
- Underground vaults

## ADVANTAGES:

**COLPHENE H is a hot-applied, rubberized asphalt waterproofing membrane with multiple advantages:**

- Fully bonds to the exterior surface, restricting moisture penetration
- Conforms to irregular surfaces and bridges non-working cracks
- Contains 100% solids with no solvents
- Easy to apply by a certified contractor
- No change in viscosity, moisture penetration or flexibility after aging
- Meets UL Class A standards
- Up to 20-year, One-Source Warranty
- Recycled content (LEED)



Conservation-minded manufacturers of products used by the building industry evaluate the impact of their products on the environment during the lifespan of a building (from manufacturing to construction, operation and demolition).

SOPREMA contributes to environmental protection and sustainable construction by manufacturing high quality products that meet the highest environmental standards. The Ginkgo Biloba leaf is the symbol selected by SOPREMA to represent its ecological commitment. This ancient oriental tree represents sustainability, health, aesthetics and resistance to attack.

SOPREMA was one of the first roofing manufacturers to establish an *Environmental Management Program*, and the first modified bitumen manufacturer to be ISO 14001 certified for its environmental management practices. SOPREMA's global research facilities are developing products made from renewable resources and recycled materials to reduce SOPREMA's carbon footprint.





**LOS ANGELES SCIENCE CENTER**  
SOPRANATURE COMBINES SOPREMA'S SUPERIOR WATERPROOFING TECHNOLOGY WITH THE ENVIRONMENTAL BENEFITS OF GREEN ROOFING. THE LOS ANGELES SCIENCE CENTER CONSISTS OF A FULLY-REINFORCED COLPHENE H WATERPROOFING ASSEMBLY AND SOPRADRAIN ECO-VENT WR, A SPECIALLY DESIGNED, WATER-RETENTION DRAIN BOARD THAT RETAINS RAIN WATER TO RE-HYDRATE THE VEGETATION, THUS REDUCING THE AMOUNT OF ADDITIONAL WATER NEEDED FOR IRRIGATION OF THE ROOF PLANTS.

## SYSTEM COMPONENTS:

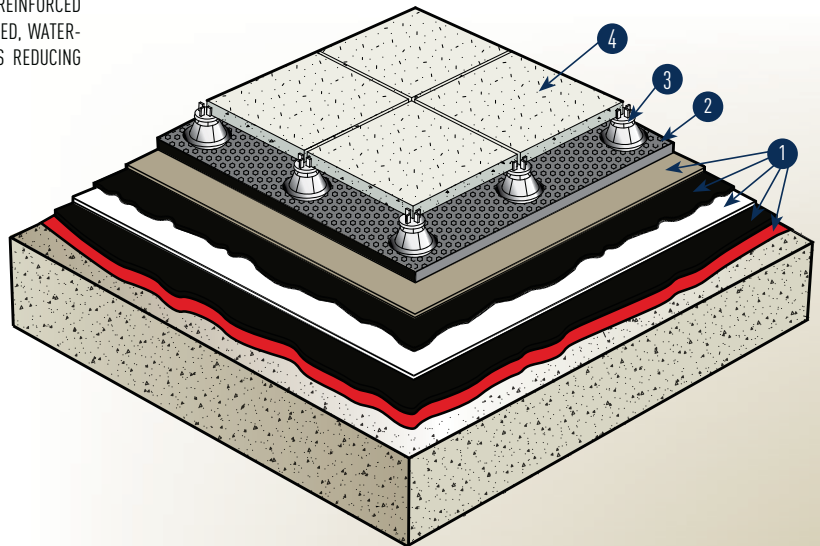
- Primer**  
ASTM D41 Asphalt Primer.
- COLPHENE H**  
A hot, fluid-applied, seamless membrane composed of recycled crumb rubber and inert clay filler that cures to form a tough, flexible, fully-adhered waterproofing membrane.
- COLPHENE-FLASH R**  
A spun-bonded, polyester/nylon mat used to reinforce COLPHENE H waterproofing membrane.
- Elastophene Protection Course**  
This heavy duty SBS modified bitumen membrane is reinforced with either fiberglass or polyester and provides superior protection from heavy construction traffic and overburden materials.
- Sopradrain Eco-Vent Drainage Boards**  
A prefabricated drainage panel composed of recycled polypropylene core and high performance geotextile fabric which provides excellent compressive strength and long lasting durability.
- Architectural Pavers**  
SOPREMA's architectural pavers are hydraulically pressed and offer high compressive strength, low water absorption and an aesthetically pleasing, finished appearance.

### Composite materials form COLPHENE H

The durability and flexibility of COLPHENE H comes from a specially selected blend of refined asphalts, recycled crumb rubber and mineral stabilizers. This composite cures to form a seamless, permanent elastomeric membrane. It is bonded to the substrate to prevent lateral migration of water.

### Time-proven system

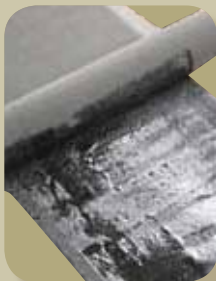
COLPHENE H has become a staple in the construction and refurbishment of commercial structures whenever a long-lasting, watertight solution is needed. Time proven COLPHENE H has been applied both above and below grade in buildings, parking decks, bridge decks, tunnels and more.



## COLPHENE H SYSTEM WITH PAVERS

- APPROVED COLPHENE H ASSEMBLY (TYP)**  
PRIMER  
COLPHENE H (90 MILS)  
COLPHENE-FLASH R  
COLPHENE H (125 MILS)  
ELASTOPHENE SANDED
- SOPRADRAIN ECO-VENT**
- PEDESTALS**
- SOPREMA PAVERS**

# COMPLETE WATERPROOFING SOLUTION FOR VIRTUALLY ANY COMMERCIAL STRUCTURE



**SBS Modified Bituminous**  
Sheet waterproofing



**COLPHENE 3000**  
Self-adhesive membrane  
for foundation waterproofing



**COLPHENE ICF**  
Self-adhesive membrane  
for insulated concrete  
form waterproofing



**COLPHENE BSW**  
Blind side waterproofing  
applications



**COLPHENE TORCH N' STICK**  
SBS modified bituminous  
membrane uses on  
foundations walls and  
other vertical below grade  
concrete surfaces



**CANADA**  
1.877.MAMMOUTH  
www.soprema.ca

**USA**  
1.800.356.3521  
www.soprema.us

## WHY SOPREMA . . .

SOPREMA's quality is known and respected for over 100 years and in more than 80 countries worldwide. Our products meet the waterproofing challenges of the building envelope. With our team of experienced manufacturer's representatives and trained technical staff, SOPREMA maintains its strong relationship with both architects and contractors in ultimately



providing the owner with a quality waterproofing system.

### **Viaduc de Langwies, Switzerland**

This reinforced concrete railway bridge on the Coire-Arosa line in Switzerland was waterproofed with a Mammouth membrane when it was built in 1912. The latest inspection by Swiss Railways showed no need for it to be renewed.



## HOT-APPLIED RUBBERIZED ASPHALT WATERPROOFING

### COLPHENE H (215 mils)

*This specification serves as a guideline and must be modified, as necessary, by the Designer of Record to suit the needs of the individual project. This specification is prepared in accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Any improvements and changes to the content of this specification can be made only with the written authorization of the Designer of Record. [delete this paragraph]*

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

##### 1.02 RELATED SECTIONS

- A. DIVISION 2 - Sitework Section 02500/02870
- B. DIVISION 3 - Concrete Section 03300 - Deck Surface/Substrate. Coordination of this section is required to facilitate the preparation, proper sequence, and successful installation of the waterproofing membrane system.

#### Cast In Place Concrete/Composite Deck

- 1. Strength/Density: Minimum 2,500 psi (17,235 kPa) Compressive Strength  
Minimum 115 pcf (1842 kg/m<sup>3</sup>) Density
- 2. Finish: Wood-Float or Wood-Troweled finish. Steel trowel finish is not acceptable or recommended.
- 3. Concrete Cure:
  - a. Water cure, wet coverings, paper sheets, plastic sheets or sodium silicate compound.
  - b. Duration of Cure:
    - 1. Structural Weight Concrete: minimum 14 days, recommend 28 days, prior to application of the waterproofing membrane.
    - 2. Lightweight Structural Concrete: minimum 28 days, recommend 60 days, prior to application of waterproofing membrane. Venting of the deck from the underside is strongly recommended to facilitate drying.
    - 3. Cure times may vary due to thickness of slab, ambient temperature, relative humidity, region and season.
  - c. Form Release Agents: Petroleum based products, distillates are not to be used.  
**Contact SOPREMA, INC.**
  - d. Refer to Section 3.02 Substrate Preparation.
- C. DIVISION [ ] – Masonry

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- D. DIVISION [ ] - Wood Blocking and Curbing
- E. DIVISION [ ] – Insulation
- F. DIVISION [ ] - Sheet Metal Flashing and Trim
- G. DIVISION [ ] - Caulking and Sealants
- H. DIVISION [ ] - Plumbing Specialties

**1.03 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
- B. Underwriters Laboratories (UL)
- C. Canadian General Standards Board CGSB- 37.50-M89, Standard for “Asphalt, Rubberized, Hot Applied for Roofing and Waterproofing
- D. International Organization for Standardization (ISO) 9001:2000 Quality Standard

**1.04 SYSTEM DESCRIPTION** *(Edit for project requirements)*

- A. Furnish and install a **SOPREMA** Waterproofing System or Assembly, vertically or horizontally, including substrate primer, a monolithic, fully reinforced rubberized asphalt membrane, flashings, separation layer, and all required accessories. [protection course (if required), drainage course (if required), extruded polystyrene insulation (if required), solid core protection layer (if required), pavers & paver pedestals (if required)]. All products shall be purchased from a single-source manufacturer except as approved by **SOPREMA, Inc.**

**1.05 SUBMITTALS**

- A. Certification from an independent testing laboratory, that the material meets the CGSB-37.50-M89 standard for rubberized asphalt membranes, including all applicable ASTM procedures.
- B. Evidence verifying full time quality control of production facilities; that each batch of material is tested and conforms with the manufacturer's published physical properties.
- C. Evidence that extruded polystyrene insulation is free from CFC's.
- D. Confirmation that all waterproofing components are being supplied and warranted by a single-source manufacturer (except as approved in writing by **SOPREMA, Inc.**).
- E. Provide three (3) copies of the most current technical data sheets. These documents must describe the physical properties of the specified materials and explanations about product installation, including installation techniques, restrictions, limitations and any other manufacturer recommendations.



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**1.06 QUALITY ASSURANCE**

- A. **Refer to Section 1.04 SYSTEM DESCRIPTION and Section 1.05 SUBMITTALS**
- B. The Waterproofing Contractor shall demonstrate qualifications to perform the work of this Section by submitting the following documentation:
1. Certification or license by the membrane manufacturer confirming the waterproofing contractor is an authorized applicator of the product the installer intends to use.
  2. List of at least three (3) projects, satisfactorily completed within the past five (5) years, of similar scope and complexity.
- C. **Refer to Section 1.04 SYSTEM DESCRIPTION.** Include single-source for all components from the manufacturer.
- D. The rubberized asphalt membrane product shall contain an inert clay filler to enable the product to be resistant to acids (fertilizers, building washes and acid rain).
- E. Membrane manufacturer shall have available technical staff to assist the contractor, when necessary, in application of the products and final inspection of the assembly.
- F. Membrane Manufacturer Qualification:
1. Membrane manufacturer shall show evidence that the specified rubberized asphalt has been manufactured by the same source for ten (10) years and successfully installed on a yearly basis for a minimum of ten (10) years on projects of similar scope and complexity.
  2. Membrane manufacturer offering the single-source warranty must have a full-time technical support staff to provide the installer with technical assistance in the installation of the products included in the warranty.
  3. All materials specified herein are cited as a minimum standard of quality, but shall not preclude consideration of superior materials or components.
- G. Pre-Construction Conference; The membrane manufacturer will have a representative meet with all parties, as necessary, at the jobsite for a review of project conditions and sequence of events as they relate to the integrity of the waterproofing assembly.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials in original unopened containers clearly labeled with manufacturer's name, product name, and instructions for use. Refer to Product Data Sheets.
- B. Materials shall be stored on pallets in a clean, dry area protected from the elements.
- C. Store all adhesives at temperatures between 60°F (15.5°C) and 80°F (26.6°C).
- D. The membrane and accessories shall not during its service life be exposed to a constant temperature above 180°F (82°C).
- E. Do not breathe adhesive vapors or use near an open flame. Adhesives are extremely flammable; please consult container package, Product Data Sheets and Material Safety Data Sheets for written installation instructions and safety information.

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**1.08 PROJECT CONDITIONS**

- A. Application of membrane shall be in a well ventilated area and shall not commence nor be continued during inclement weather. All surfaces shall be free of water, frost, snow and ice and the ambient temperature shall not be below 0°F (-17.7°C).
- B. Exposure to chemical discharges, airborne contaminants, and waste products including but not limited to; grease, oil, hydraulic fluid, other petroleum distillates, solvents, fats, vegetable oil and mineral oil is prohibited.
- C. Substrate Preparation: **Refer to Section 1.02 RELATED SECTIONS and 3.02 SUBSTRATE PREPARATION.**
- D. It is the General Contractor's responsibility to assure adequate protection during installation of the waterproofing assembly and properly sequence system installation requirements.

**1.09 WARRANTY**

- A. Upon completion of work, the contractor shall supply the owner with a Single-Source Warranty issued by the manufacturer of the waterproofing system/assembly.
- B. SOPREMA Colphene H Warranties

- 1. **Total System Warranties** cover all components of the waterproofing installation, including the primary waterproofing membrane, flashings, insulation, filter fabric and pavers and pedestals when they are supplied or approved by SOPREMA and installed in accordance with SOPREMA *General Requirements*. All components of the waterproofing installation that are to be covered under the terms of the warranty should be expressly itemized in the Warranty or Warranty Rider.

**Total System Warranty Components :**

- a. **Membrane Warranty:** The waterproofing membrane is warranted against leaks for a period of [5] [10] [15] [20] years.
- b. **Insulation Warranty:** The insulation is to retain 80% of its original thermal value for a period of [5] [10] years.
- c. **Paver Warranty:** The pavers and pedestals system will not crack, split, spall or disintegrate as a result of freeze-thaw cycling for a period of [5] [10] years.
- 2. **Material Only Warranties:**  
Duration: 2-year, 5-year and 10-year available
- 3. **Labor and Material Warranties:**  
Duration: 5-year, 10-year, 15-year and 20-year available
- 4. **Insulation Warranties:** The Thermal value of the insulation is warranted to retain 80% of the original thermal value.  
Duration 5-year and 10-year available

\*\*\*CONTACT SOPREMA FOR WARRANTY TERMS AND CONDITIONS\*\*\*

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. The waterproofing membrane system components and accessories shall be furnished by a single-source waterproofing membrane manufacturer to ensure total system compatibility and integrity. Please note these specifications are subject to change by the manufacturer without prior notice.

Acceptable Manufacturer: **SOPREMA INC.**  
310 Quadral Dr.  
Wadsworth, OH 44281  
Phone: 800-356-3521  
Fax: 330-334-4289  
Web Site: [www.soprema.us](http://www.soprema.us)

### 2.02 WATERPROOFING MEMBRANE

- A. **Primary Waterproofing Membrane:** A modified, hot fluid applied rubberized asphalt composed of a specialty blend of refined asphalts, recycled crumb rubber, inert clay and other mineral stabilizers which meets CGSB 37.50- M89 and the following physical properties:

- a) **COLPHENE H (EV)** by SOPREMA (provides 25% post consumer recycled content)

| Properties                               | Standards                   | Colphene H   |
|--|-----------------------------|--|
| Color                                    | -                           | Black  |
| Flash Point                              | CGSB 37.50- M89             | 545°F (285°C)  |
| Low Temp. Crack Bridging                 | CGSB 37.50- M89 & ASTM D-92 | No cracking, splitting or adhesion loss                                |
| Water Vapor Permeability                 | CGSB 37.50- M89 & ASTM E-96 | 0.013 perms<br>0.6 ng/Pa(s)M <sup>2</sup>                              |
| Water Resistance 50°C (122°F) for 5 days | CGSB 37.50- M89 & ASTM D-92 | No delamination, blistering, emulsification, deterioration or pinholes |
| Water Absorption                         | CGSB 37.50- M89             | 0.12 g gain  |
| Toughness                                | CGSB 37.50- M89             | 12 J   |
| Ration of Toughness to Peak Load         | CGSB 37.50- M89             | 0.060  |
| Viscosity                                | CGSB 37.50- M89             | 6 seconds  |
| Heat Stability                           | CGSB 37.50- M89             | No change in viscosity, penetration, flow or low temperature flex      |
| Low Temperature Flexibility & Adhesion   | CGSB 37.50- M89             | No cracking, delamination or adhesion loss                             |
| Penetration (units)                      | CGSB 37.50- M89             | 80 @ 77°F (25°C)<br>156 @ 122°F (50°C)                                 |
| Flow                                     | ASTM D-1191                 | 1/8" film on 75% angle for 5 hours @ 140°F NO FLOW                     |
| Elongation                               | ASTM D-5329                 | 1000%  |
| Resiliency                               | ASTM D-3407                 | 40% min  |

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Hot-Applied Waterproofing Membrane

|                          |                              |  |
|--------------------------|------------------------------|--|
| Bond to Concrete         | ASTM D-3408                  | Pass   |
| Acid Resistance          | ASTM D-896                   | Pass 50% Nitric Acid<br>50% Sulfuric Acid                                |
| Resistance to Salt Water | ASTM D-896                   | No delamination, blistering,<br>deterioration, or emulsification         |
| Resistance to Fertilizer | ASTM-896<br>ASTM-D92 (600F°) | No delamination, blistering,<br>deterioration, or emulsification<br>Pass |
| Specific Gravity         |                              | 1.2  |
| Softening Point          | ASTM D-36                    | 181°F (83°C)   |
| Solids Content           | CGSB 37.50- M89              | 100%   |

## 2.03 ACCESSORY PRODUCTS

### A. Primer and Surface Conditioner *(One of the following must be selected, edit for project requirements)*

- Asphalt Primer conforming to ASTM D 41.  
Specified product: **ELASTOCOL 500 by SOPREMA, INC.**
- Asphalt Primer conforming to ASTM D 41, low VOC, California compliant.  
Specified product: **ELASTOCOL AQUADERE by SOPREMA, INC.**
- Asphalt Primer conforming to ASTM D 41.  
Specified product: **Alternates as approved by SOPREMA, INC.**

### B. Flashing Reinforcements *(One of the following must be selected, edit for project requirements)*

- Reinforcing Fabric: thermally bonded spunlaid polyester/nylon composite mat.  
Specified product: **SOPRA-FLASH R by SOPREMA, INC.**
- 60 mil thickness; uncured neoprene.  
Specified product: **SOPRA-FLASH UN by SOPREMA, INC.**

### C. Membrane Flashing Options *(One of the following must be selected, edit for project requirements)*

- Reinforcing Fabric: thermally bonded spunlaid polyester/nylon composite mat. (must encapsulate with Colphene H)  
Specified product: **SOPRA-FLASH R by SOPREMA, INC.**
- 60 mil thickness; uncured neoprene (embed in Colphene H or Bonding Adhesive).  
Specified product: **SOPRA-FLASH UN by SOPREMA, INC.**
- Fluid Applied Membrane: Single component polyurethane resin & polyester reinforcement  
Specified product: **ALSAN FLASHING by SOPREMA, INC.**
- Fluid Applied Membrane: Fully adhered, reinforced cold fluid applied (PMMA) poly methyl-methacrylate liquid resin flashing.  
Specified product: **ALSAN RS 230 FLASHING by SOPREMA, INC.**



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Hot-Applied Waterproofing Membrane

**D. Adhesives for Sopra-Flash UN** *(If required, edit for project requirements)*

1. Bonding Adhesive to adhere uncured neoprene flashing to substrate.  
Specified product: **APPROVED BONDING ADHESIVE by SOPREMA, INC.**
2. Splicing Adhesive to bond end laps of uncured neoprene flashings.  
Specified product: **APPROVED SPLICING ADHESIVE by SOPREMA, INC.**
3. Lap Seam Sealant to caulk lap edges.  
Specified product: **APPROVED LAP SEAM SEALANT by SOPREMA, INC.**

**E. Sealants** *(If required, edit for project requirements)*

1. Sealant at top of termination bar.  
Specified product: **SOPRAMASTIC by SOPREMA, INC.**  
Specified product: **SBS ELASTIC CEMENT by SOPREMA, INC.**  
Specified product: **SBS MASTIC by SOPREMA, INC.**  
Alternates as approved by **SOPREMA, INC.**

**F. Separation Layer** *(One of the following must be selected, edit for project requirements)*

1. 90 mil thickness; Fiberglass reinforced SBS modified bitumen.  
Specified product: **ELASTOPHENE SANDED by SOPREMA, INC.**
2. 90 mil thickness; 180 gram polyester reinforced SBS modified bitumen to be used in lieu of Elastophene Sanded.  
Specified product: **ELASTOPHENE 180 SANDED by SOPREMA, INC.**
3. 60 mil thickness; Fiberglass base sheet.  
Specified product: **MODIFIED SOPRA G by SOPREMA, INC.**
4. Granule surfaced reinforced SBS modified bitumen (finish exposed surface layer or exposed flashing)  
Specified product: **ELASTOPHENE GR (all sanded underside products) by SOPREMA, INC.**  
Specified product: **SOPRALENE GR (all sanded underside products) by SOPREMA, INC.**

*\*Selection of separation layer dependent upon specified overburden. Contact SOPREMA\**

**G. Protection Course** *(If required, edit for project requirements)*

1. 90 mil thickness; 180 gram polyester reinforced SBS modified bitumen to be used in lieu of Elastophene Sanded.  
Specified product: **ELASTOPHENE 180 SANDED by SOPREMA, INC.**
2. Solid core asphalt protection board (in addition to Elastophene Sanded).  
Specified product: **SOPRABOARD by SOPREMA, INC.**
3. Rigid extruded polystyrene insulation products.  
Specified product: **DOW Extruded Polystyrene Insulation Board** offered by **SOPREMA,**

**INC.**

4. Alternates as approved by **SOPREMA, INC.**

*\*Project conditions may allow for alternate protection considerations. **Contact SOPREMA\****

**H. Drainage Course** *(if required, edit for project requirements)*

1. **PREFABRICATED DRAINAGE BOARD:** shall be a composite drainage board consisting of a post-industrial recycled polypropylene core of fused, entangled filaments covered with a geocomposite filter fabric on its upper surface to allow water to pass into the drainage core while restricting the movement of soil particles and suitable for use in select vertical and horizontal applications.

Specified product: **SOPRADRAIN ECO VENT by SOPREMA, INC.\*\***

2. **PREFABRICATED DRAINAGE BOARD** consisting of a post-industrial recycled polypropylene core of fused, entangled filaments covered with a geocomposite filter fabric bonded to both sides.

Specified product: **SOPORADRAIN ECO 2 by SOPREMA, INC.\*\***

**\*\*NOTE: Sopradrain ECO VENT, ECO 2 exceed 40% post-industrial content and will contribute up to 2 (two) LEED points when used in conjunction with Colphene H.**

| Properties                    | Standards   | Values  |
|-------------------------------|-------------|---|
| <b>Core:</b>                  |             |   |
| Thickness                     | ASTM D-1777 | <b>ECO VENT, ECO 2 – 0.45 in.</b>                   |
| Compressive Strength          | ASTM D-1621 | <b>ECO VENT, ECO 2 - &gt;30,000 psf</b>             |
| Flow@ 3000 psf & 1.0 Gradient | ASTM D-4716 | <b>ECO VENT – 16 gpm/ft<br/>ECO 2 – 12.9 gpm/ft</b> |
| <b>Fabric:</b>                |             |   |
| Flow Rate                     | ASTM D-4491 | <b>ECO VENT, ECO 2 – 120 gpm/ft<sup>2</sup></b>     |
| Grab Tensile Strength         | ASTM D-4632 | <b>ECO VENT, ECO 2 – 120 lbs</b>                    |
| Apparent Opening Size (AOS)   | ASTM D-4751 | <b>ECO VENT, ECO 2 – 70 sieve</b>                   |

3. Rigid extruded polystyrene, insulating, drainage board (vertical applications only)  
Specified product: **DOW THERMADRY by SOPREMA, INC.**

**ALTERNATE** Prefabricated Drainage Boards may include Sopradrain 10G, 15G and 18G, **per SPECIFIER**, and as approved by **SOPREMA, INC.**

**I. Insulation** *(If required, edit for project requirements)*

1. Rigid, extruded polystyrene insulation board for waterproofing assemblies meeting ASTM C-578 Type VI or Type VII criteria.

## SOPREMA Guide Specification

### Hot-Applied Waterproofing Membrane

- a. Insulation must be 40 psi or 60 psi compressive strength when tested in accordance with ASTM D-1621 criteria.
- b. Water Absorption must be maximum 0.1% by volume when tested in accordance with ASTM C-272 criteria.
- c. The foam blowing agent used in the manufacture of the insulation must provide at least a 90% reduction in ozone potential as compared with standard CFC blowing agents. It shall be certified by the foam manufacturer to be CFC free.
- d. The insulation must offer min R-5.0 per inch at 75° F mean temperature when tested in accordance with ASTM C-518 and be warranted by the manufacturer to retain at least 80% of its published R-value for the warranty period.

Specified product: **DOW Extruded Polystyrene Insulation Board offered by SOPREMA, INC.**

*Product types: STYROFOAM<sup>®</sup> Brand Plaza Deck; and High Load 100.  
Consult SOPREMA, INC. for required product type.*

#### **J. Filter Fabric Sheet** *(If required, edit for project requirements)*

1. A needle-punched, non-woven, calendared 100% polypropylene fabric allowing high capacity drainage flow.

Specified product: **SOPRAFILTER FABRIC by SOPREMA, INC.**

#### **K. Topping Materials** *(If required, edit for project requirements)*

1. Architectural Pavers:
  - a. Type One Terrace Paver: Precast concrete pavers with beveled edged.
    1. Nominal size 24 inches by 24 inches by 2 inches thick.
    2. Compressive strength: 8500 psi. per ASTM C-140; 1,750 pounds minimum center load required.
    3. Flexural strength: 1100 psi. per ASTM C-293
    4. Water absorption: ≤ 5% per ASTM C-140.
    5. Freeze-thaw: No breakage and not more than one percent loss in dry weight after 50 cycles in accordance with ASTM C-67.
    6. Color & Finish: Contact Soprema representative.
    7. Adjustable height and fixed height pedestals as recommended or approved by SOPREMA, INC.

Specified product: **WAUSAU TILE Architectural Pavers as offered by**

**SOPREMA, INC.**

2. Concrete Topping Pour

- a. **Sopradrain ECO VENT;** >30,000 psf. Woven Core, Single Fabric
- b. **Sopradrain ECO 2;** >30,000 psf. Woven Core, Dual Fabric
- c. **Alternates, by Specifier, approved by SOPREMA, INC.**

3. Asphalt Paving

**Note to Specifier:** When asphalt paving is to be placed directly over the waterproofing, **contact SOPREMA, INC. for options and recommendations.**

**PART 3 - EXECUTION**

**3.01 SUBSTRATE INSPECTION**

- A. Prior to the installation of any new materials, the waterproofing contractor shall thoroughly examine all surfaces for any deficiencies. Should any deficiencies be determined, the Architect, Owner or General Contractor shall be given written notice and corrections will be made.
- B. The waterproofing contractor shall not proceed with the installation of the specified waterproofing assembly until all surface deficiencies and unsatisfactory conditions have been corrected.

**3.02 SUBSTRATE PREPARATION**

- A. Surfaces shall be clean, dry, smooth, and free of voids per ASTM D 5295 "Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems." Unapproved curing compound, form release agents, petroleum distillates and other contaminants are not allowed to come into contact with any approved substrate.

1. Cast in-Place Concrete; Composite Deck/ Wall

- a. All poured in place concrete shall be smooth and free of voids. All areas shall be free of honeycombs, sharp protrusions, fins, laitance, and will be free of damaged, spalled areas.
- b. If the concrete pour is not monolithic, dissimilar materials, if any, must receive reinforcing membrane.

2. Precast Concrete Decks

- a. All precast units shall be mechanically secured and all joints between units shall be grouted.
- b. All joints shall be treated with uncured neoprene, or fabric reinforcing prior to full membrane application.

SOPREMA Guide Specification  
Hot-Applied Waterproofing Membrane

3. Renovation/Tear-Off Application

- a. All existing membrane (existing waterproofing systems, coatings, coal tar pitch, and asphalt, etc.) shall be removed, restoring the substrate to a pristine condition. **Contact SOPREMA, INC.**
- b. All surface areas shall be inspected and approved by Soprema prior to the application of the new waterproofing system.

4. Other

- a. Metal, Wood, and Gypsum substrates, **Contact SOPREMA, INC.**

B. Substrate cleaning

1. Verify the substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D-4263.
  - a. The substrate shall be swept, then blown clean to remove all loose debris.
  - b. Prior to beginning the membrane installation, apply a test patch of Sopraseal H to the prepared substrate to confirm bond and adhesion.

**3.03 SYSTEM INSTALLATION**

A. Asphalt Primer/Conditioner Application

1. Apply the specified primer to all horizontal and all vertical surfaces to be waterproofed. Apply at the rate of 300 to 600 sq.ft. per gallon, depending upon the porosity of the substrate. The primer coat should be tan in color, splatter pattern.
2. Prior to application of the waterproofing system, the primer must be allowed sufficient time to thoroughly dry.

B. Hot Fluid Applied Rubber Membrane

1. Heat rubberized asphalt membrane in an oil or air jacketed melter with mechanical agitator, specifically designed for heating rubberized asphalt.
2. Membrane shall be heated to, and maintained at a temperature range between 350°F (176°C) and 400°F (204°C).
3. All rubberized asphalt membrane heated and maintained in excess of the specified temperature ranges must be discarded and removed from the site.

C. Flashing/Detailing Installation

1. All detailing and flashing shall be accomplished according to the membrane manufacturers written instructions and standard guideline details.
2. All detailing and flashing reinforcement shall be accomplished prior to the installation of the field membrane.

## SOPREMA Guide Specification

### Hot-Applied Waterproofing Membrane

3. When Alsan Flashing, Alsan RS 230 Flashing or Sopra-Flash UN is not selected as the exposed flashing system, Sopra-Flash R embedded in Colphene H must be extended vertically to height of the proposed flashing. This must be capped with one of the products listed in 2.03 Accessory Products; Paragraph F: Separation Layer.
4. For non moving joints or cracks not exceeding 1/8 inch (3mm) wide: Embed a strip of reinforcing fabric extending a minimum of 3 inches (76mm) on each side of the non-moving joint or crack, embedded in, and then coated with hot rubberized asphalt.
5. For non moving joints or cracks exceeding 1/8 inch (3mm) wide: Embed a strip of uncured neoprene or other specified reinforcement (not fabric), extending a minimum of 3 inches (76mm) on each side of the non-moving joint or crack, embedded in, and then coated with hot rubberized asphalt.
6. Substrate board joints, blemishes, and other imperfections shall be pre-detailed with membrane and appropriate reinforcing prior to the application of the field membrane.
7. All drains require uncured neoprene (or approved alternate) reinforcement properly installed, extending a minimum of 6 inches past the drain bowl onto the surrounding substrate. Drain clamping rings must be properly secured while hot rubberized asphalt is still free flowing. Refer to membrane manufacturer details for specific installation instructions.
8. Refer to membrane manufacturer's installation guidelines for all detail flashing requirements.

#### D. Membrane Application

1. Apply hot rubberized asphalt to the substrate and adjoining surfaces of previously installed flashing reinforcement and detailing. Apply a monolithic coat of hot rubberized asphalt, 90 mil (approximately 2.3 mm) thick; immediately embed a layer of reinforcing fabric, overlapping sheets 1 inch to 2 inches (25.4 mm – 50.8 mm) insuring membrane is applied between sheets at laps. Follow with an additional monolithically applied 125 mil uniform, (approximately 3.2 mm) thick layer of hot rubberized asphalt membrane, providing a reinforced, seamless membrane averaging 215 mils (approximately 5.5 mm) total thickness (180 mils minimum).

### 3.04 SEPARATION LAYER INSTALLATION

#### A. Separation layer shall be immediately installed as follows:

1. Embed the separation layer into the waterproofing membrane detailed above, while it is still hot, to insure full adhesion.
2. Install this layer in conjunction with the 125 mil top coating previously detailed, insuring there are no dry lap edges. Overlap separation layer a minimum of 2 inches (50.8 mm) at all side laps and 4 inches (102 mm) at all end laps. If rigid insulation board materials are used they shall not be overlapped, but will be embedded in the still hot membrane to achieve full adhesion.
3. It is recommended that the completed waterproofing assembly be covered with subsequent topping materials as soon as possible to avoid any unnecessary damage to the newly installed waterproofing system. Topping materials must be installed no later than 30 days

from completion of the waterproofing assembly.

### 3.05 FLOOD TEST

- A. Flood Testing: Flood test each deck area for leaks, according to recommendations in ASTM D-5957, *Standard Guide for Flood Testing Horizontal Waterproofing Installations*. After completing and protecting waterproofing, but before overlaying construction is placed, install temporary containment assemblies, plugging all drains and flood with water.
  - 1. Flood entire area to a minimum depth of 2 inches for a period of 48 hours.
- B. **VERIFY** that the structure can support the dead load weight of the areas to be water tested before flooding.
- C. After flood testing, repair any leaks in the waterproofing system; repeat flood test.
- D. In lieu of flood testing, Electronic Breach Detection is an acceptable alternative, Contact **SOPREMA, INC.**
- E. Owner may engage an independent testing agency to observe flood testing procedures and results.

### 3.06 PROTECTION OR DRAINAGE COURSE/INSULATION/PAVER PLACEMENT

- A. General
  - 1. Examine all areas to receive topping materials. Insure that all areas are free from defect and successfully completed a flood test. Verify that all components of the system are properly installed, fully completed, undamaged, and intact.
  - 2. The protection course, drainage course, insulation, and all other topping materials shall be installed as each area is completed. Adhered as required with HV-III Adhesive, or other methods as approved by **SOPREMA, INC.**
- B. Protection Course
  - 1. Multi-ply, semi-rigid asphaltic board composed of a mineral fortified asphaltic core formed between two asphaltic saturated fiberglass liners.
  - 2. All vertical flashings shall receive one layer spot adhered with hot rubberized asphalt.
  - 3. Install protection course to lay flat. Cut to fit all penetrations, curbs and perimeters within 3/4 inch (19 mm). Spot adhere as required with hot rubberized asphalt.
- C. Drainage Course Installation (if required)
  - 1. Install the specified drainage course directly on horizontal and vertical surfaces with the filter fabric up in accordance with the membrane manufacturer's written instructions.
  - 2. Properly position drainage course, carefully cutting and fitting panels to fit the surface. Cut and snugly fit the drainage course at all perimeters, curbs and penetrations, Following the membrane manufacturer's installation procedures.
  - 3. Adhere each geotextile fabric overlap edge to adjacent drainage courses with an adhesive acceptable to the membrane manufacturer.

SOPREMA Guide Specification  
Hot-Applied Waterproofing Membrane

D. Insulation Placement (if required)

1. Install one or more layers of rigid insulation to required thickness and/or R-value. Stagger all joints, cut and fit to within 3/4 inch (19 mm) of all projections, perimeter walls and penetrations. Insulation is to be loose laid and tightly butted with joints not greater than 3/8 inch (9.5 mm). One layer Sopradrain Mat (Air Layer) maybe required.
2. Multi-layer insulation applications require the bottom layer of insulation to be the thickest layer and shall be a minimum of 2" thick (50.8 mm). All layers shall be loose laid with the joints of the second layer staggered and offset from all joints of the preceding layer. Each successive layer shall be offset from the underlying layer(s).
3. Vertical insulation applications shall be spot adhered to the protection layer with appropriate adhesive or additional hot rubberized asphalt membrane.

E. Architectural Paver Placement (if required)

1. Architectural pavers will be installed on approved paver tab or pedestal system in accordance with the pedestal system manufacturer's specifications, recommendations, project requirements, and as defined in the architectural layout.
2. Ensure the finished paver surface is spaced and butted properly, level and free from tripping hazards.
3. Fabric can be installed under full paver systems to mask insulation color seen at joints between pavers. Black fabric shall not be left exposed in temperatures greater than 90° F.

**3.07 JOB COMPLETION**

- A. The Waterproofing Contractor and the Manufacturer's Representative shall inspect the completed waterproofing assembly. All defects as discovered shall be corrected.
- B. Clean all adjacent surfaces using cleaning agents and procedures approved by the membrane manufacturer of the affected systems, products, or finishes.
- C. Remove from the premises all rubbish, debris, and surplus materials resulting from the work.

**END OF SECTION**





# COLPHENE H

COLPHENE H (HOT APPLIED RUBBERIZED ASPHALT)

Order No. W402\*

## DESCRIPTION

COLPHENE H is an environmentally, hot applied, rubberized asphalt formulated to provide a monolithic fully bonded waterproofing membrane. It is hot poured in a single or fabric reinforced application. COLPHENE H is composed of a specially selected blend of refined asphalts, synthetic rubber and mineral stabilizers and contains 25% post consumer recycled content. It is modified with additives to promote adhesion and improve low temperature flexibility.

## USE & APPLICATION

COLPHENE H is designed to be used in horizontal and vertical waterproofing of plazas and decks, planters, tunnels, underground vaults, bridges, foundation walls and parking garages. COLPHENE H is typically applied to concrete.

COLPHENE H is softened in a double-jacketed, hot air or oil bath melter with mechanical agitation, specifically designed for heating rubberized asphalt. COLPHENE H should be brought to a constant temperature of 350° F to 400° F (176.6° to 204.4° C). Take caution as to not overheat COLPHENE H. Overheating will cause COLPHENE H to cross-link and line the walls of the melter, adversely affecting the equipment and the material performance properties.

## FEATURES & BENEFITS

- Monolithic, seamless application
- Excellent adhesion properties restricts lateral movement of water beneath membrane
- Environmentally friendly
- Conforms to irregular surfaces and accommodates minor deck flaws
- Bridges non-working cracks up to 1/16" (1.5 mm) in width
- Cold flow properties allow for self healing of minor construction damage
- 100% solids content with no solvents and no VOC restrictions
- May contribute to LEED credits

## COVERAGES

| Product/<br>Property         | Colphene H   |
|------------------------------|--|
| Description                  | hot applied rubberized asphalt   |
| Installation                 | rubber squeegee  |
| Application - Non-reinforced | 180 mils (4.5 mm) @ 1.2 lbs/ft <sup>2</sup> (5.86 kg/m <sup>2</sup> )  |
| Application - Reinforced     | 90 mils (2.25 mm) @ 0.6 lbs/ft <sup>2</sup> (4.39 kg/m <sup>2</sup> )<br>one layer of Sopra-Flash R<br>125 mils (3.1 mm) @ 0.9 lbs/ft <sup>2</sup> (2.93 kg/m <sup>2</sup> ) |
| Protection Sheet             | Elastophene Sanded (typical)   |



## PHYSICAL PROPERTIES

| Property                                   | Test Method                | Test Value  | Test Result |
|--|----------------------------|---|-------------|
| Flash Point                                | ASTM D-92                  | 420° F (200° C)   | Pass        |
| Low Temperature Crack Bridging Capacity    | CGSB-37.50-M89 & ASTM D 92 | No cracking, splitting, or adhesion loss                                | Pass        |
| Water Vapor Permeability                   | ASTM E 96                  | .013 PERMS  | Pass        |
| Water Resistance 50° C (122° F) for 4 days | CGSB-37.50-M89 & ASTM D 92 | No delamination, blistering, emulsification, deterioration, or pinholes | Pass        |
| Water Absorbtion                           | CGSB-37.50-M89             | 0.12 g gain   | Pass        |
| Toughness                                  | CGSB-37.50-M89             | 12 J  | Pass        |
| Ratio of Toughness to Peak Load            | CGSB-37.50-M89             | 0.060 minimum   | Pass        |
| Viscosity                                  | CGSB-37.50-M89             | 6 seconds   | Pass        |
| Heat Stability                             | CGSB-37.50-M89             | No change in viscosity, penetration, flow, or low temperature flex      | Pass        |
| Low Temperature Flexibility & Adhesion     | CGSB-37.50-M89             | No cracking, delamination, or adhesion loss                             | Pass        |
| Penetration (units)                        | CGSB-37.50-M89             | 80 @ 77° F (25 °C) / 155 @ 122° F (50 °C)                               | Pass        |
| Softening Point                            | ASTM D 36                  | 181° F (83° C)  | Pass        |
| Solids Content                             | CGSB-37.50-M89             | 100%  | Pass        |
| Specific Gravity                           | -                          | 1.18 - 1.33   | -           |

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations.

## PACKAGING

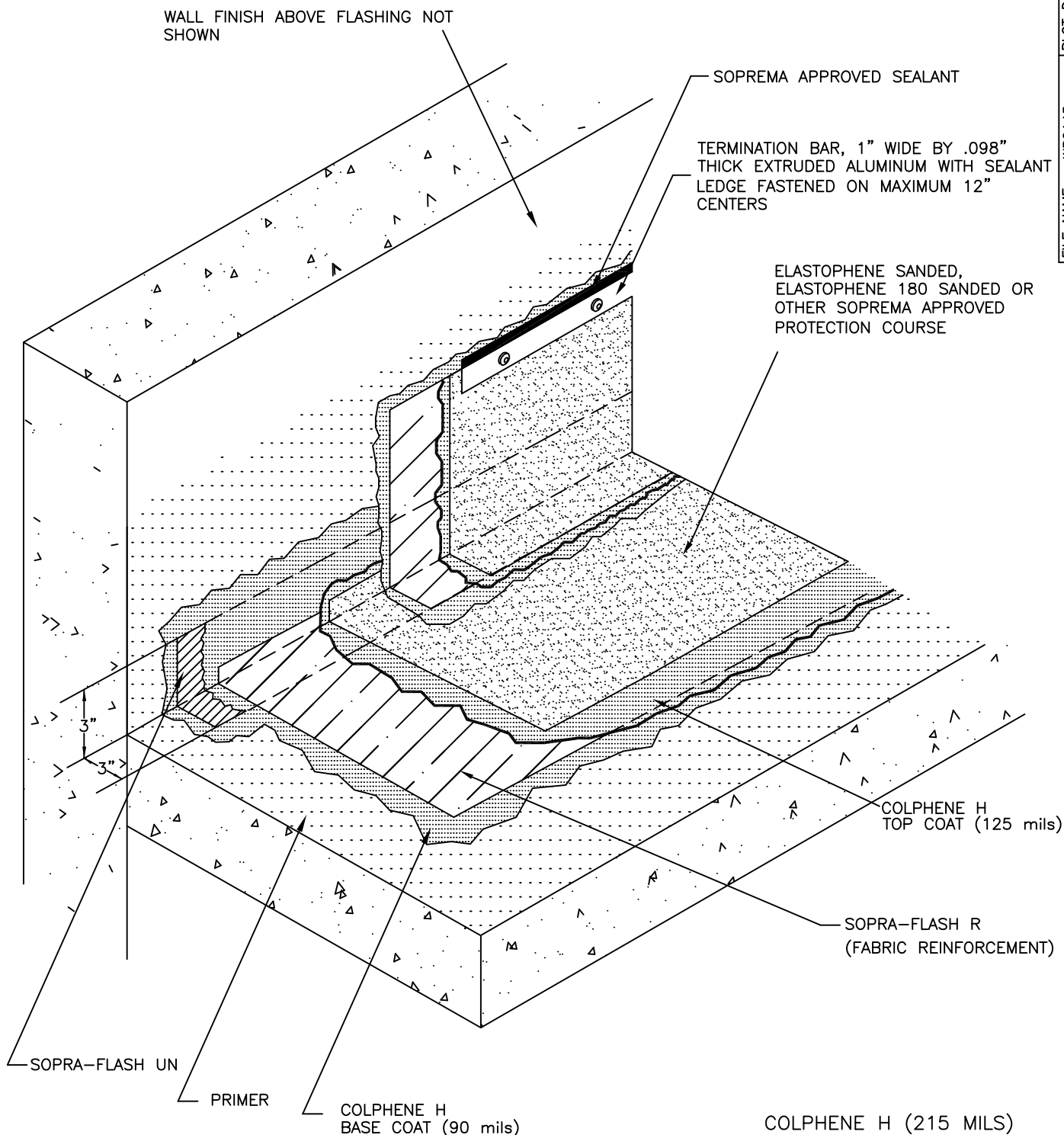
Standard 35 pound boxes.

## LIMITATIONS

- Do not overheat COLPHENE H; membrane temperatures are not to exceed 420° F (200° C)
- Do not melt COLPHENE H in direct fired, single-wall kettles
- Do not install COLPHENE H over lightweight concrete without prior written permission from the Soprema Technical Department
- If COLPHENE H will come in direct contact with coal tar pitch, contact Soprema
- COLPHENE H should not be left exposed; it must be protected by an appropriate overlay

## WARRRRANTY


Contact your local Soprema representative for project warranty offerings.

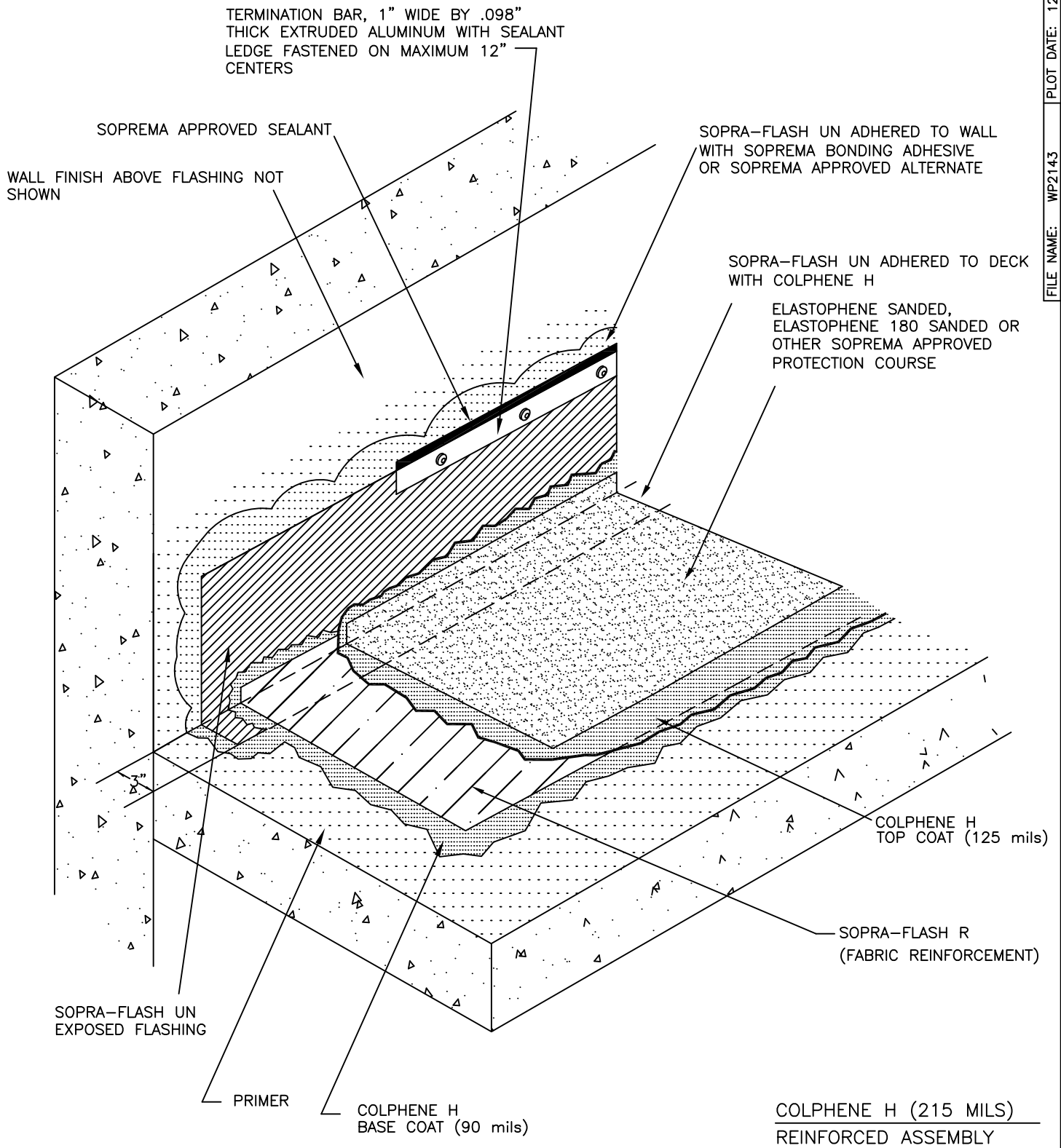


COLPHENE H (215 MILS)  
REINFORCED ASSEMBLY

NOTES:

1. SOPRA-FLASH UN TO BE USED AT ALL ANGLE TRANSITIONS. CONTACT SOPREMA FOR APPROVED EXCEPTIONS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.

|  |      |                       |           |
|--|------|-----------------------|-----------|
|  |      | 310 QUADRAL DRIVE     |           |
|  |      | WADSWORTH, OHIO 44281 |           |
|  |      | (330) 334-0066        |           |
| TITLE<br>BASIC DESIGN  |      |                       |           |
| SCALE  | NONE | DWN<br>TM             | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |           |
| HRW-100  |      | 12/11/09              |           |
|  |      |                       | REV<br>0  |

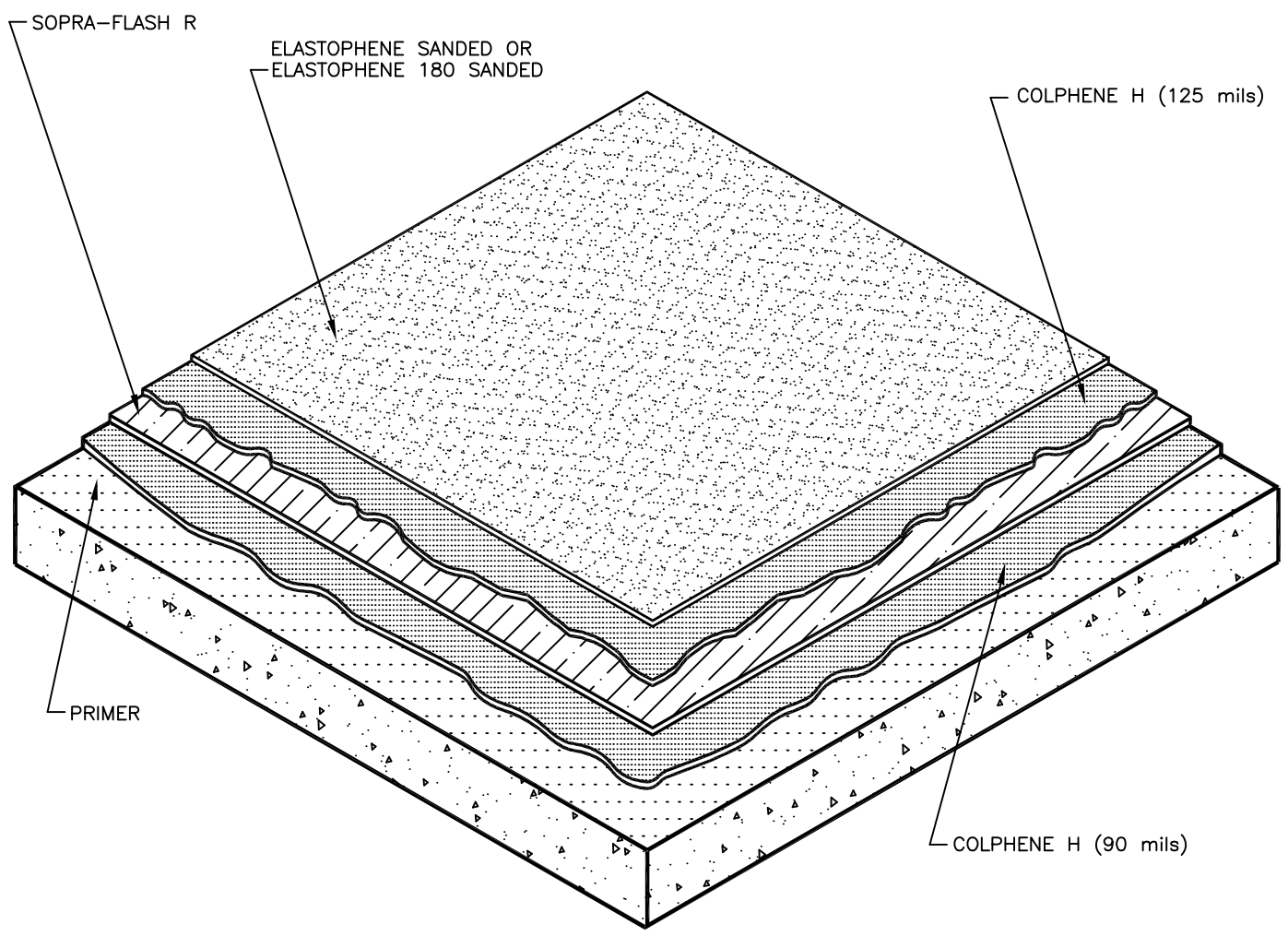


NOTES:

1. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.


|  |           |  |                           |
|--|-----------|--|---------------------------|
|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           |  |                           |
| TITLE<br>SOPRA-FLASH UN EXPOSED FLASHING |           |  |                           |
| SCALE<br>NONE                            | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>12/11/09 |
| DRAWING NUMBER<br>HRW-100B               |           |  | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

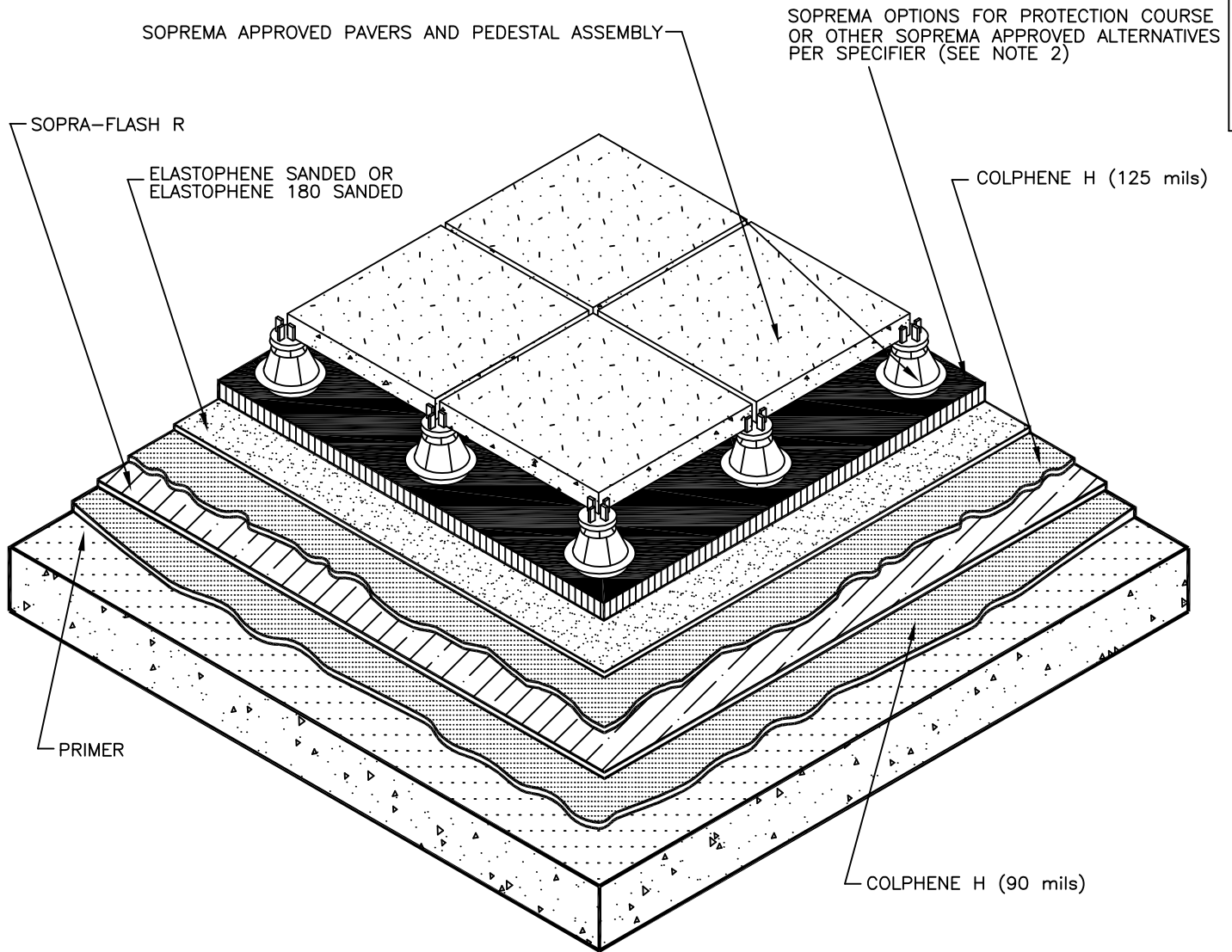


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.

|  |      |                        |           |
|--|------|------------------------|-----------|
|  |      | 310 QUADRAL DRIVE      |           |
|  |      | WADSWORTH, OHIO 44281  |           |
|  |      | (330) 334-0066         |           |
| TITLE COLPHENE H-REINFORCED ASSEMBLY (215mils)                                       |      |                        |           |
| SCALE  | NONE | DWN<br>TM              | CHK<br>JP |
|  |      | APPROVAL DATE 11/17/09 |           |
| DRAWING NUMBER HRW-102   |      |                        | REV<br>0  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

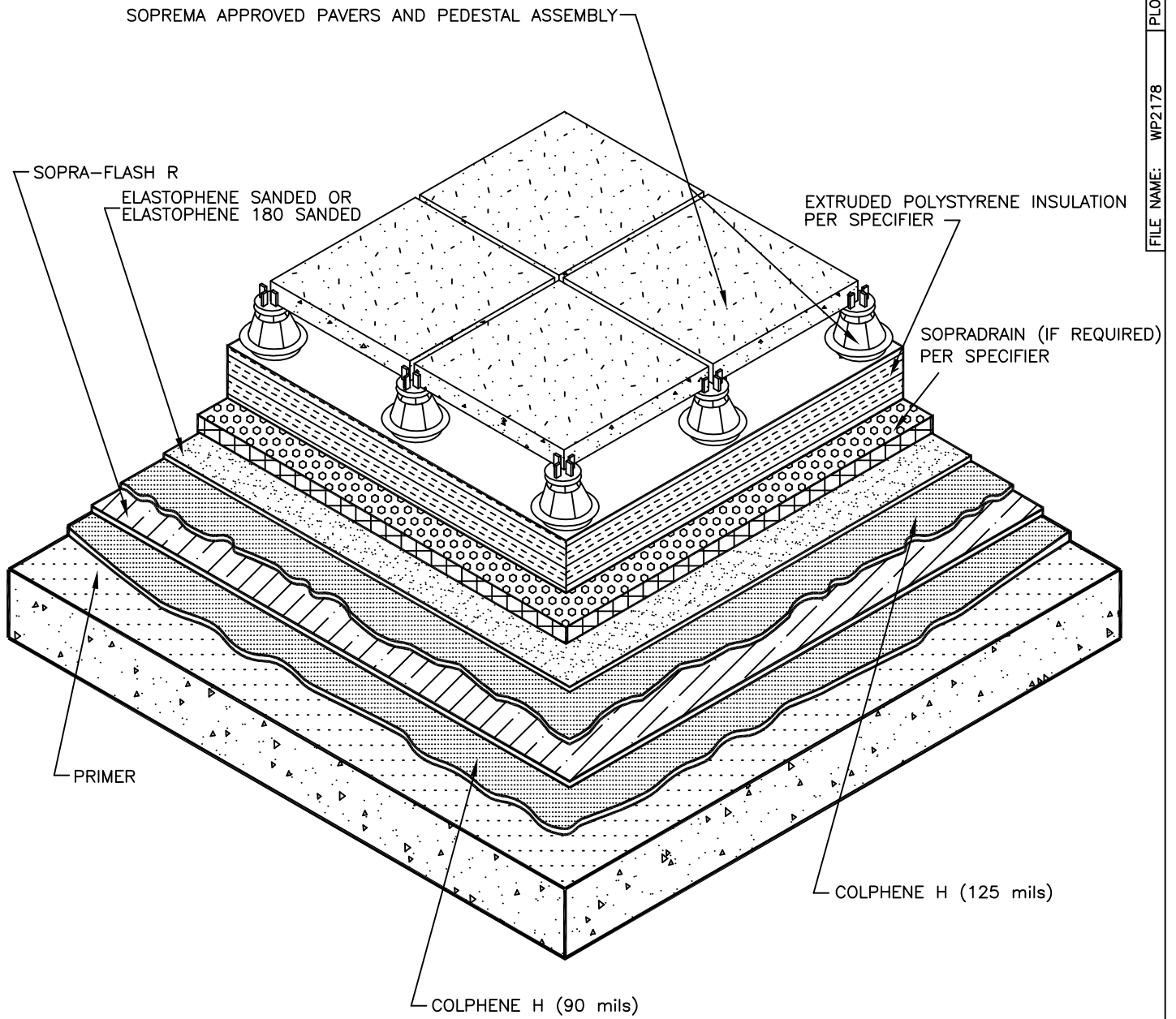
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|                              |      |        |        |                        |
|------------------------------|------|--------|--------|------------------------|
| TITLE COLPHENE H WITH PAVERS |      |        |        |                        |
| SCALE                        | NONE | DWN TM | CHK JP | APPROVAL DATE 11/20/09 |
| DRAWING NUMBER HRW-103       |      |        |        | REV 0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

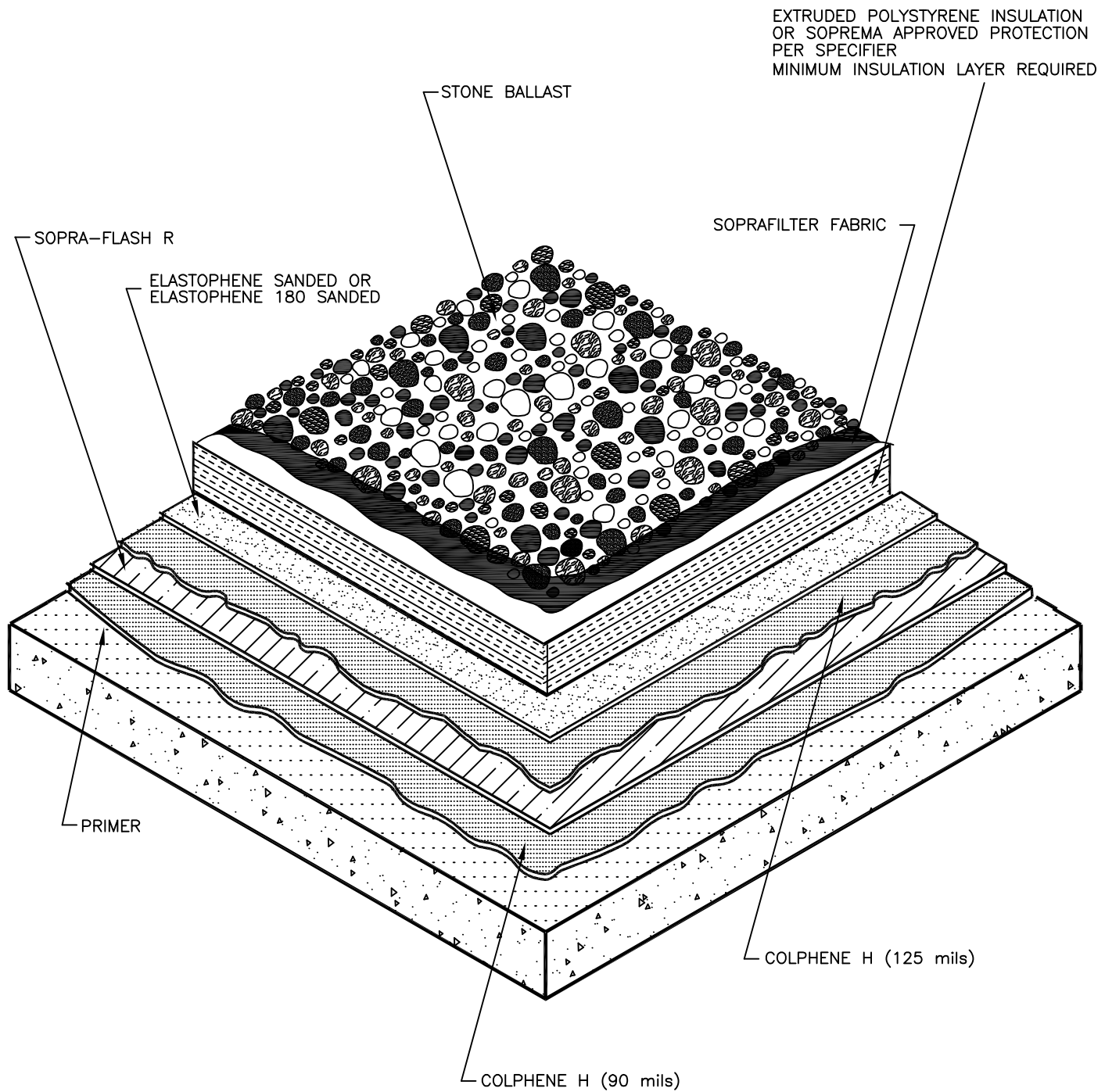
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|  |      |        |        |                        |
|--|------|--------|--------|------------------------|
| TITLE COLPHENE H WITH PAVERS (INSULATED) |      |        |        |                        |
| SCALE                                    | NONE | DWN TM | CHK JP | APPROVAL DATE 11/20/09 |
| DRAWING NUMBER HRW-104                   |      |        |        | REV 0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS AND REQUIRED MINIMUM INSULATION LAYER

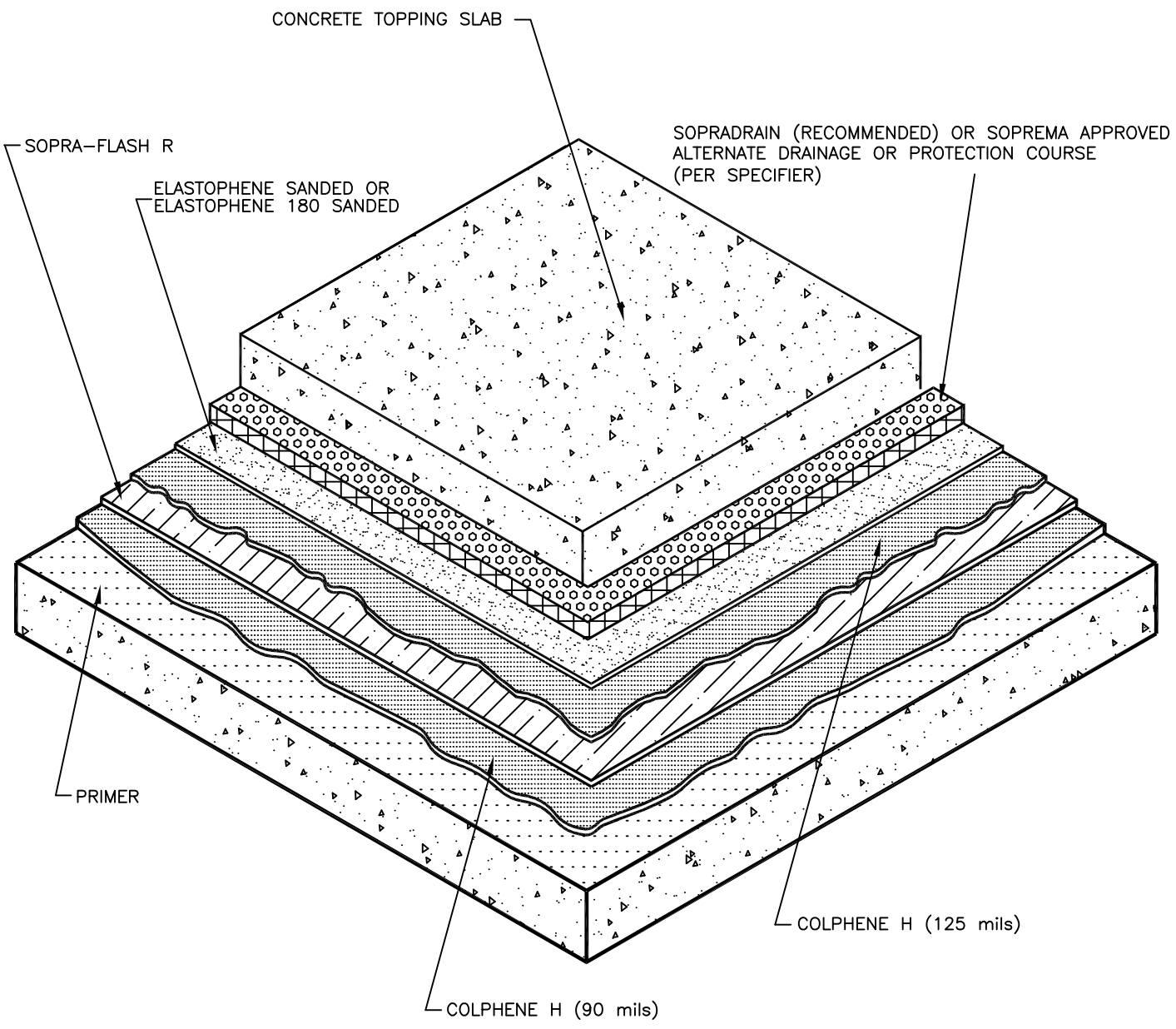


310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|                                     |      |           |           |                           |
|-------------------------------------|------|-----------|-----------|---------------------------|
| TITLE COLPHENE H WITH STONE BALLAST |      |           |           |                           |
| SCALE                               | NONE | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>11/20/09 |
| DRAWING NUMBER<br>HRW-105           |      |           |           | REV<br>0                  |


\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



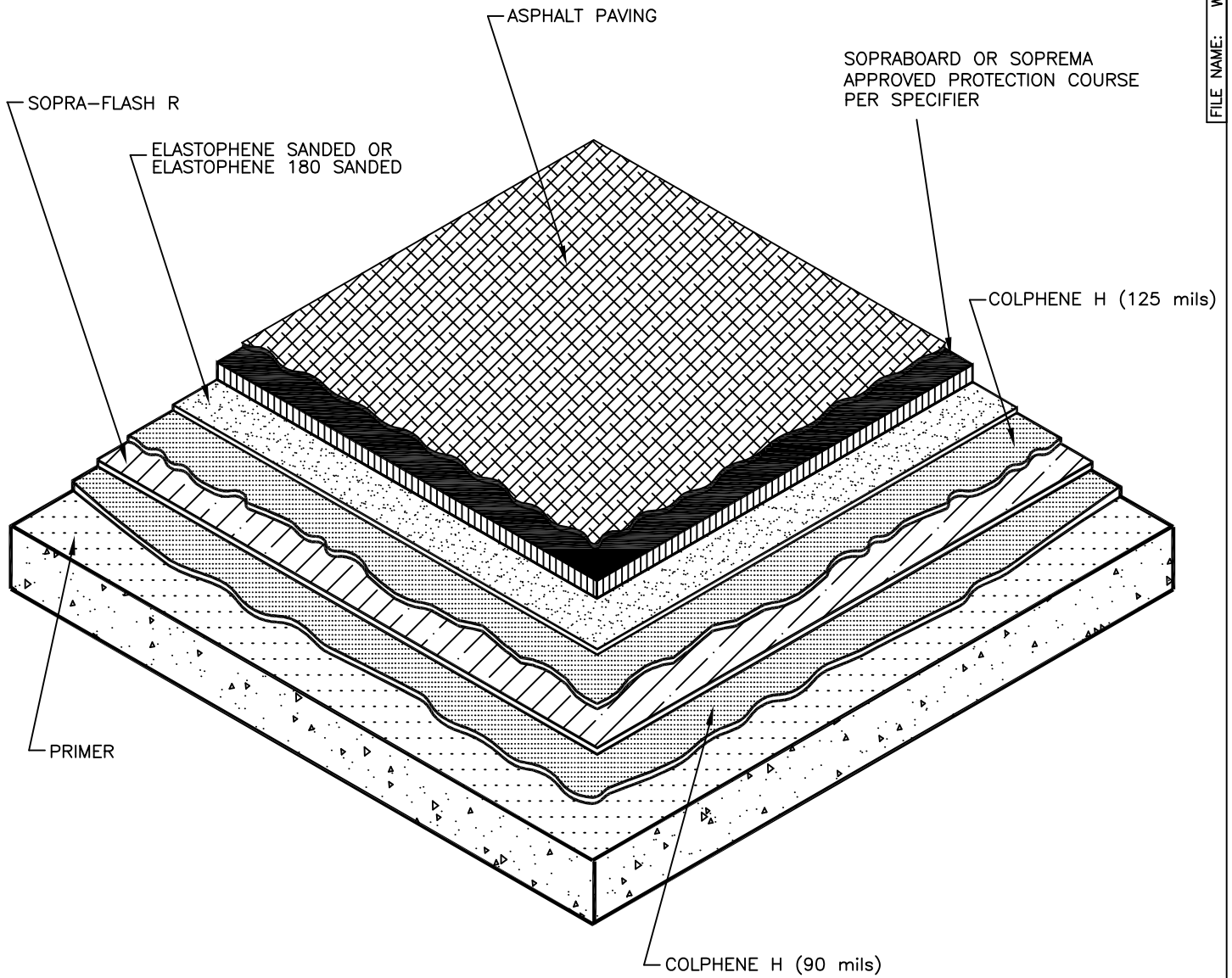


NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS
3. INSULATION LAYER OPTIONAL PER SPECIFIER
4. ADDITIONAL DRAINAGE LAYER ABOVE INSULATION OPTIONAL PER SPECIFIER

|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>COLPHENE H WITH CONCRETE TOPPING SLAB                                       |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>11/20/09 |
| DRAWING NUMBER<br>HRW-106  |           |                       | REV<br>0                  |

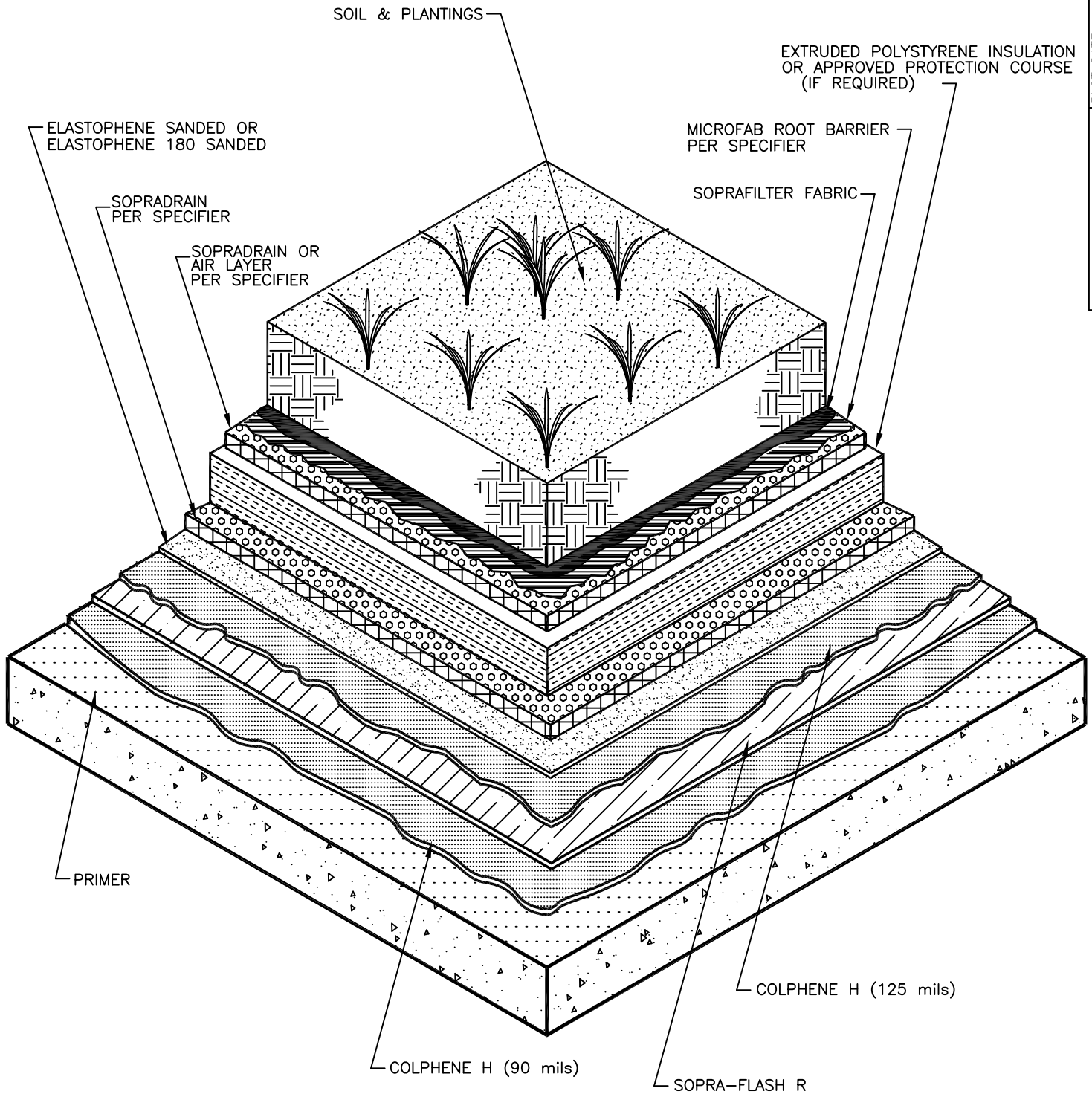
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



- NOTES:
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
  2. FOR RECOMMENDED APPLICATION TEMPERATURE OF ASPHALT TOPPING, CONTACT SOPREMA.

|  |      |                       |           |
|--|------|-----------------------|-----------|
|  |      | 310 QUADRAL DRIVE     |           |
|  |      | WADSWORTH, OHIO 44281 |           |
|  |      | (330) 334-0066        |           |
| TITLE COLPHENE H WITH ASPHALT PAVING   |      |                       |           |
| SCALE  | NONE | DWN<br>TM             | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |           |
| HRW-107  |      | 11/20/09              |           |
|  |      |                       | REV<br>0  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|   |         |           |           |                           |
|---|---------|-----------|-----------|---------------------------|
| TITLE BASIS OF DESIGN FOR VEGETATED ROOFS |         |           |           |                           |
| SCALE                                     | NONE    | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>11/20/09 |
| DRAWING NUMBER                            | HRW-108 |           |           | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

ELASTOPHENE SANDED, ELASTOPHENE 180  
SANDED OR OTHER SOPREMA APPROVED  
PROTECTION COURSE

COLPHENE H (125 mils)  
TOP COAT

SOPRA-FLASH R

COLPHENE H (90 mils)  
BASE COAT

6" MIN. (15cm)

PRIME CONCRETE DECK AS REQUIRED  
SUBSTRATE SUMPED TO DRAIN

SOPRA-FLASH UN TARGET PLY CENTERED OVER DRAIN  
MIN. 6" PAST CLAMPING RING ON ALL SIDES.

APPROVED DRAIN ASSEMBLY

#### NOTES:

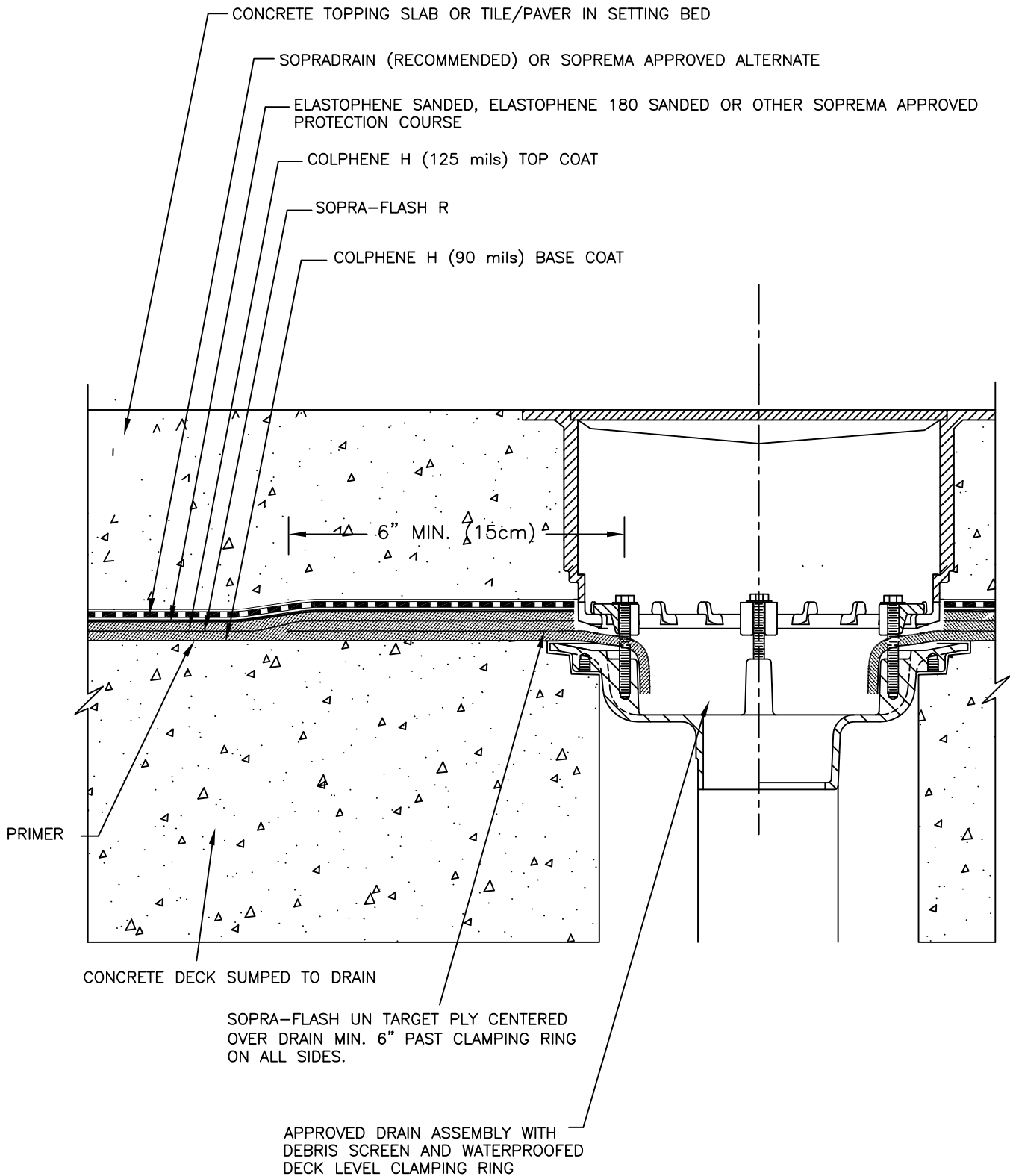
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS
3. DRAIN ASSEMBLIES REQUIRE A CLAMPING AT THE WATERPROOFING DECK LEVEL



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066


|                                 |           |           |                           |          |
|---------------------------------|-----------|-----------|---------------------------|----------|
| TITLE<br>TYPICAL DRAIN FLASHING |           |           |                           |          |
| SCALE<br>NONE                   | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>11/19/09 |          |
| DRAWING NUMBER<br>HRW-109       |           |           |                           | REV<br>0 |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



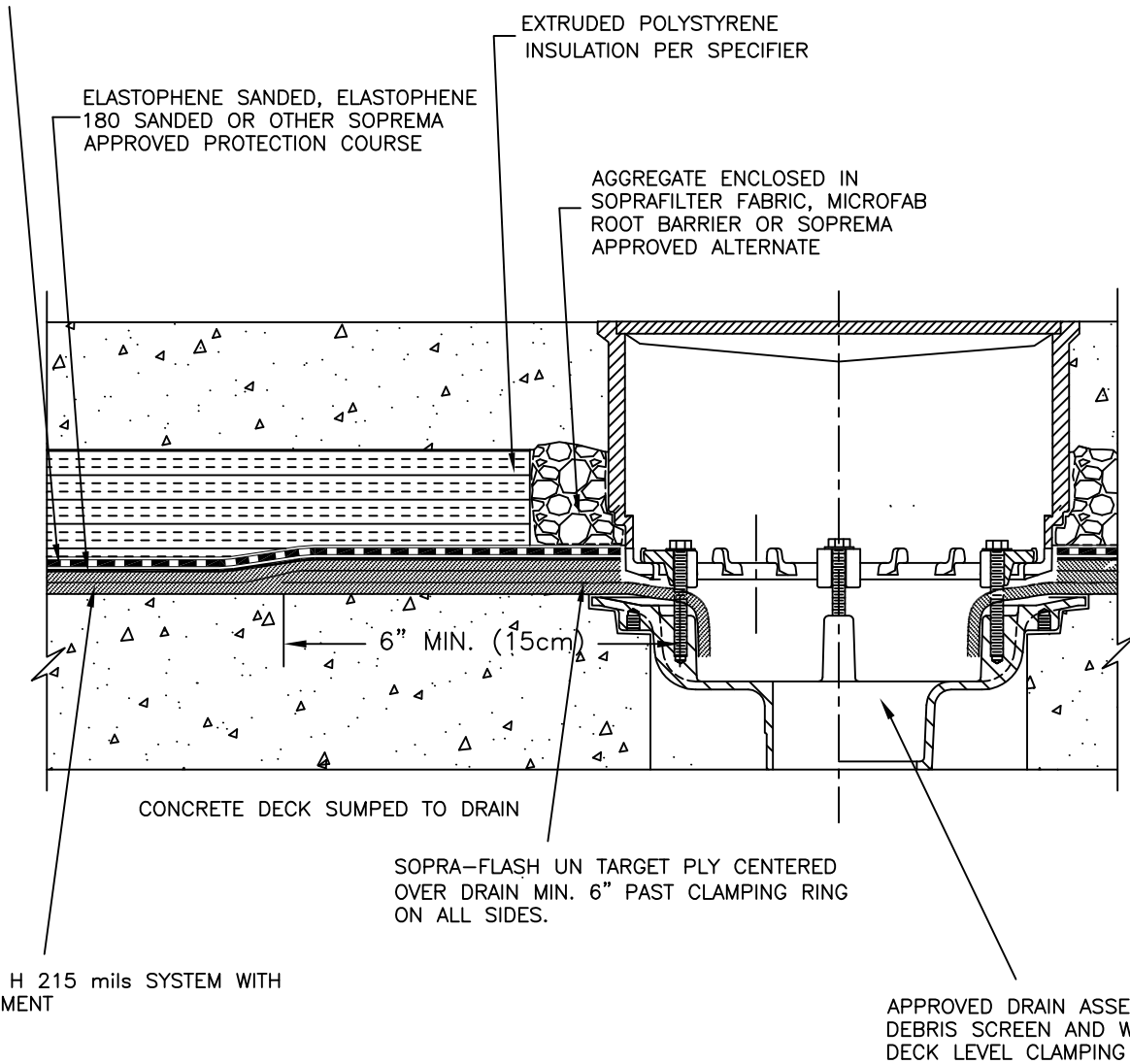
NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. CLAMPING RING MUST BE INSTALLED WHILE MEMBRANE IS STILL HOT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

|  |           |  |                           |
|--|-----------|--|---------------------------|
|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           | TITLE<br>MULTI-STAGE (BI-LEVEL) DRAIN                        |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>11/19/09 |
| DRAWING NUMBER<br>HRW-200  |           |  | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.


SOPRADRAIN (RECOMMENDED) OR SOPREMA  
APPROVED ALTERNATE



## INSULATION & TOPPING SLAB

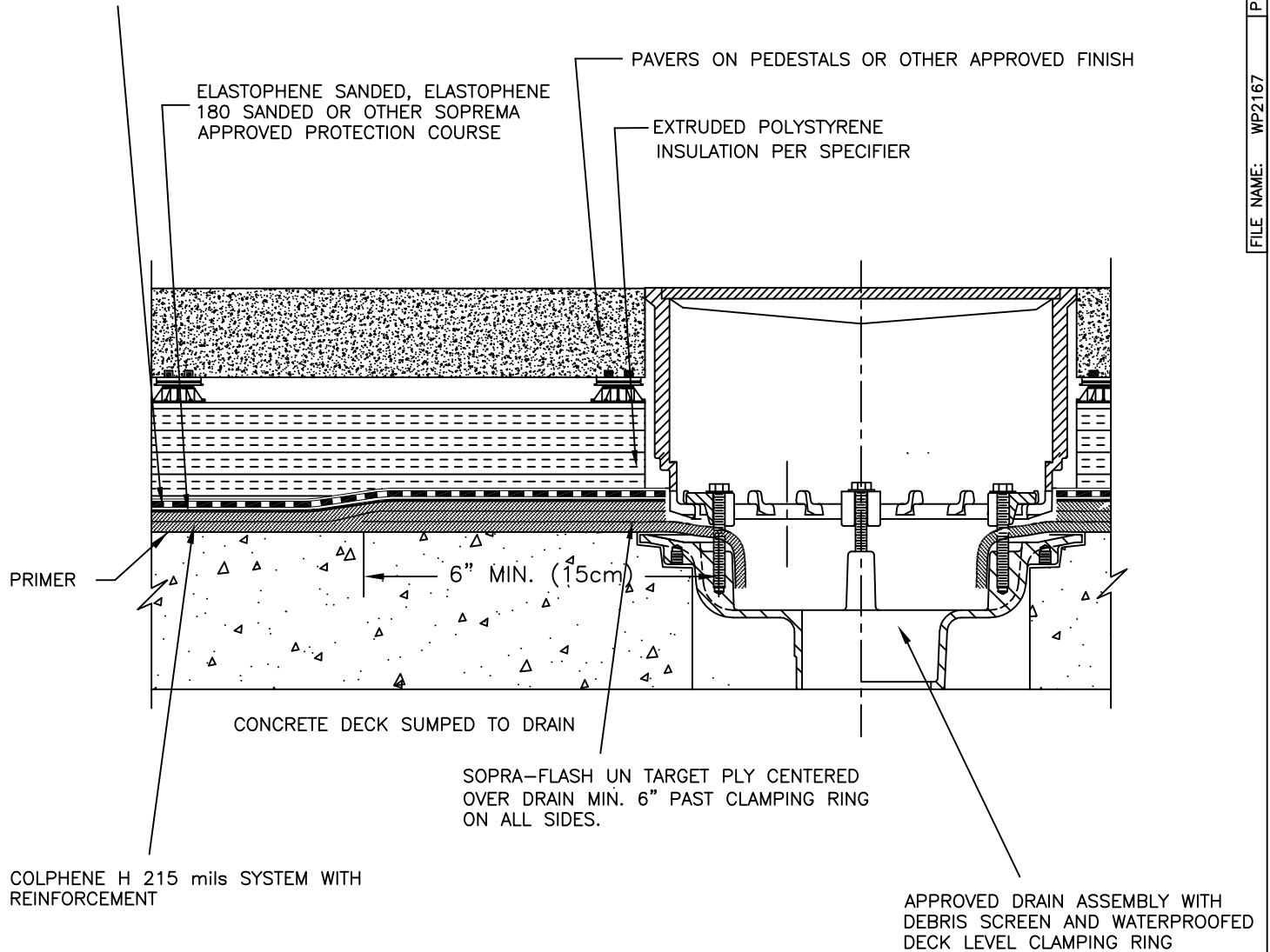
### NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. CLAMPING RING MUST BE INSTALLED WHILE MEMBRANE IS STILL HOT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

|  |           |  |                           |
|--|-----------|--|---------------------------|
|  <b>SOPREMA</b><br>WATERPROOFING DIVISION |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
| TITLE<br>MULTI-STAGE (BI-LEVEL) DRAIN  |           |  |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>12/29/09 |
| DRAWING NUMBER<br>HRW-201A   |           |  | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.


SOPRADRAIN (RECOMMENDED) OR SOPREMA  
APPROVED ALTERNATE



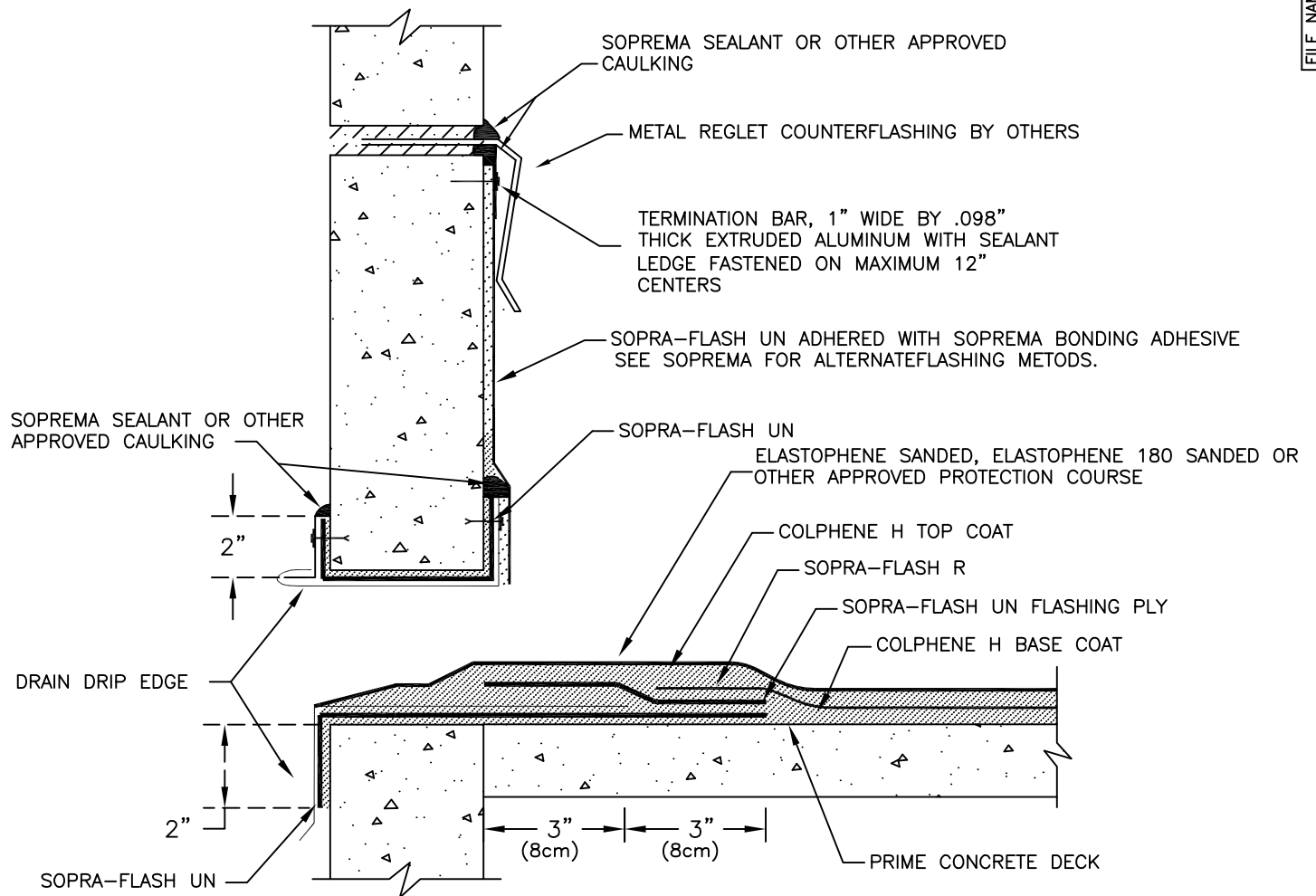
## INSULATION & PAVERS

### NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. CLAMPING RING MUST BE INSTALLED WHILE MEMBRANE IS STILL HOT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>MULTI-STAGE (BI-LEVEL) DRAIN                        |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>12/29/09                                    |           |
| HRW-201B   |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

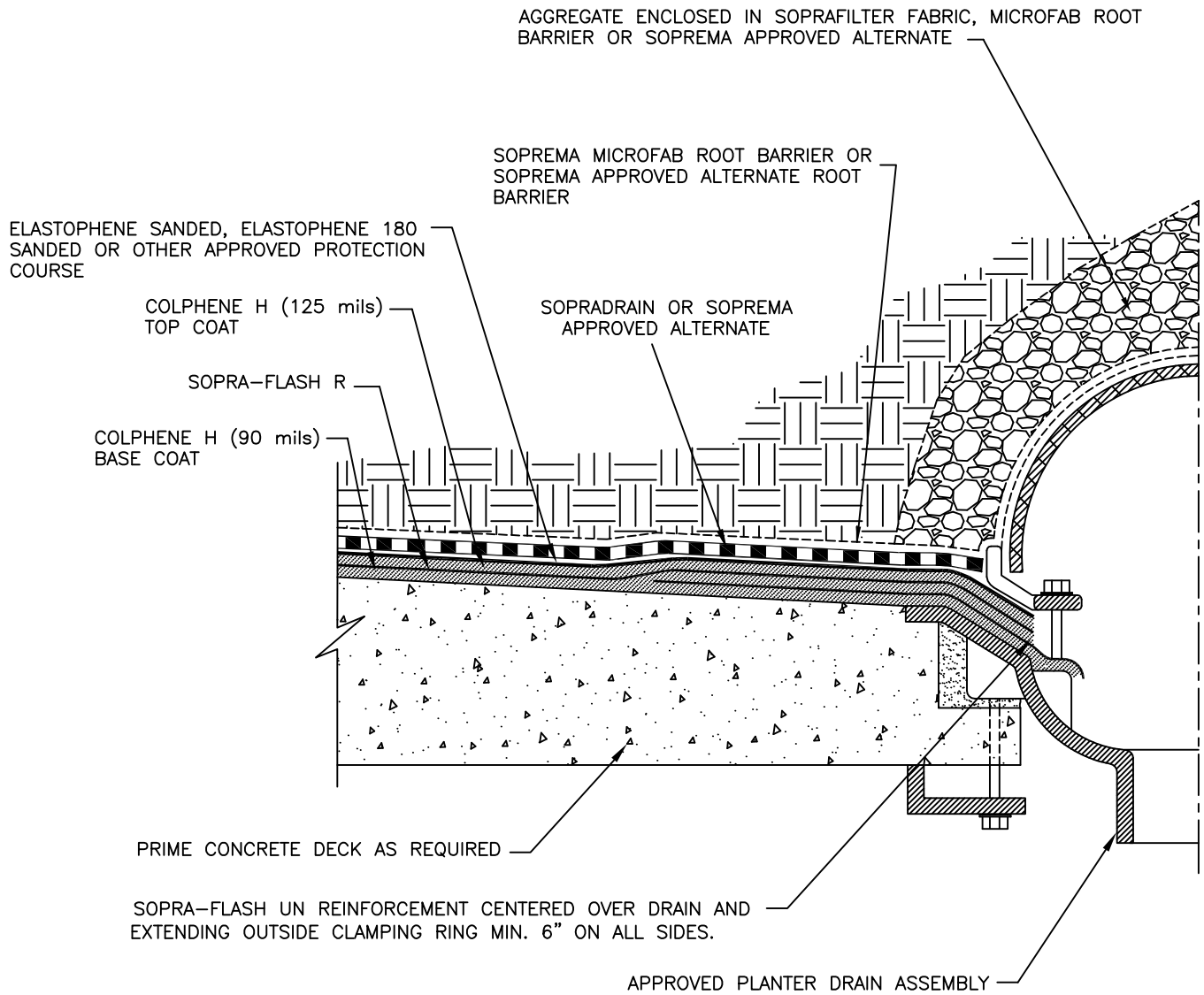


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.


|  |     |                       |               |
|--|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| THRU-WALL DRAIN FLASHING   |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 12/11/09      |
| DRAWING NUMBER   |     |                       | REV           |
| HRW-202  |     |                       | 0             |



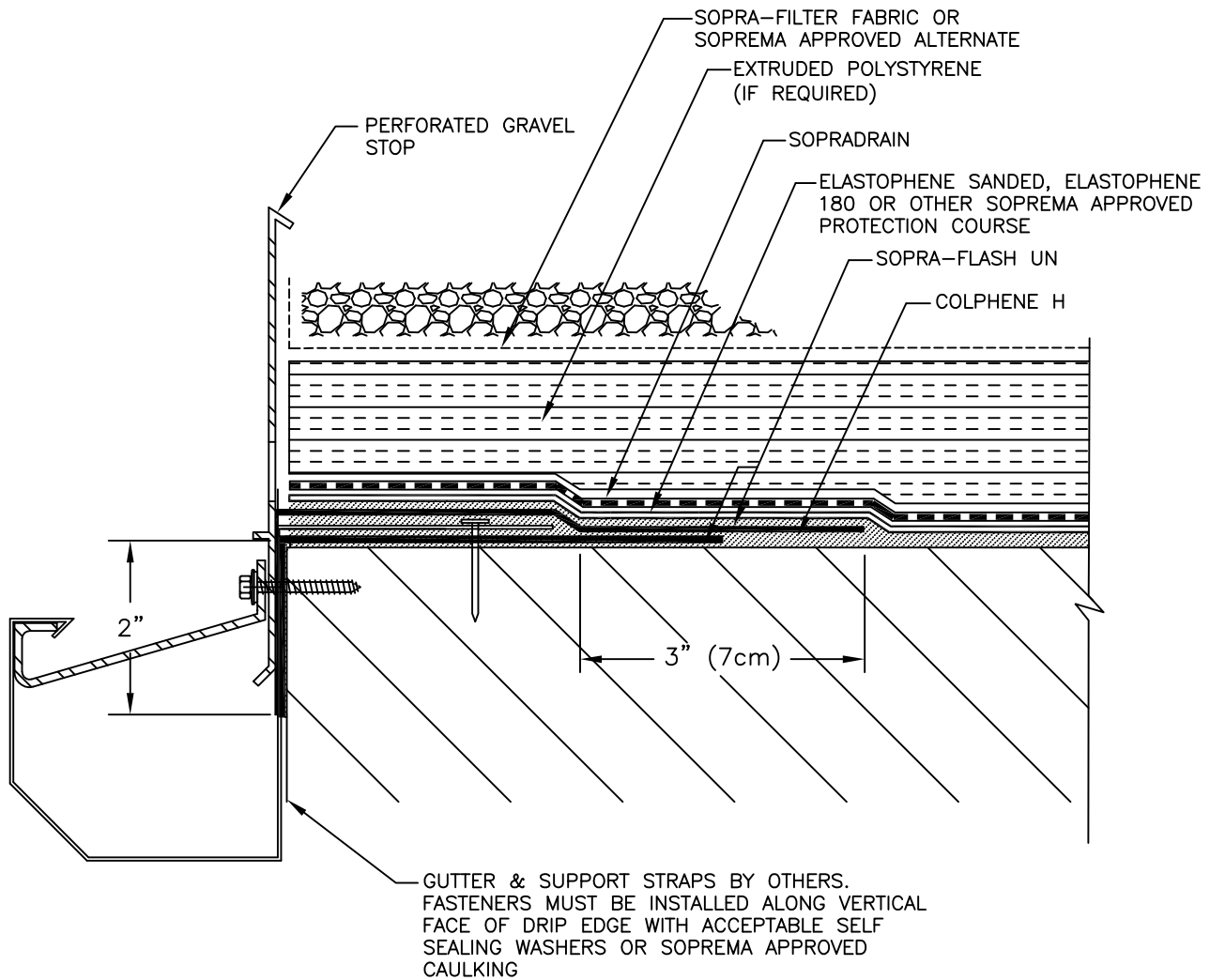


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.


|  |     |                       |               |
|--|-----|-----------------------|---------------|
| <br><b>SOPREMA®</b><br>WATERPROOFING DIVISION |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| TYPICAL PLANTER DRAIN DETAIL   |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 11/23/09      |
| DRAWING NUMBER   |     |                       | REV           |
| HRW-203  |     |                       | 0             |

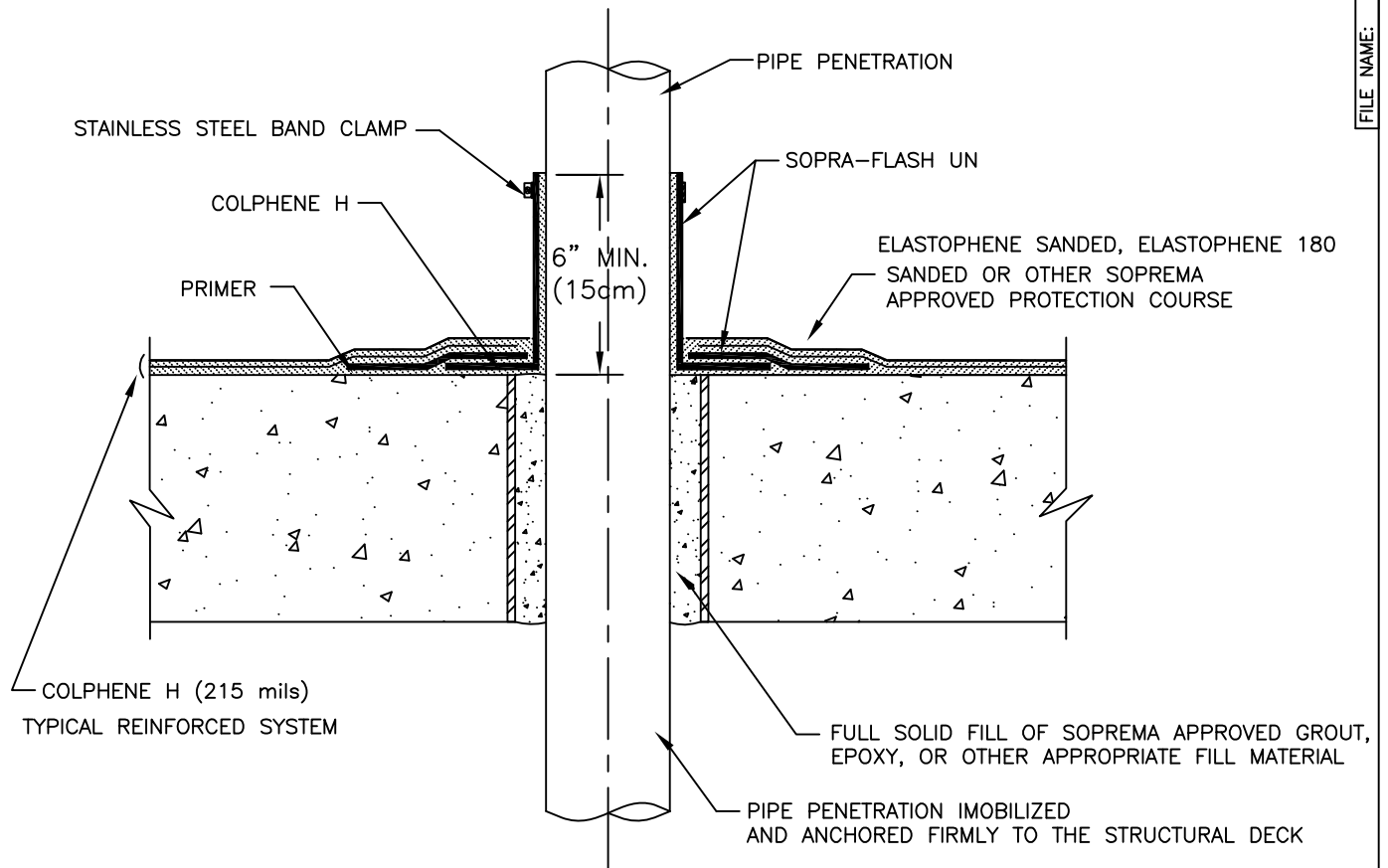
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



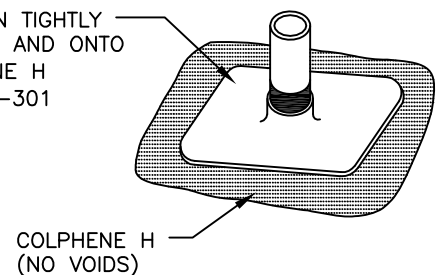
NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

|  |      |                       |           |
|--|------|-----------------------|-----------|
|  |      | 310 QUADRAL DRIVE     |           |
|  |      | WADSWORTH, OHIO 44281 |           |
|  |      | (330) 334-0066        |           |
| TITLE<br>TYPICAL GUTTER FLASHING DETAIL  |      |                       |           |
| SCALE  | NONE | DWN<br>TM             | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |           |
| HRW-204  |      | 11/23/09              |           |
|  |      |                       | REV<br>0  |




APPLY SOPRA-FLASH UN TIGHTLY  
OVER PIPE PENETRATION AND ONTO  
BASE COAT OF COLPHENE H  
REFERENCE DETAIL HRW-301

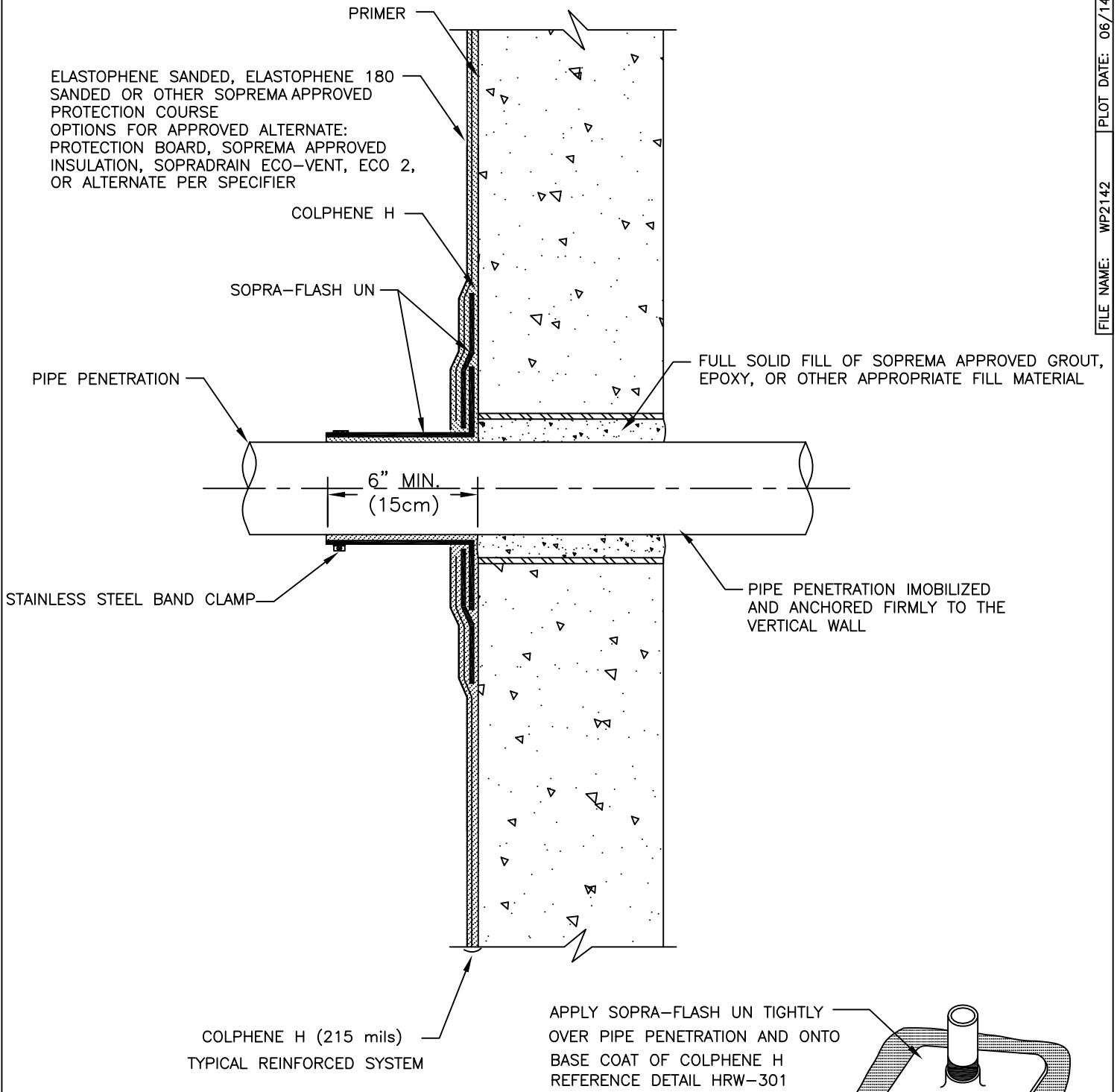


#### NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.
3. REFERENCE DETAIL HR-301 FOR SPECIFIC INSTALLATION GUIDELINES OF PIPE FLASHING MEMBRANE.
4. THIS DETAIL IS APPLICABLE FOR VERTICAL WALL PENETRATIONS (TYPICAL)


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>VERTICAL OR HORIZONTAL PIPE PENETRATIONS            |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | 11/23/09   |           |
| HRW-300  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

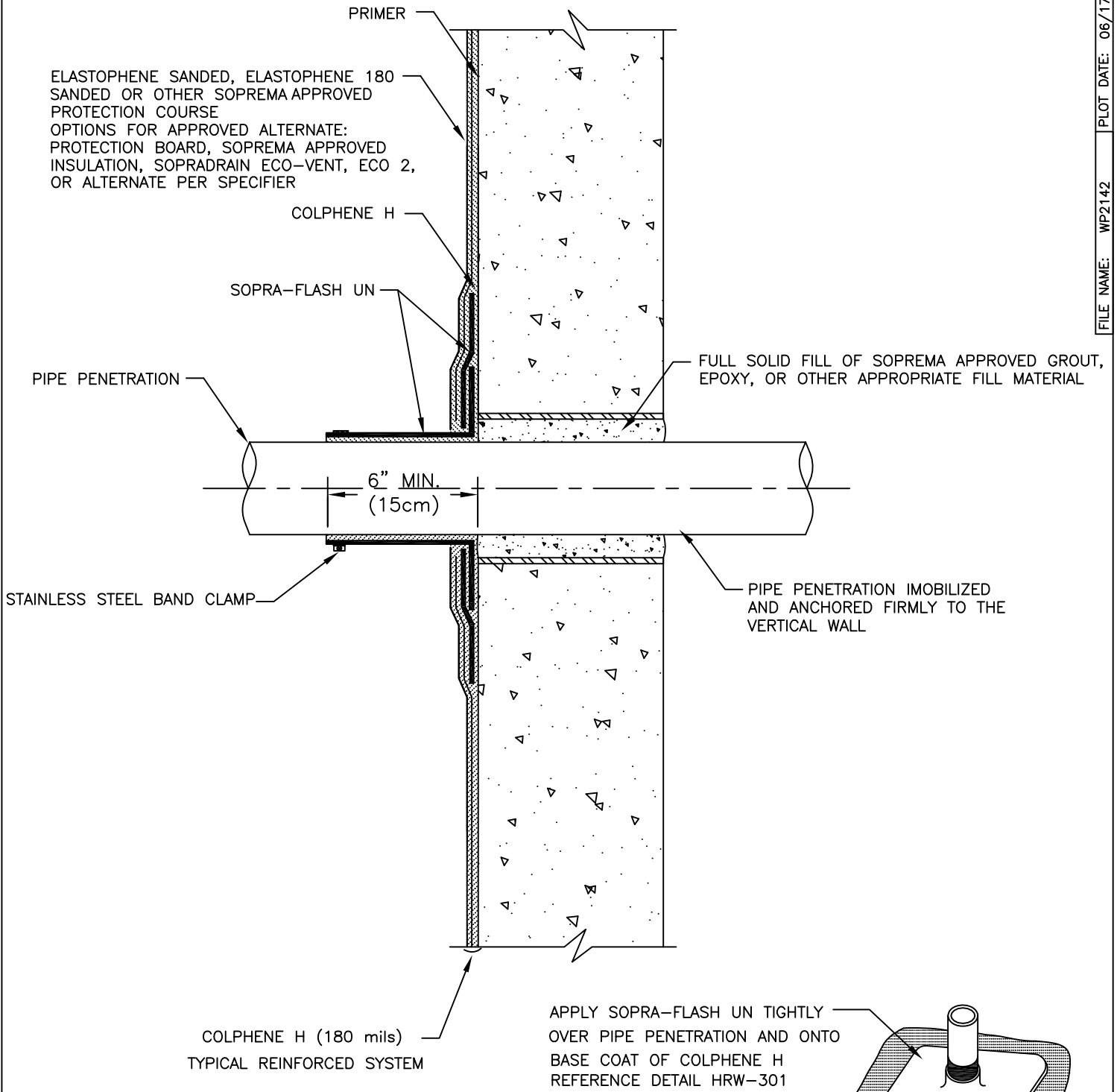


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.
3. REFERENCE DETAIL HR-301 FOR SPECIFIC INSTALLATION GUIDELINES OF PIPE FLASHING MEMBRANE.
4. THIS DETAIL IS APPLICABLE FOR VERTICAL WALL PENETRATIONS (TYPICAL)
5. DRAINBOARD AND/OR INSULATION NOT SHOWN IF REQUIRED


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>VERTICAL PIPE PENETRATIONS                          |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>06/14/10                                    |           |
| HRW-300b   |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

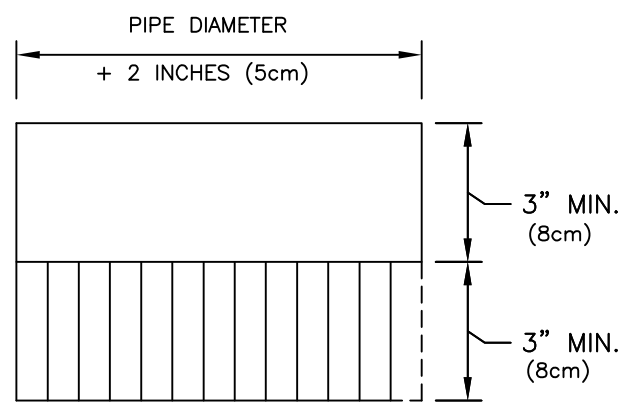
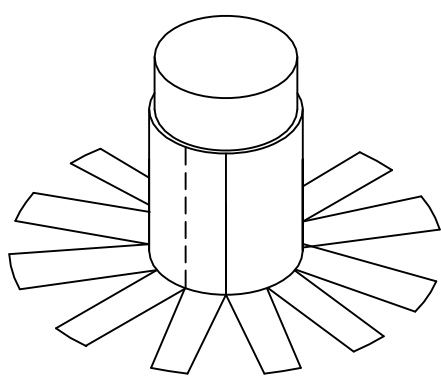
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.
3. REFERENCE DETAIL HR-301 FOR SPECIFIC INSTALLATION GUIDELINES OF PIPE FLASHING MEMBRANE.
4. THIS DETAIL IS APPLICABLE FOR VERTICAL WALL PENETRATIONS (TYPICAL)
5. DRAINBOARD AND/OR INSULATION NOT SHOWN IF REQUIRED

|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>VERTICAL PIPE PENETRATIONS                          |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>06/17/10                                    |           |
| HRW-300c   |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

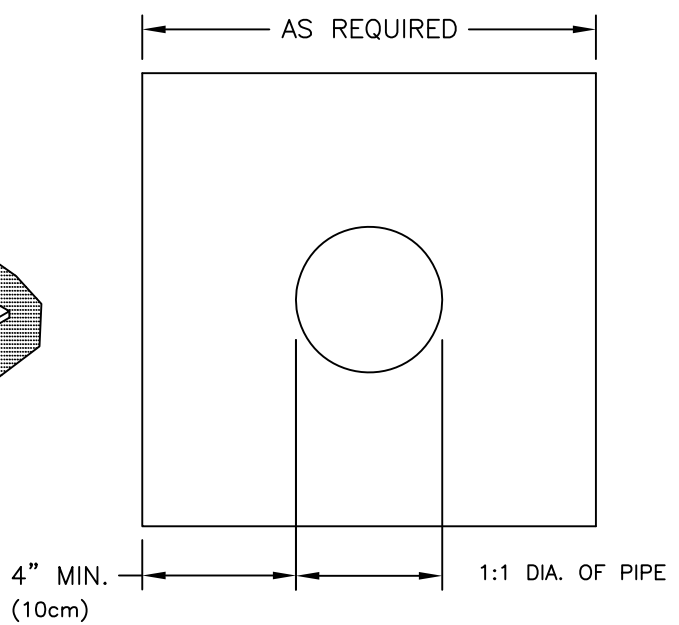
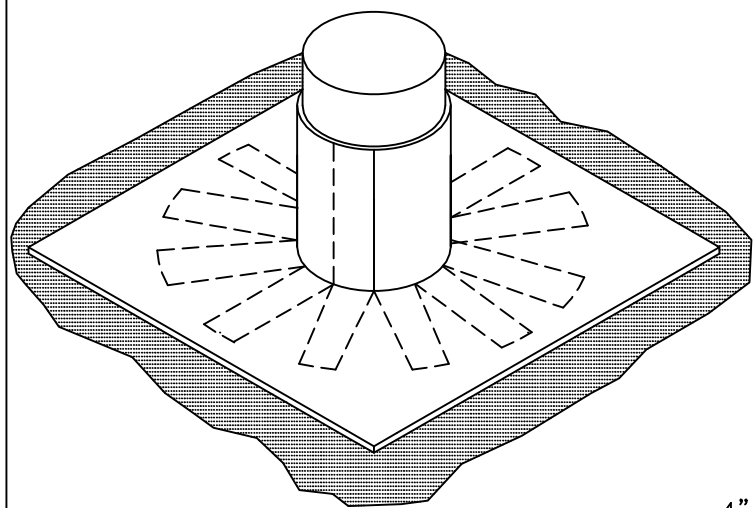
**STEP 1:**

CUT, THEN APPLY FINGER FLASHING IN COLPHENE H AROUND PIPE. INSURE VERTICAL SHAFT OF PIPE IS FULLY COATED WITH COLPHENE H




**STEP 2:**

CUT, THEN APPLY TARGET PATCH IN A FULL BED OF COLPHENE H INSURE ALL SERATED EDGES OF FINGER FLASHING ARE FULLY EMBEDDED IN COLPHENE H AND COVERED BY FIRMLY SEATED TARGET PATCH

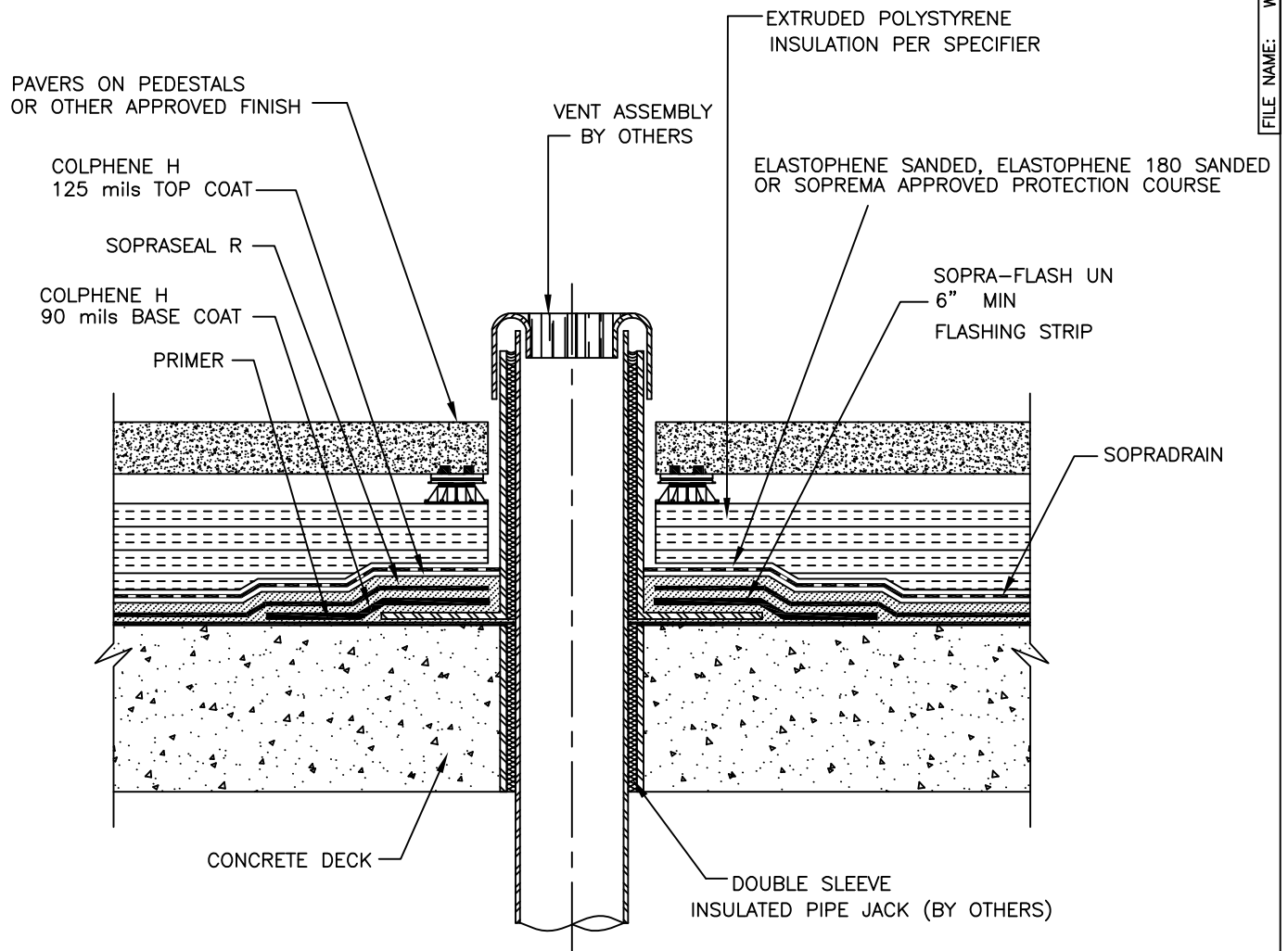


**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. REMOVE ALL POSSIBLE CONTAMINANTS FROM ALL PIPE PENETRATIONS. PRIME, SAND AND PREPARE ALL PIPE SURFACES, THIS IS NECESSARY TO INSURE PROPER ADHESION
3. DETAIL IS TYPICAL FOR ALL STANDARD PIPE PENETRATIONS INCLUDING CONDUIT, PIPES AND VENTS
4. ALL PENETRATIONS MUST BE FIRMLY AND PROPERLY ANCHORED TO PROHIBIT ANY MOVEMENT
5. ALL VOIDS MUST BE SOLIDLY GROUTED OR APPROPRIATELY FILLED TO FORM A CLEAN, DRY AND SUITABLE SUBSTRATE

|  |         |                       |                         |
|--|---------|-----------------------|-------------------------|
|  |         | 310 QUADRAL DRIVE     |                         |
|  |         | WADSWORTH, OHIO 44281 |                         |
|  |         | (330) 334-0066        |                         |
| TITLE: TYPICAL PIPE FLASHING UN CUTTING DIAGRAM                                      |         |                       |                         |
| SCALE: NONE  | DWN: TM | CHK: JP               | APPROVAL DATE: 11/23/09 |
| DRAWING NUMBER: HRW-301  |         |                       | REV: 0                  |


\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

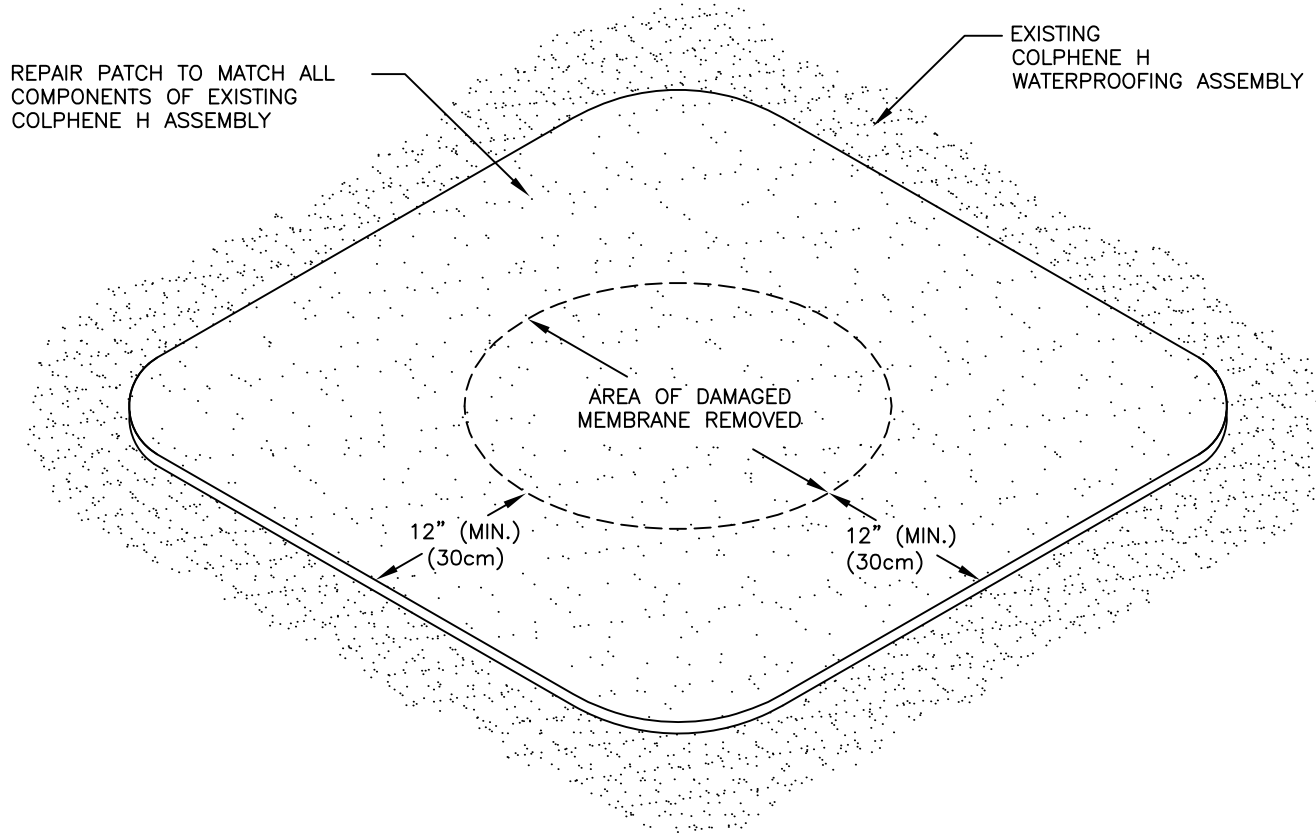


## TYPICAL

### NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. CLEAN ALL PENETRATIONS OF DIRT, RUST AND OIL. ROUGHEN SURFACE OF PIPE BEFORE APPLYING PRIMER. VERIFY PENETRATION IS PROPERLY SECURED TO DECK OR WALL TO AVOID MOVEMENT OF PIPE.
3. REFERENCE DETAIL HRW-301

|  |           |  |                           |
|--|-----------|--|---------------------------|
|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           |  |                           |
| TITLE<br>INSULATED (HOT) PIPE  |           |  |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>11/24/09 |
| DRAWING NUMBER<br>HRW-302  |           |  | REV<br>0                  |



NOTES:

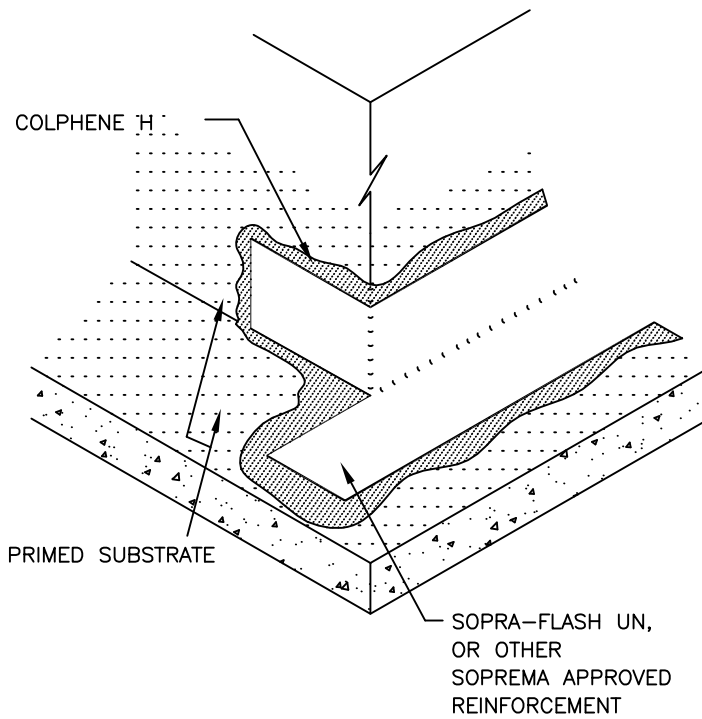
1. RE-PRIME EXPOSED SUBSTRATE, AS NECESSARY PRIOR TO THE INSTALLATION OF ANY NEW MATERIALS
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>REPAIR PATCH / TIE-IN   |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>11/23/09 |
| DRAWING NUMBER<br>HR-303   |           |                       | REV<br>0                  |

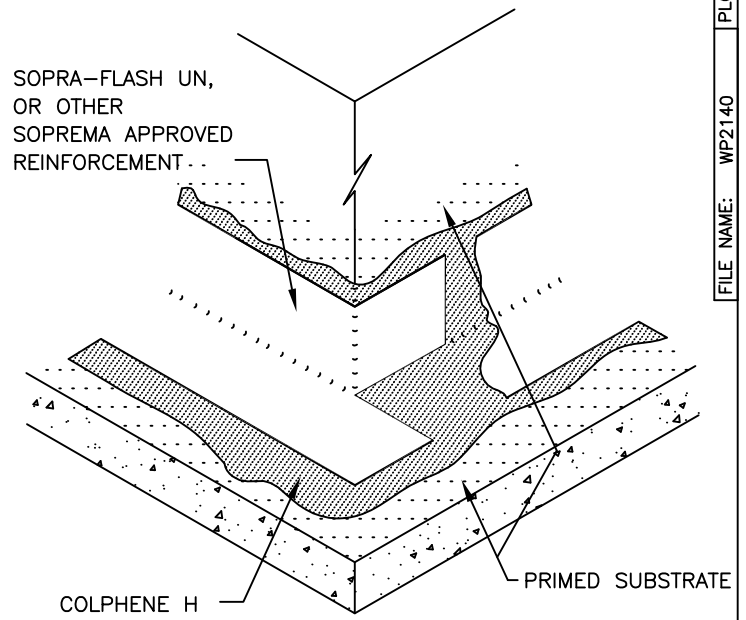
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



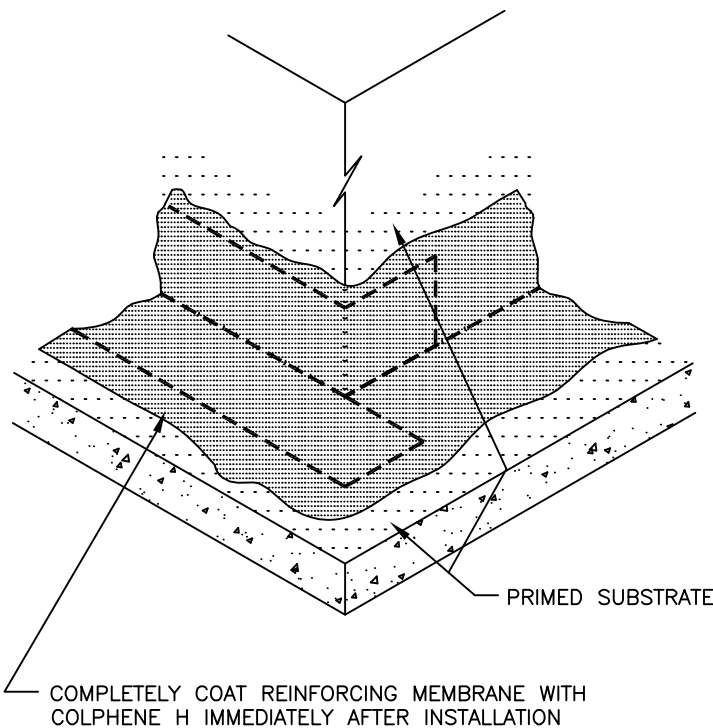
STEP #1



STEP #2



STEP #3



NOTES:

1. SUBSTRATE MUST BE PRIMED PRIOR TO THE INSTALLATION OF NEW MATERIALS.
2. COMPLETELY ENCAPSULATE REINFORCEMENT WITH A TOP COATING OF COLPHENE H IMMEDIATELY AFTER INSTALLATION. DO NOT LEAVE EXPOSED OVERNIGHT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.

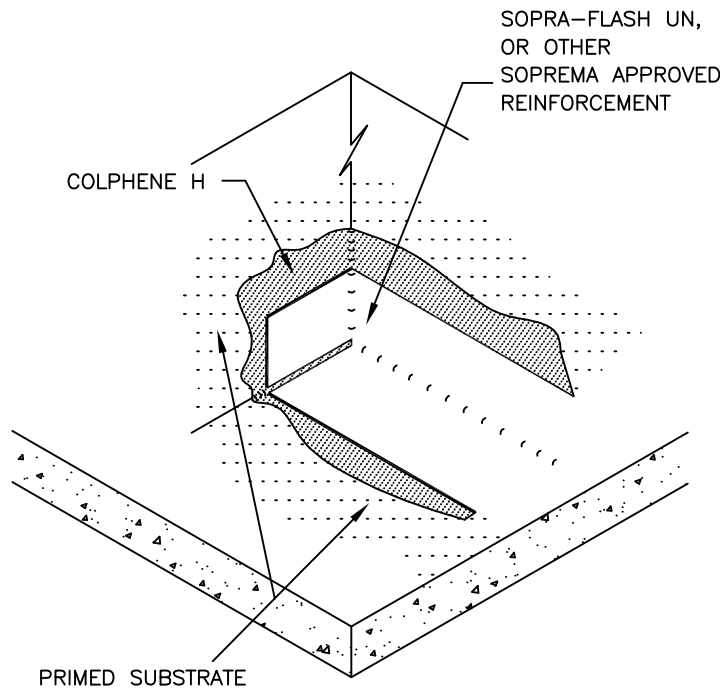


310 QUADRAL DRIVE  
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(330) 334-0066

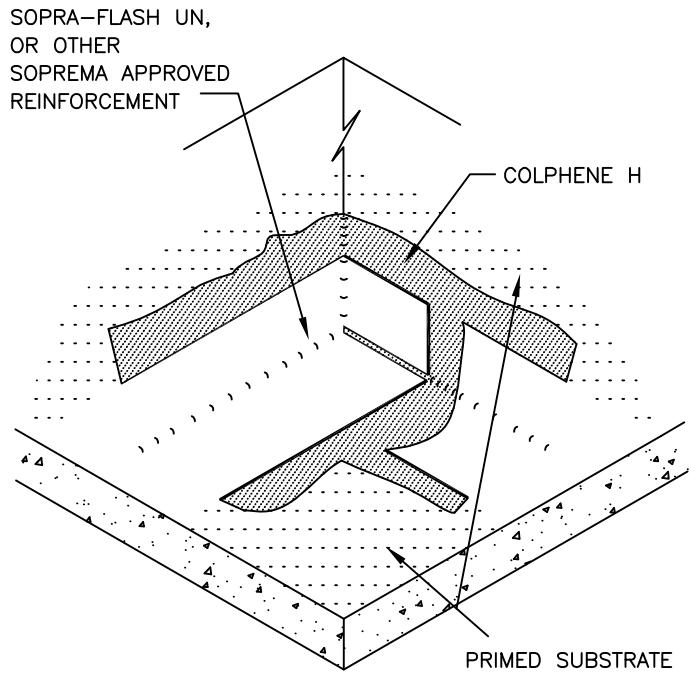
|                                      |           |           |                           |          |
|--------------------------------------|-----------|-----------|---------------------------|----------|
| TITLE<br>DECK TO WALL OUTSIDE CORNER |           |           |                           |          |
| SCALE<br>NONE                        | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>11/23/09 |          |
| DRAWING NUMBER<br>HRW-400            |           |           |                           | REV<br>0 |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

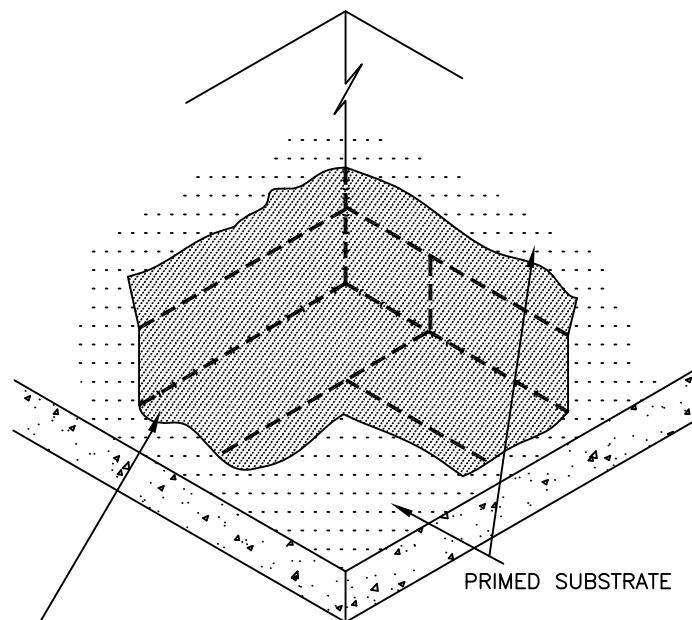
STEP #1



STEP #2



STEP #3



COMPLETELY COAT REINFORCING MEMBRANE WITH  
COLPHENE H IMMEDIATELY AFTER INSTALLATION

NOTES:

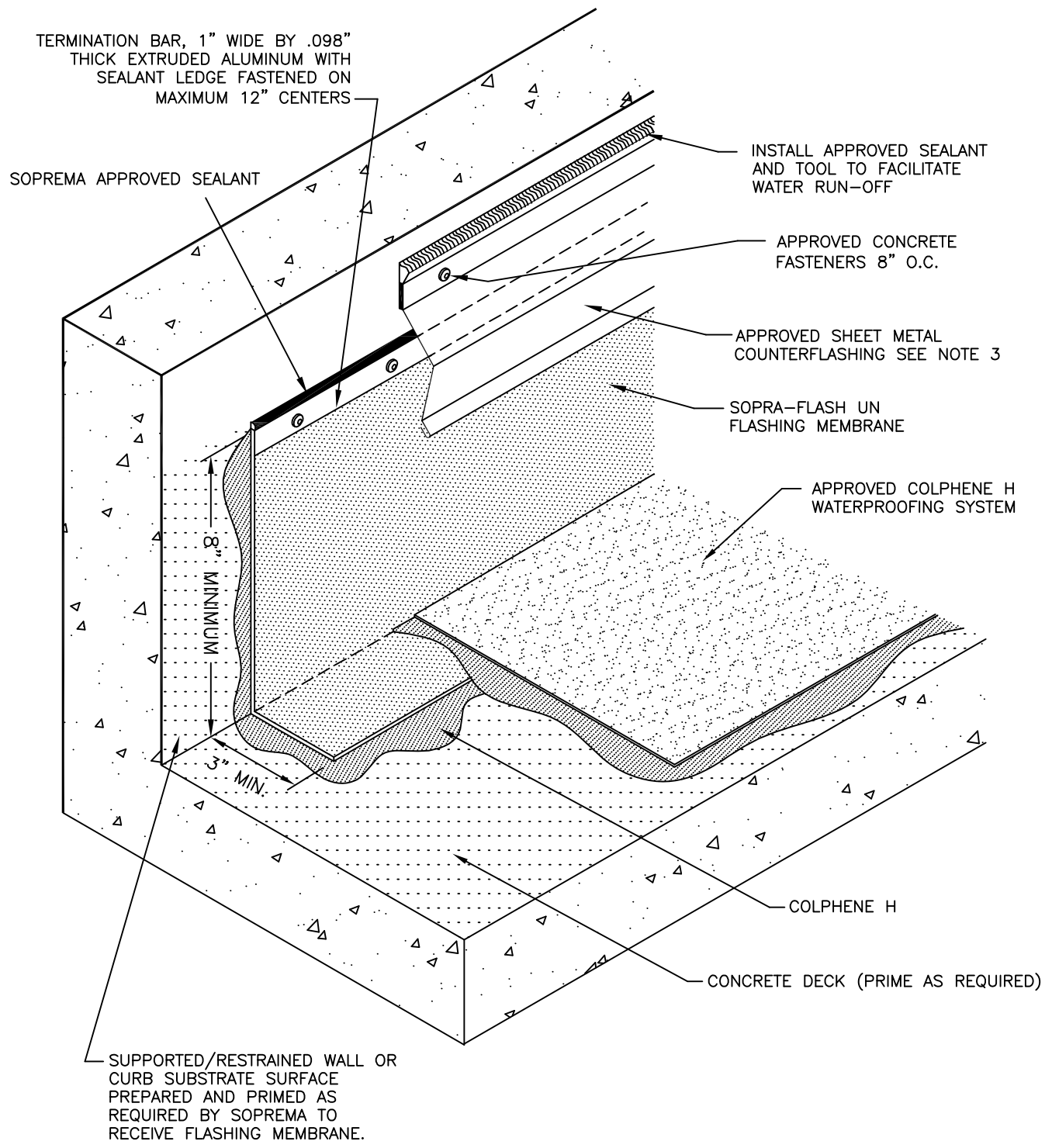
1. SUBSTRATE MUST BE PRIMED PRIOR TO THE INSTALLATION OF NEW MATERIALS.
2. COMPLETELY ENCAPSULATE REINFORCEMENT WITH A TOP COATING OF COLPHENE H IMMEDIATELY AFTER INSTALLATION. DO NOT LEAVE EXPOSED OVERNIGHT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066


|                                     |           |           |                           |          |
|-------------------------------------|-----------|-----------|---------------------------|----------|
| TITLE<br>DECK TO WALL INSIDE CORNER |           |           |                           |          |
| SCALE<br>NONE                       | DWN<br>TM | CHK<br>JP | APPROVAL DATE<br>11/23/09 |          |
| DRAWING NUMBER<br>HRW-401           |           |           |                           | REV<br>0 |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

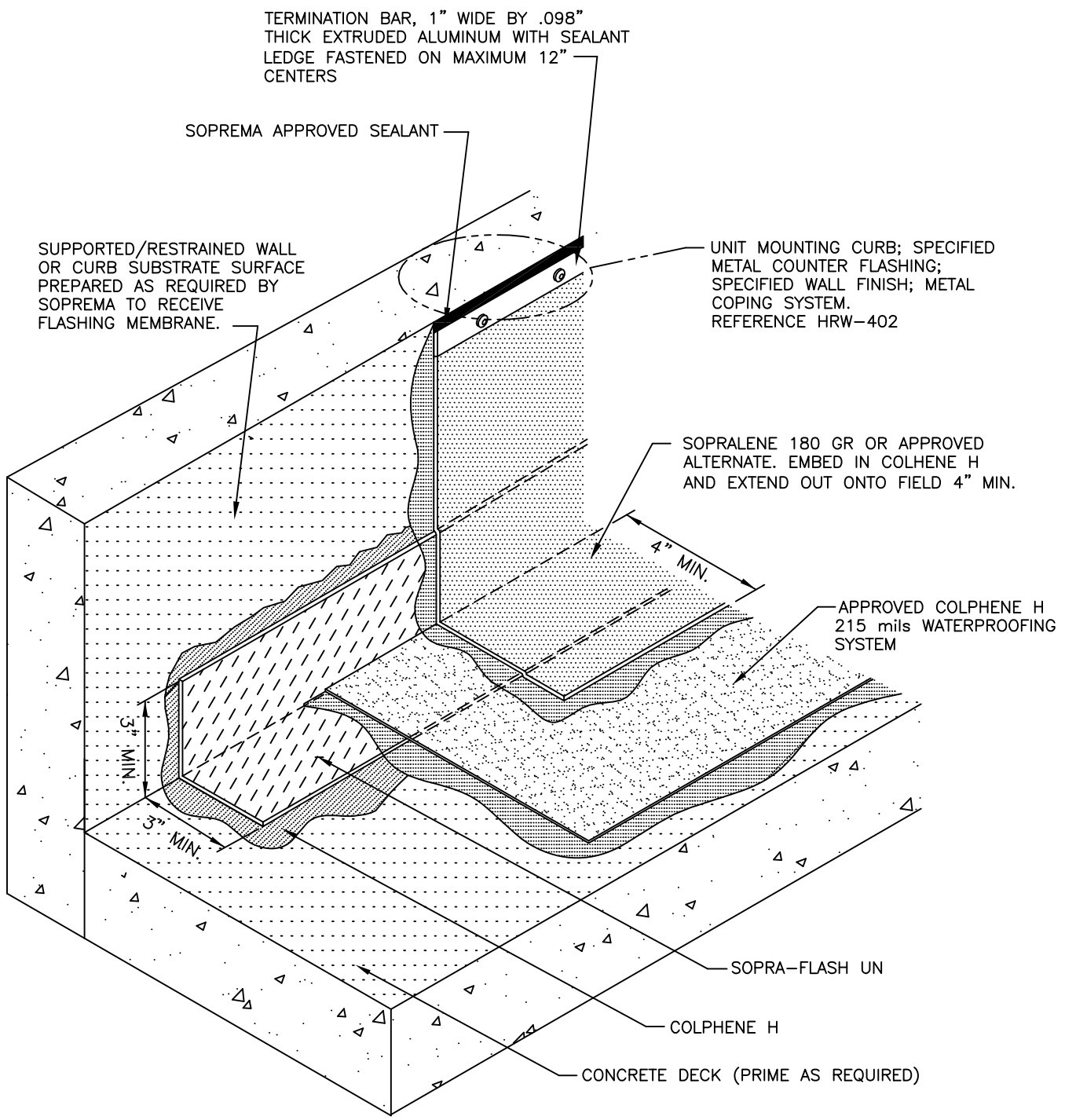


**NOTES:**

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. SOPREMA ADHESIVES, CEMENTS, MASTICS, PRIMERS AND SEALANTS ARE REQUIRED WHERE INDICATED.
3. WHEN A PROJECT SPECIFICATION REQUIRES SOPREMA TO WARRANT SHOP FORMED METAL(S), WATERPROOFING CONTRACTOR MUST SUBMIT METAL SPECIFICATION AND ALL PROPOSED METAL DETAILS TO THE SOPREMA CORPORATE TECHNICAL DEPARTMENT FOR REVIEW/APPROVAL PRIOR TO BIDDING AND/OR INSTALLATION.
4. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.


|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>TYPICAL WALL FLASHING – UNCURED NEOPRENE                                    |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>12/11/09 |
| DRAWING NUMBER<br>HRW-402  |           |                       | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

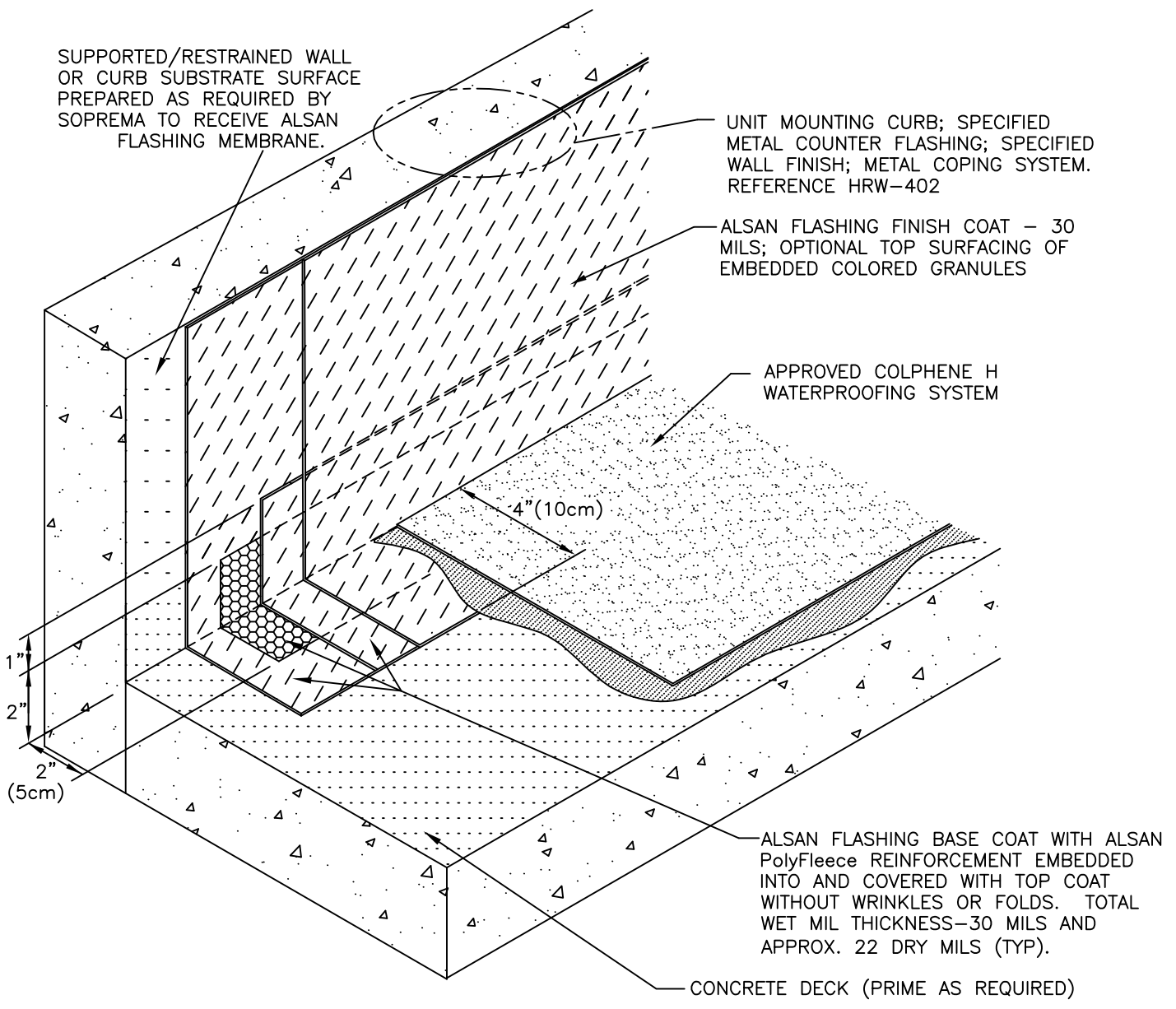


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.

|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>TYPICAL WALL FLASHING-GRANULATED CAP  |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>12/11/09 |
| DRAWING NUMBER<br>HRW-403  |           |                       | REV<br>0                  |


\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



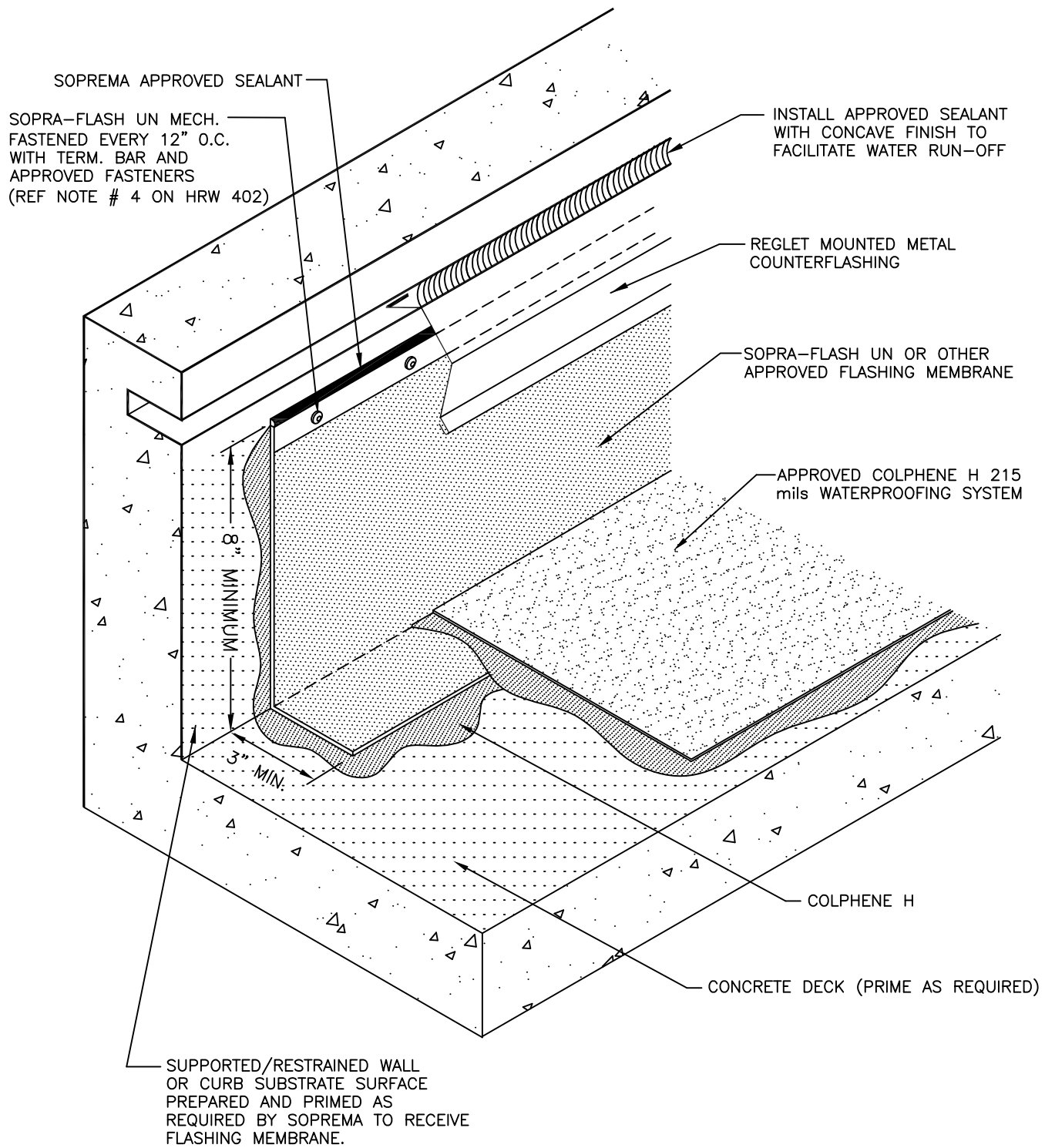
TYPICAL WALL FLASHING

NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. ALSAN FLASHING 30 WET MIL COVERAGE RATE (22 DRY MIL) IS 1.87 GALS/100FT. ALL COVERAGE RATES ARE APPROXIMATE, THEORETICAL AND DO NOT ACCOUNT FOR WASTE, SPILLAGE, IRREGULAR SURFACES AND APPLICATION TECHNIQUES THAT CAN ALSO VARY WITH INSTALLER. RATES MAY ALSO VARY DEPENDING UPON MATERIAL AND AMBIENT TEMPERATURE(S), SURFACE FINISH AND POROSITY OF THE SUBSTRATE.


|   |     |  |               |
|---|-----|--|---------------|
|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
| TITLE   |     |  |               |
| ALSAN FLASHING ALTERNATE  |     |  |               |
| SCALE   | DWN | CHK  | APPROVAL DATE |
| NONE  | TM  | JP   | 11/24/09      |
| DRAWING NUMBER  |     |  | REV           |
| HRW-404   |     |  | 0             |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

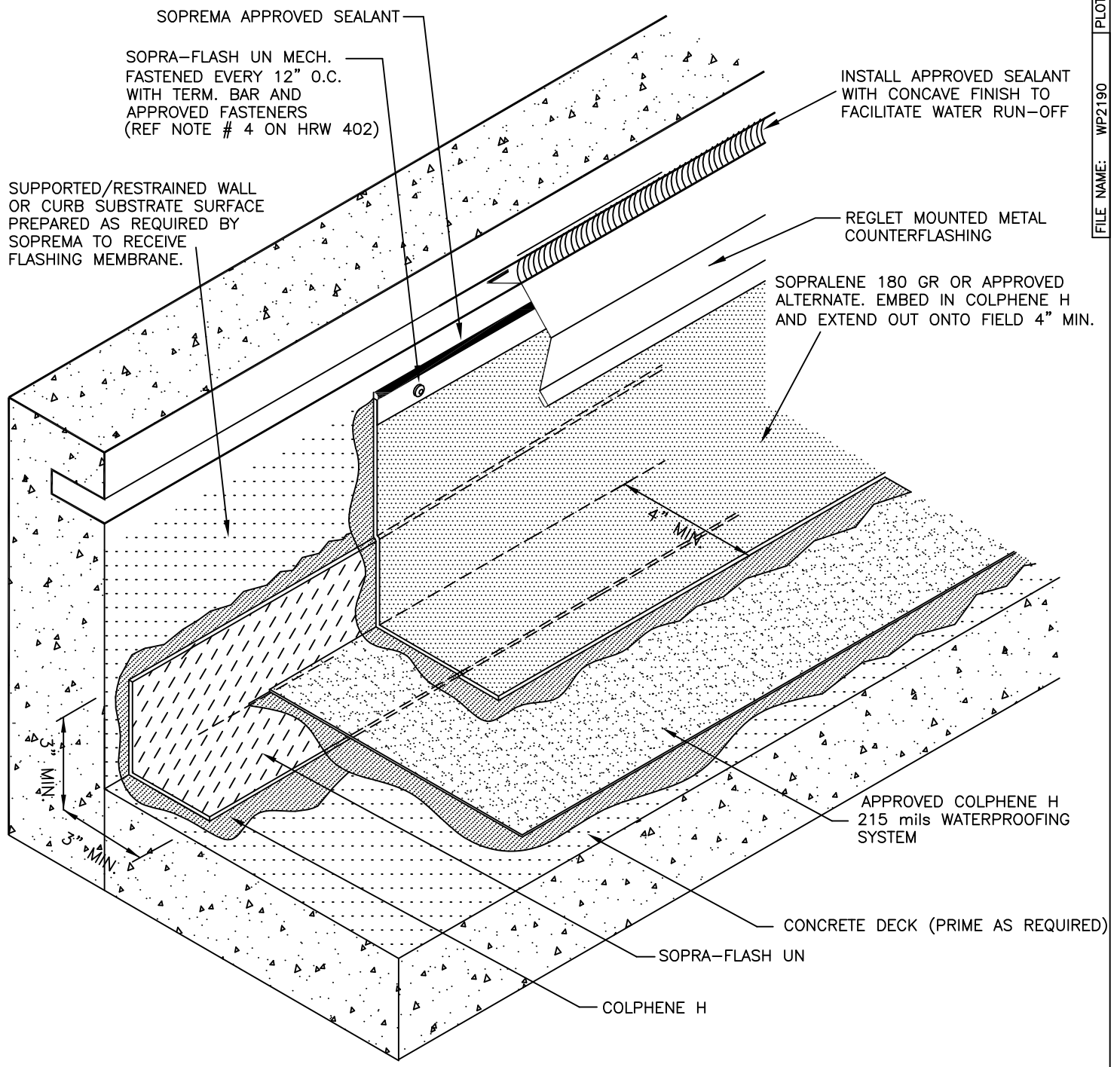


NOTES:

1. DETAIL TO BE USE IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. SOPREMA ADHESIVES, CEMENTS, MASTICS, PRIMERS AND SEALANTS ARE REQUIRED WHERE INDICATED.
3. WHEN A PROJECT SPECIFICATION REQUIRES SOPREMA TO WARRANT SHOP FORMED METAL(S), WATERPROOFING CONTRACTOR MUST SUBMIT METAL SPECIFICATION AND ALL PROPOSED METAL DETAILS TO THE SOPREMA CORPORATE TECHNICAL DEPARTMENT FOR REVIEW/APPROVAL PRIOR TO BIDDING AND/OR INSTALLATION.

|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>REGLET MOUNTED COUNTERFLASHING  |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>11/24/09 |
| DRAWING NUMBER<br>HRW-405A   |           |                       | REV<br>0                  |


\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



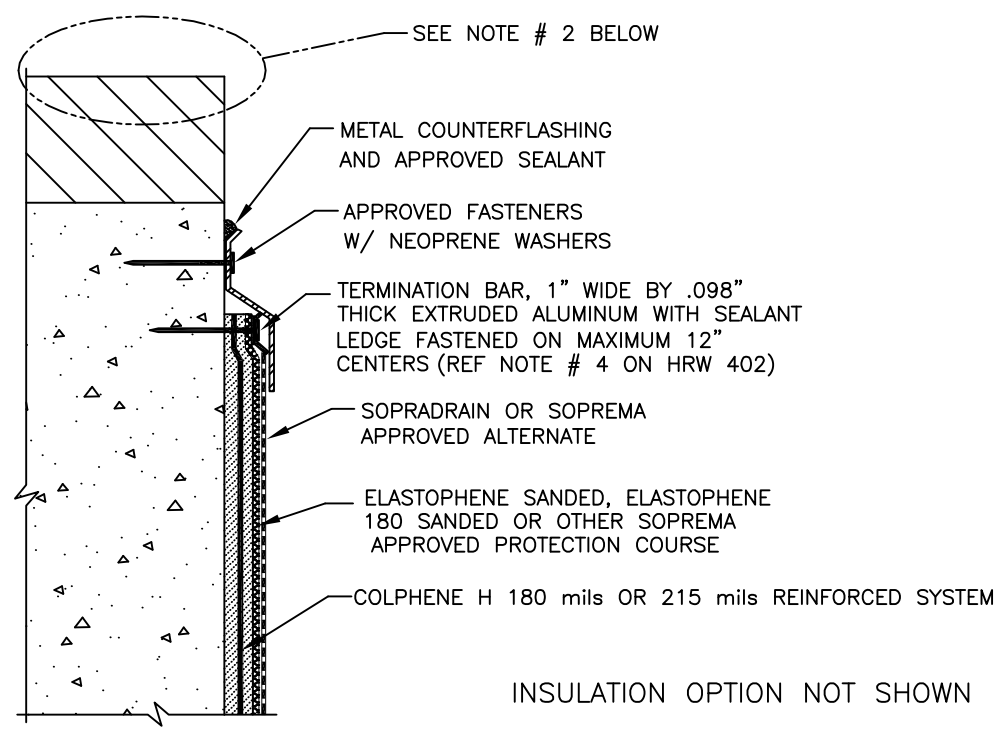
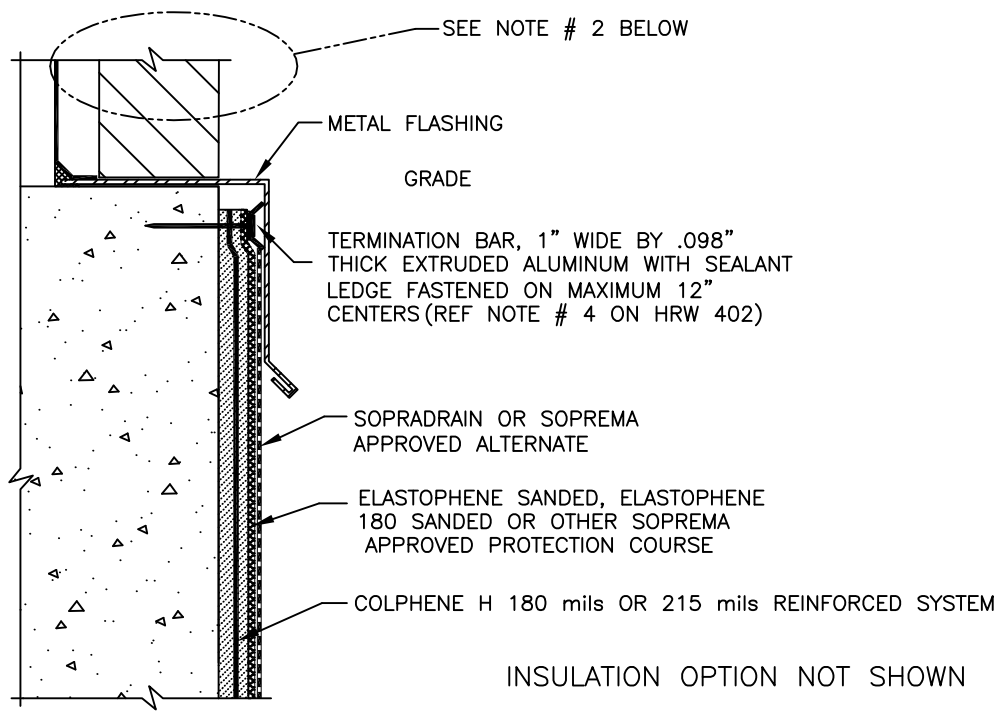
(GRANULATED) CAP

NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.


|  |      |                           |           |
|--|------|---------------------------|-----------|
|  |      | 310 QUADRAL DRIVE         |           |
|  |      | WADSWORTH, OHIO 44281     |           |
|  |      | (330) 334-0066            |           |
| TITLE<br>REGLET MOUNTED COUNTER FLASHING   |      |                           |           |
| SCALE  | NONE | DWN<br>TM                 | CHK<br>JP |
|  |      | APPROVAL DATE<br>11/24/09 |           |
| DRAWING NUMBER<br>HRW-405B   |      |                           | REV<br>0  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

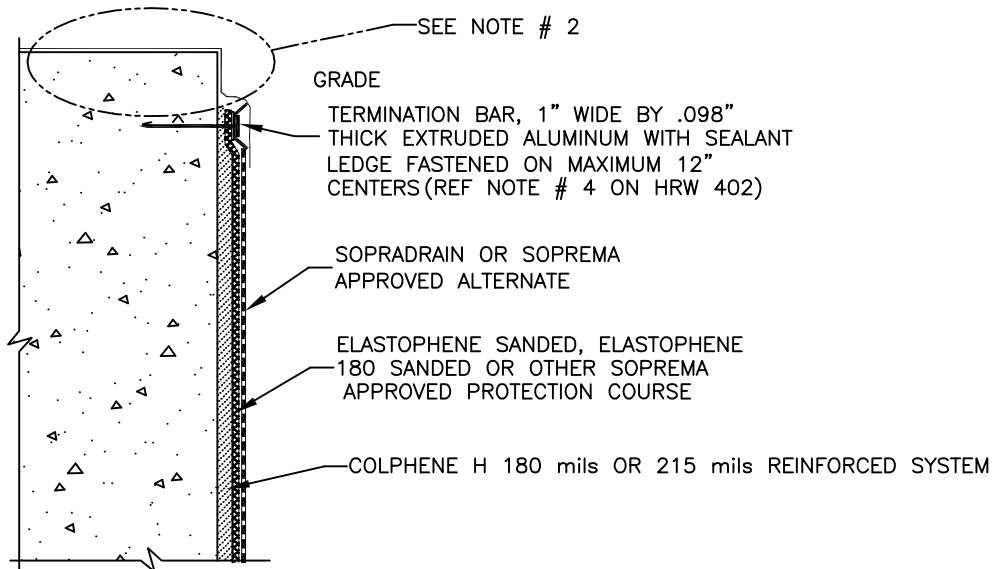
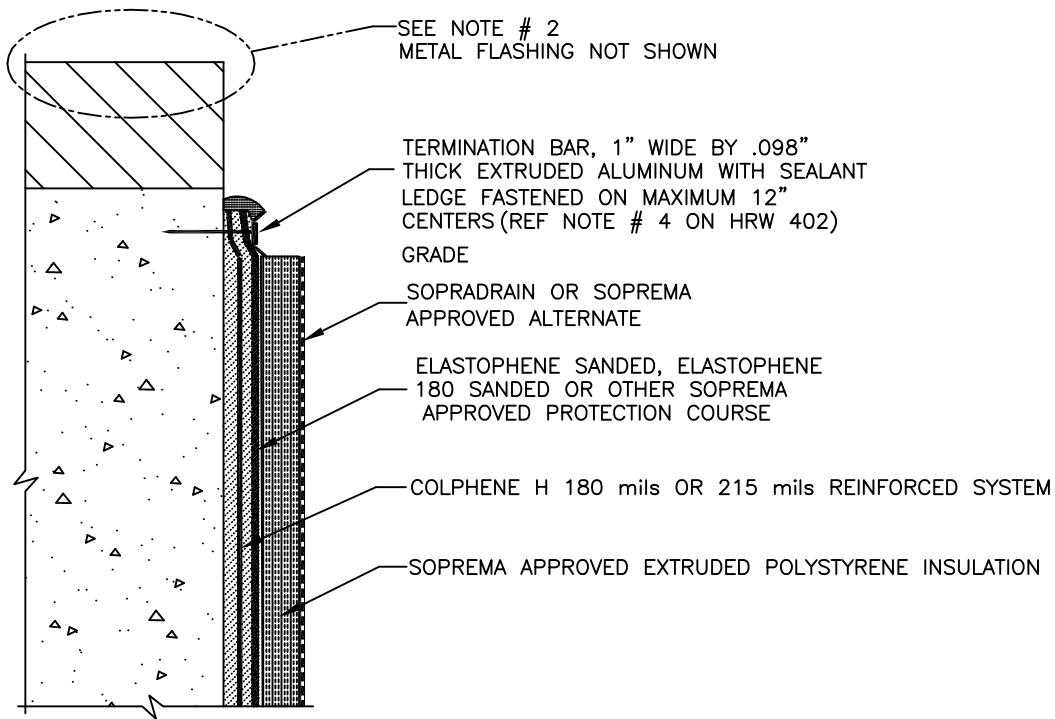


NOTES:

1. FOR CONCRETE MASONARY UNIT WALLS (BLOCK WALLS) SEE SOPREMA FOR SPECIAL DETAILING/OPTIONS. ALL CMU WALLS MUST BE 215 MILS REINFORCED SYSTEM
2. ALL SOPREMA VERTICAL WALL MEMBRANE SYSTEMS MUST BE MECHANICALLY FASTENED AT TERMINATION POINT. SOPREMA RECOMMENDS STANDARD REINFORCED JOINT TREATMENT; AT GRADE, TRANSITION TO VERTICAL WALL, WATER/WEATHER PROOFING. SOPREMA RECOMMENDS VERTICAL WALL WATERPROOFING EXTEND ABOVE GRADE AND BEHIND EXPOSED WALL FINISH.
3. SEE SOPREMA FOR OPTIONS ON ELASTOPHENE SANDED REQUIREMENTS FOR BELOW GRADE COLPHENE H 180 MILS ASSEMBLY.
4. CONCRETE SUBSTRATE MUST BE PRIMED/ PREPARED PRIOR TO THE INSTALLATION OF NEW MATERIALS.
5. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS


|  |     |                       |               |
|--|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| VERTICAL WALL TYPICAL FLASHING TERM.   |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 12/18/09      |
| DRAWING NUMBER   |     |                       | REV           |
| HRW-406A   |     |                       | 0             |



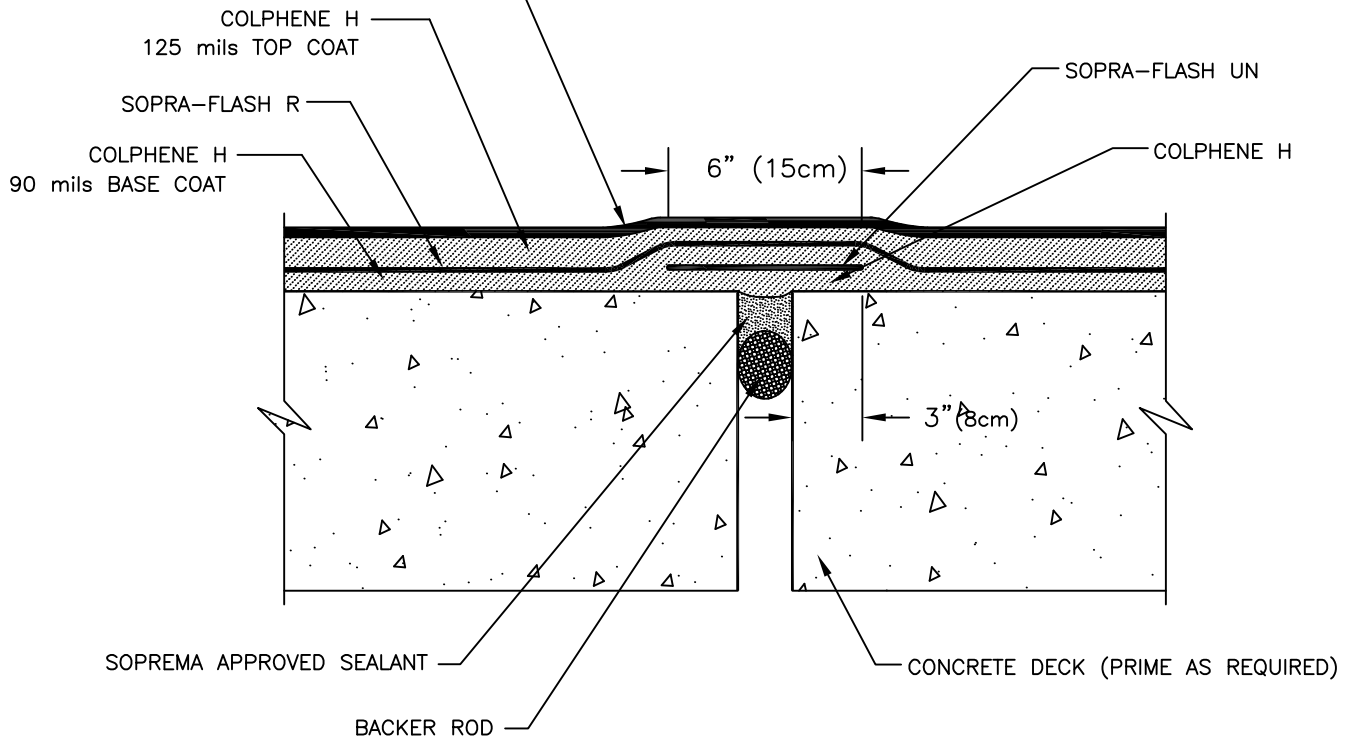


NOTES:

1. FOR CONCRETE MASONRY UNIT WALLS (BLOCK WALLS) SEE SOPREMA FOR SPECIAL DETAILING/OPTIONS. ALL CMU WALLS MUST BE 215 MILS REINFORCED SYSTEM
2. ALL SOPREMA VERTICAL WALL MEMBRANE SYSTEMS MUST BE MECHANICALLY FASTENED AT TERMINATION POINT. SOPREMA RECOMMENDS STANDARD REINFORCED JOINT TREATMENT; AT GRADE, TRANSITION TO VERTICAL WALL, WATER/WEATHER PROOFING. SOPREMA RECOMMENDS VERTICAL WALL WATERPROOFING EXTEND ABOVE GRADE AND BEHIND EXPOSED WALL FINISH.
3. SEE SOPREMA FOR OPTIONS ON ELASTOPHENE SANDED REQUIREMENTS FOR BELOW GRADE COLPHENE H 180 MILS ASSEMBLY.
4. CONCRETE SUBSTRATE MUST BE PRIMED/ PREPARED PRIOR TO THE INSTALLATION OF NEW MATERIALS.
5. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS


|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>VERTICAL WALL TYPICAL FLASHING TERM.  |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>12/22/09 |
| DRAWING NUMBER<br>HRW-406B   |           |                       | REV<br>0                  |

ELASTOPHENE SANDED, ELASTOPHENE 180 SANDED  
OR OTHER SOPREMA APPROVED PROTECTION COURSE

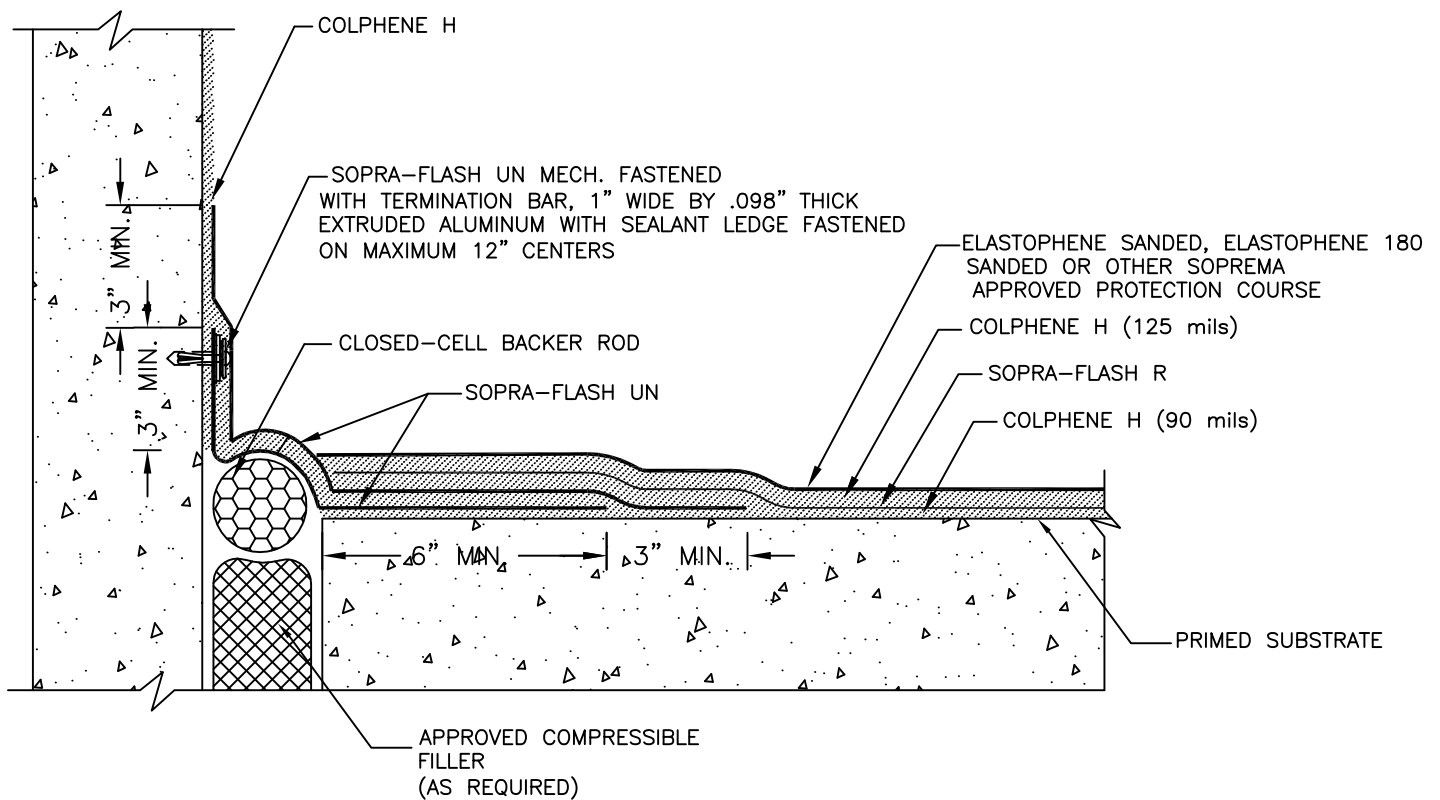


NOTES:

1. SOPRA-FLASH UN FLASHING STRIP SHALL BE 6" WIDE AND CENTERED OVER JOINT.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>EXPANSION JOINT UP TO 1" WIDTH                      |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>11/24/09                                    |           |
| HRW-500  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

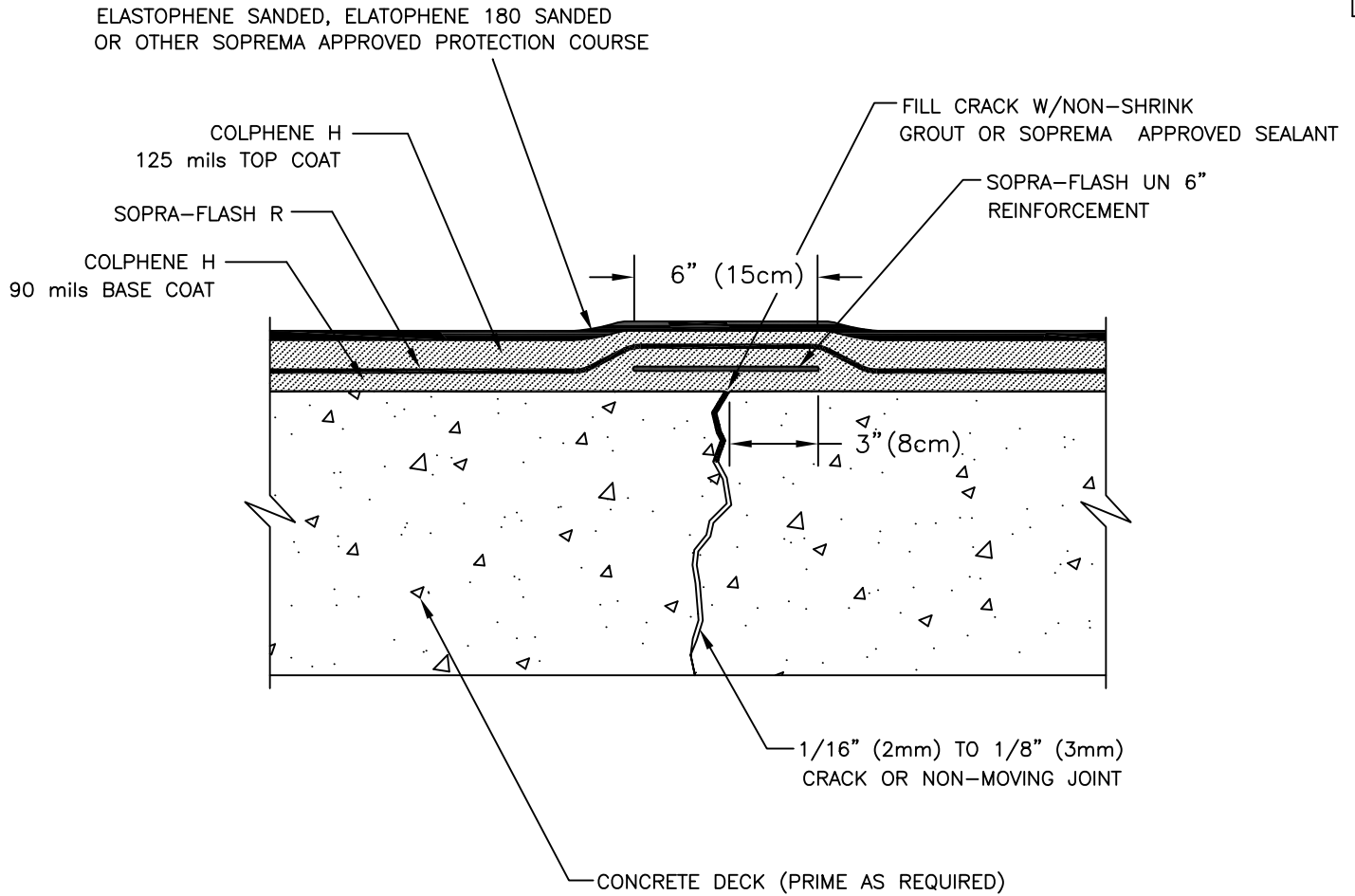


NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. IF EXPANSION JOINT/FLASHING MEMBRANE IS TO BE COVERED OR BURIED, SUFFICIENT PROTECTION MUST BE PROVIDED BEFORE INSTALLING OVERBURDEN/TOPPING.
3. MINIMUM  $\frac{1}{4}$ " TO MAXIMUM  $\frac{1}{2}$ " SPACING BETWEEN LENGTHS OF TERMINATION BAR: ADD ADDITIONAL FASTENERS AS NEEDED TO ACHIEVE AND MAINTAIN COMPRESSION OF FLASHING MATERIALS.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>DECK TO WALL EXPANSION JOINT                        |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>12/11/09                                    |           |
| HRW-501  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

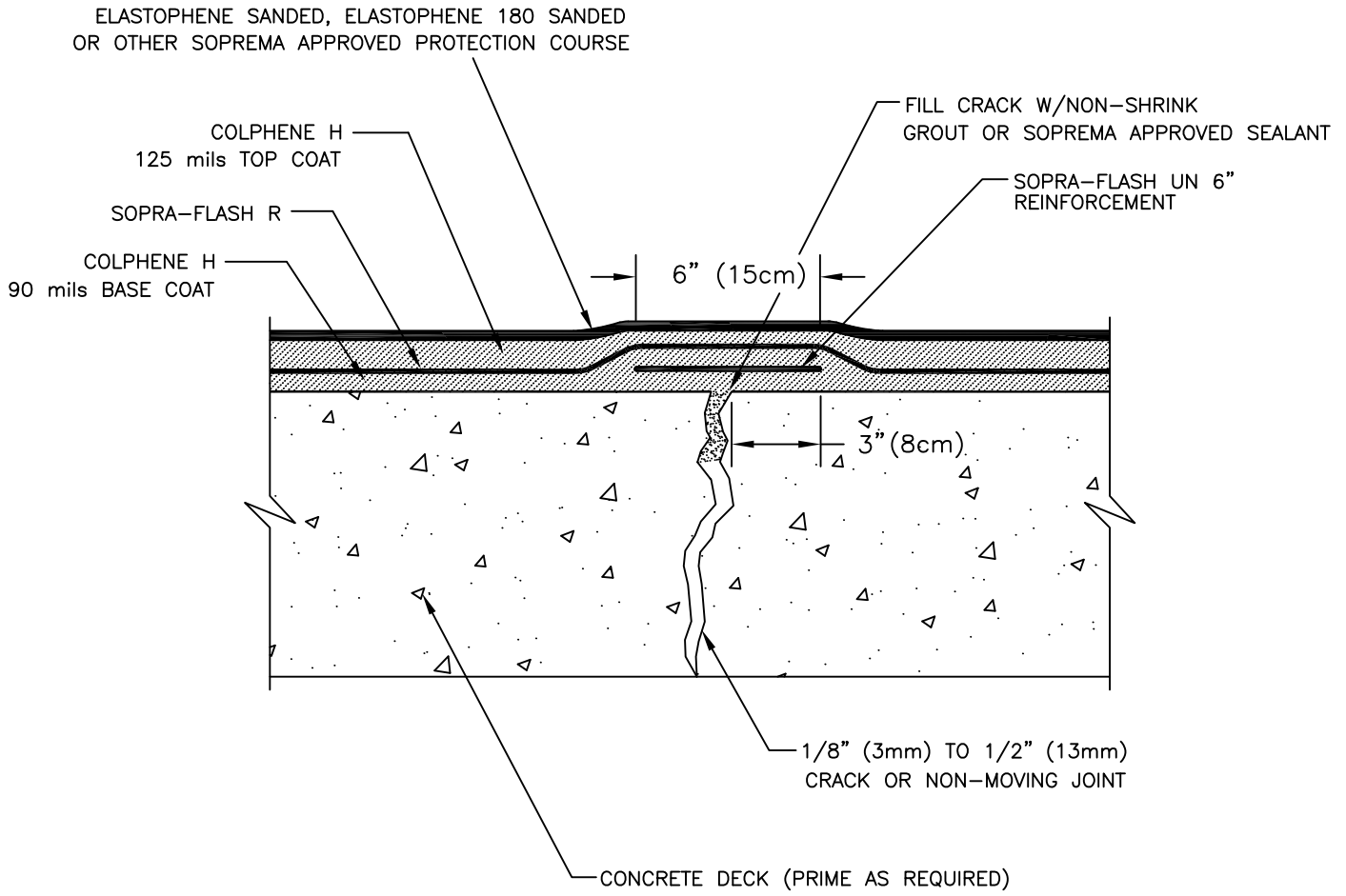


NOTES:

1. SOPRA-FLASH UN REINFORCEMENT SHALL BE 6" WIDE AND CENTERED OVER CRACK OR JOINT.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>NON-MOVING JOINTS OR CRACKS UP TO 1/8" WIDE         |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>11/25/09                                    |           |
| HRW-502  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

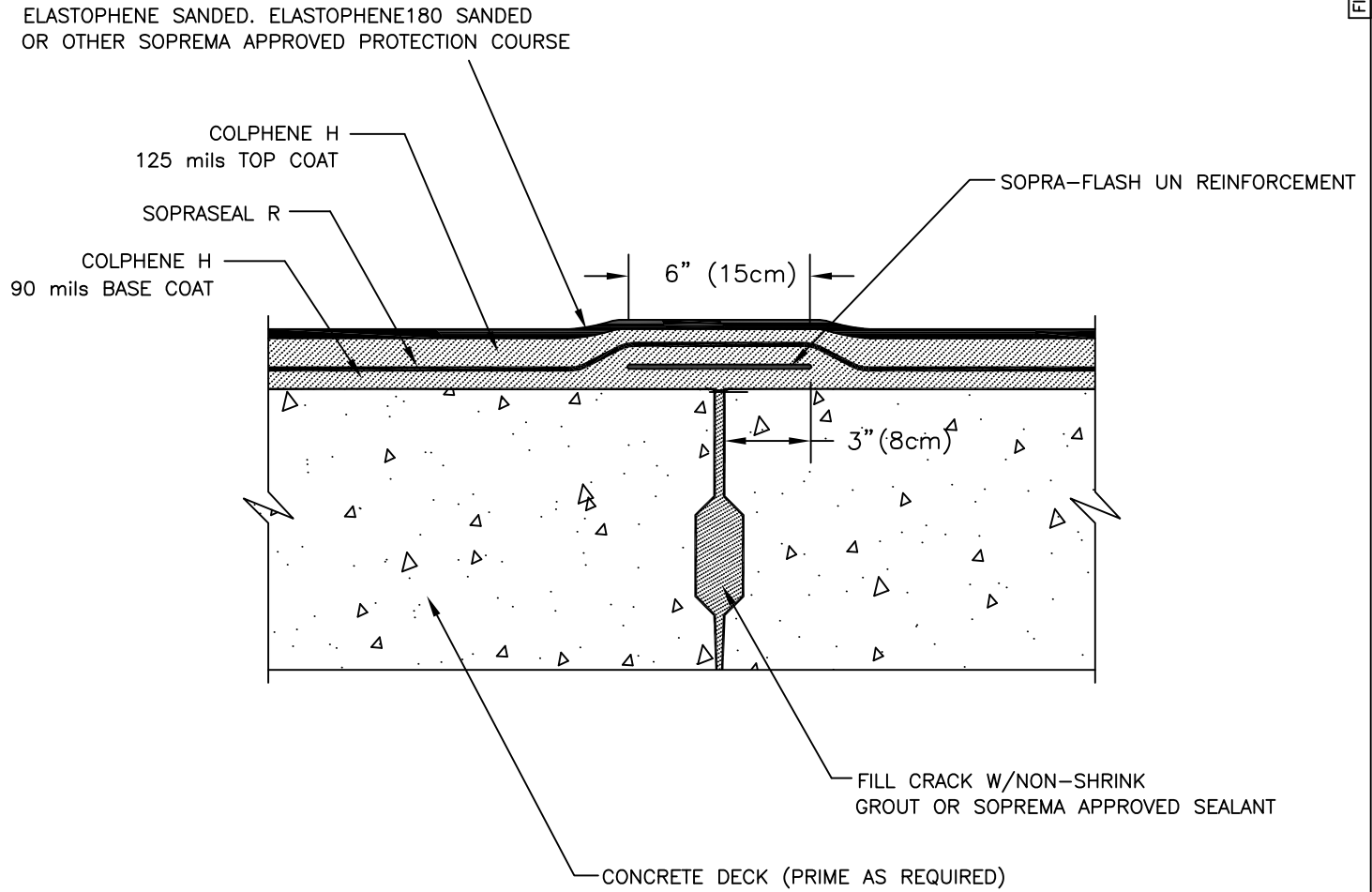


NOTES:

1. SOPRA-FLASH UN REINFORCEMENT SHALL BE 6" WIDE AND CENTERED OVER CRACK OR JOINT.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.


|  |           |  |                           |
|--|-----------|--|---------------------------|
|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           | TITLE<br>NON-MOVING JOINTS OR CRACKS UP TO 1/2" WIDE         |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>11/25/09 |
| DRAWING NUMBER<br>HRW-503  |           |  | REV<br>0                  |

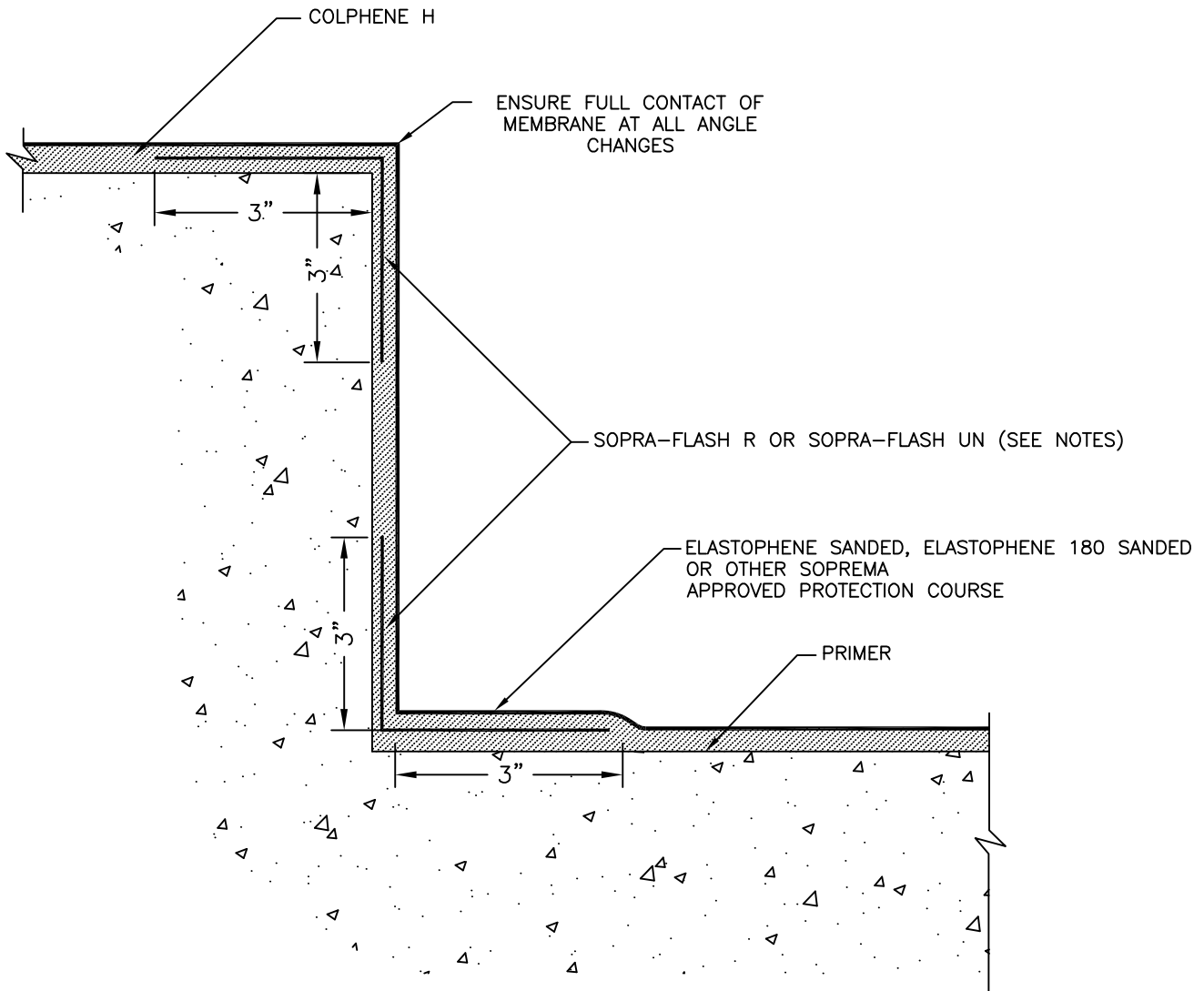
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:


1. SOPRA-FLASH UN REINFORCEMENT SHALL BE 6" WIDE AND CENTERED OVER CRACK OR JOINT.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.

|  |     |                       |               |
|--|-----|-----------------------|---------------|
|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| CONCRETE DECK PRECAST JOINT TREATMENT  |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| NONE   | TM  | JP                    | 11/25/09      |
| DRAWING NUMBER   |     |                       | REV           |
| HRW-504  |     |                       | 0             |

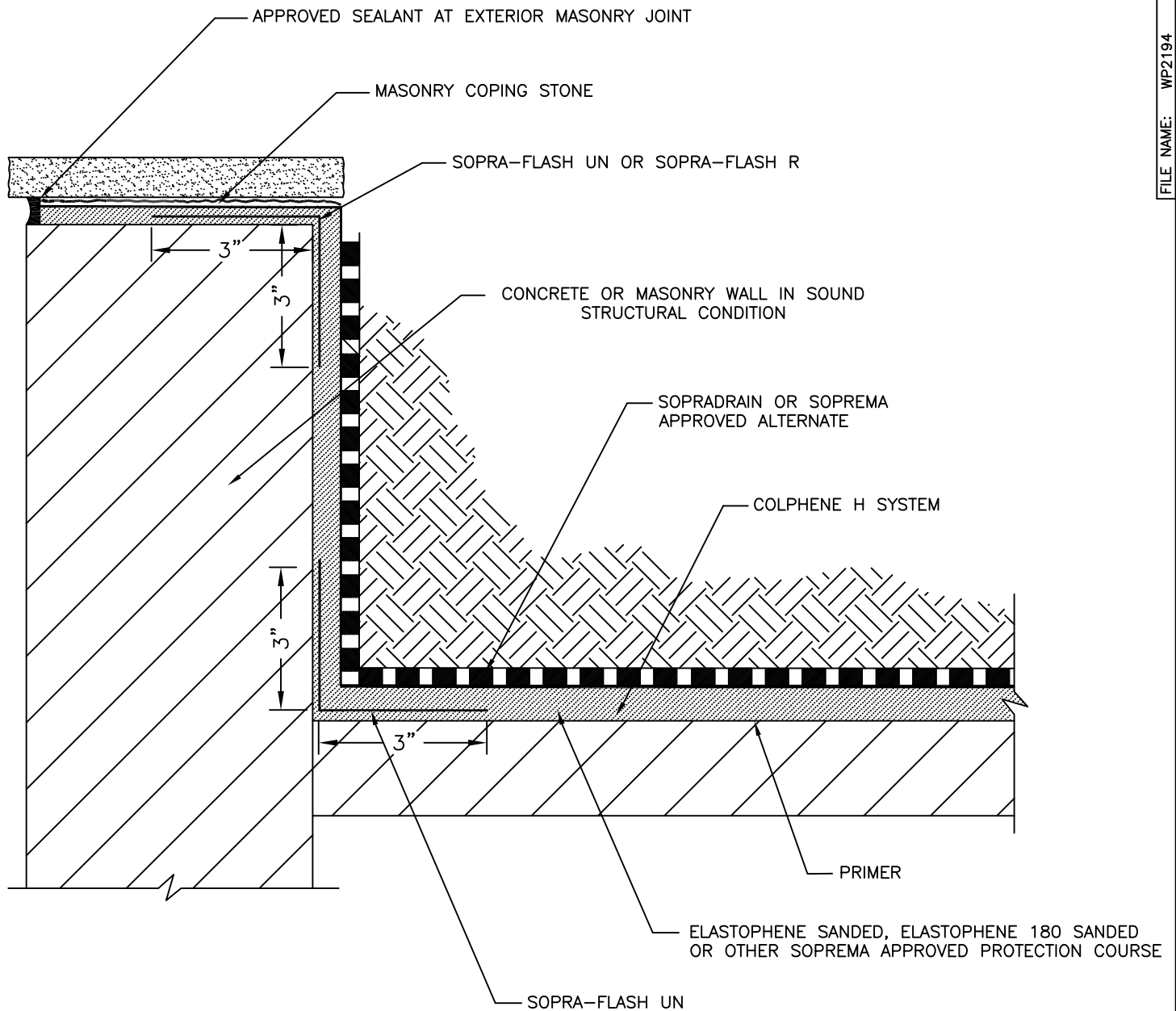


NOTES:

1. SOPRA-FLASH UN MUST BE USED AT ALL IRREGULAR SURFACE TRANSITIONS AND ALL DISSIMILAR SUBSTRATES, I.E. CONCRETE TO GYPSUM BOARD, CONCRETE TO WOOD, ETC.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
3. STAIR / STEP WALL TRANSITION REINFORCEMENT TO BE USED IN CONJUNCTION WITH APPROVED COLPHENE H WATERPROOFING ASSEMBLY. CONTACT SOPREMA.
4. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE. CALL SOPREMA FOR DETAILS


|  |      |  |           |
|--|------|--|-----------|
|  |      | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |      | TITLE<br>WALL STEP-UP FLASHING DETAIL                        |           |
| SCALE  | NONE | DWN<br>TM  | CHK<br>JP |
| DRAWING NUMBER   |      | APPROVAL DATE<br>11/25/09                                    |           |
| HRW-600  |      | REV<br>0   |           |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



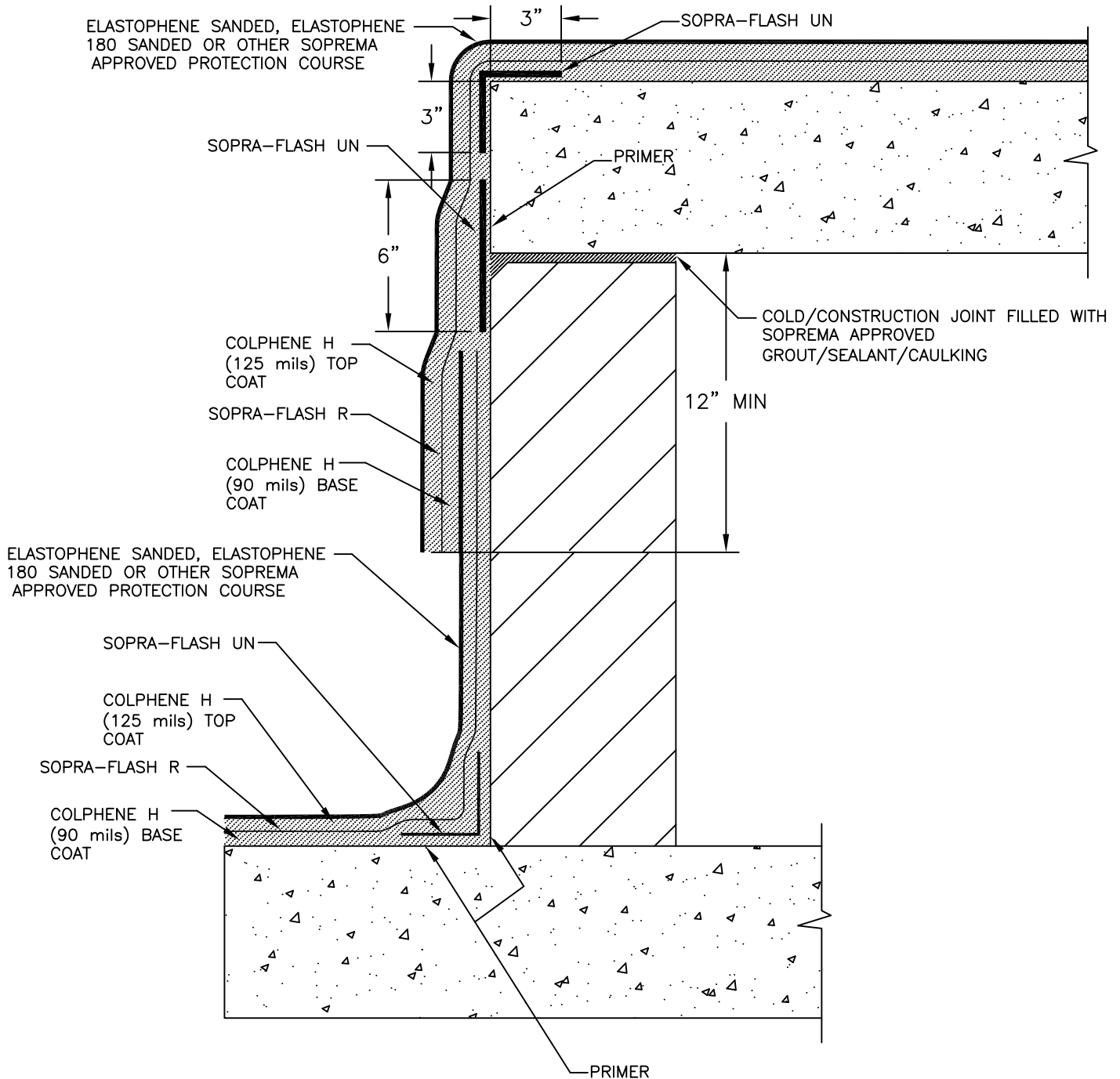
NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. FOR SPECIFIC INSTALLATION REQUIREMENTS, CONTACT SOPREMA.
3. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE. CALL SOPREMA FOR DETAILS

|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>PLANTER BOX WATERPROOFING CONCRETE/MASONRY KNEE WALL                        |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>11/25/09 |
| DRAWING NUMBER<br>HRW-601  |           |                       | REV<br>0                  |




DRAINBOARD AND/OR INSULATION NOT SHOWN  
FOR CLARITY



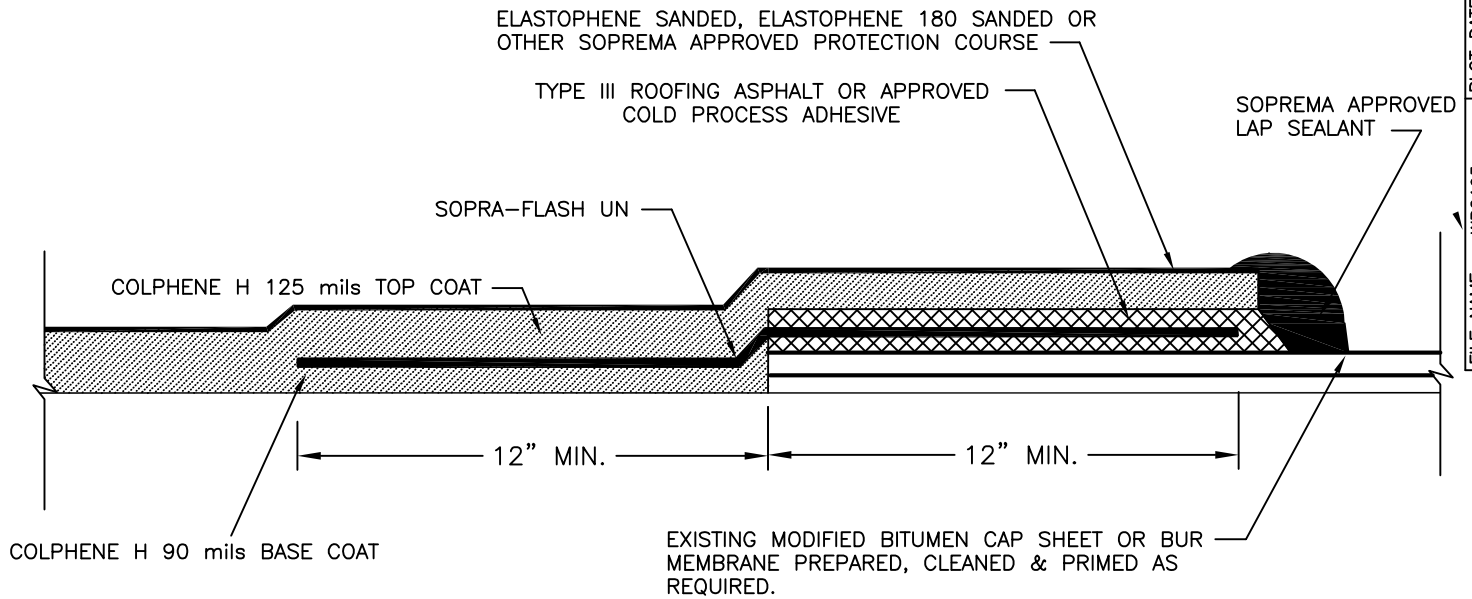
NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.
2. ELASTOPHENE 180 SANDED IF USED DOES NOT REQUIRE AN ADDITIONAL PROTECTION COURSE CALL SOPREMA FOR DETAILS

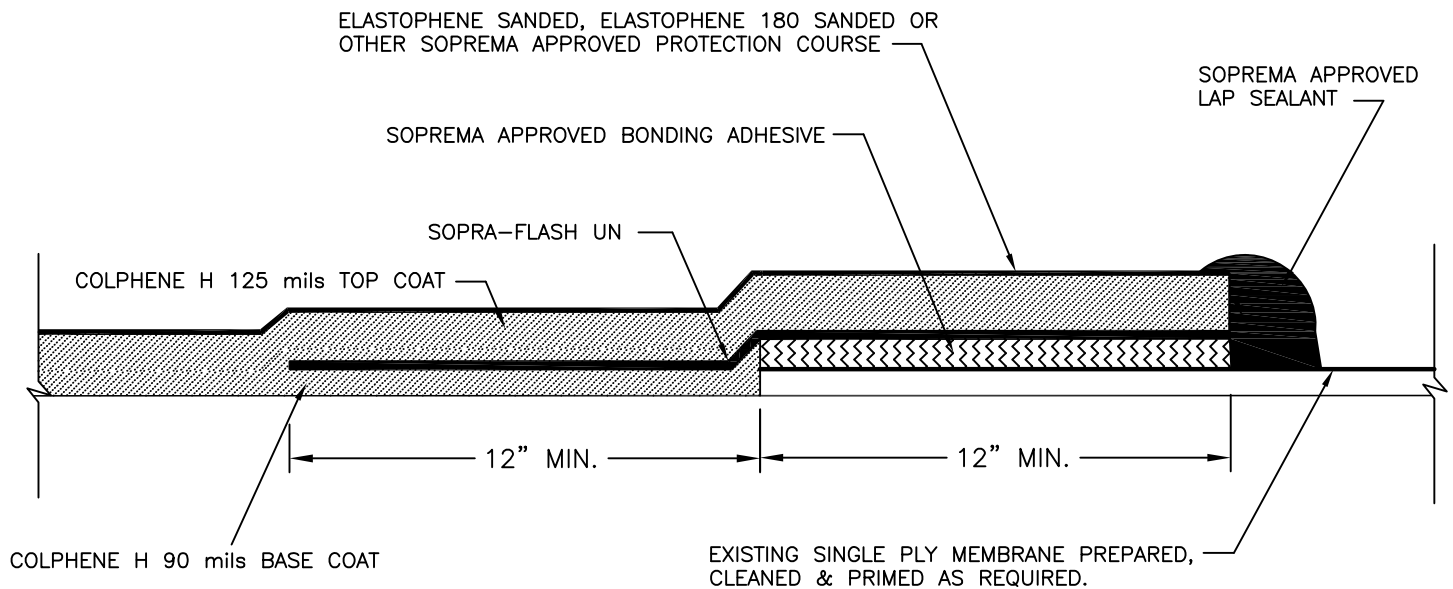
|  |           |                       |                           |
|--|-----------|-----------------------|---------------------------|
|  |           | 310 QUADRAL DRIVE     |                           |
|  |           | WADSWORTH, OHIO 44281 |                           |
|  |           | (330) 334-0066        |                           |
| TITLE<br>FOUNDATION WALL 215 MILS SYSTEM   |           |                       |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP             | APPROVAL DATE<br>12/22/09 |
| DRAWING NUMBER<br>HRW-602  |           |                       | REV<br>0                  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.






MODIFIED BITUMEN / BUR MEMBRANE  
OVERBURDEN NOT SHOWN

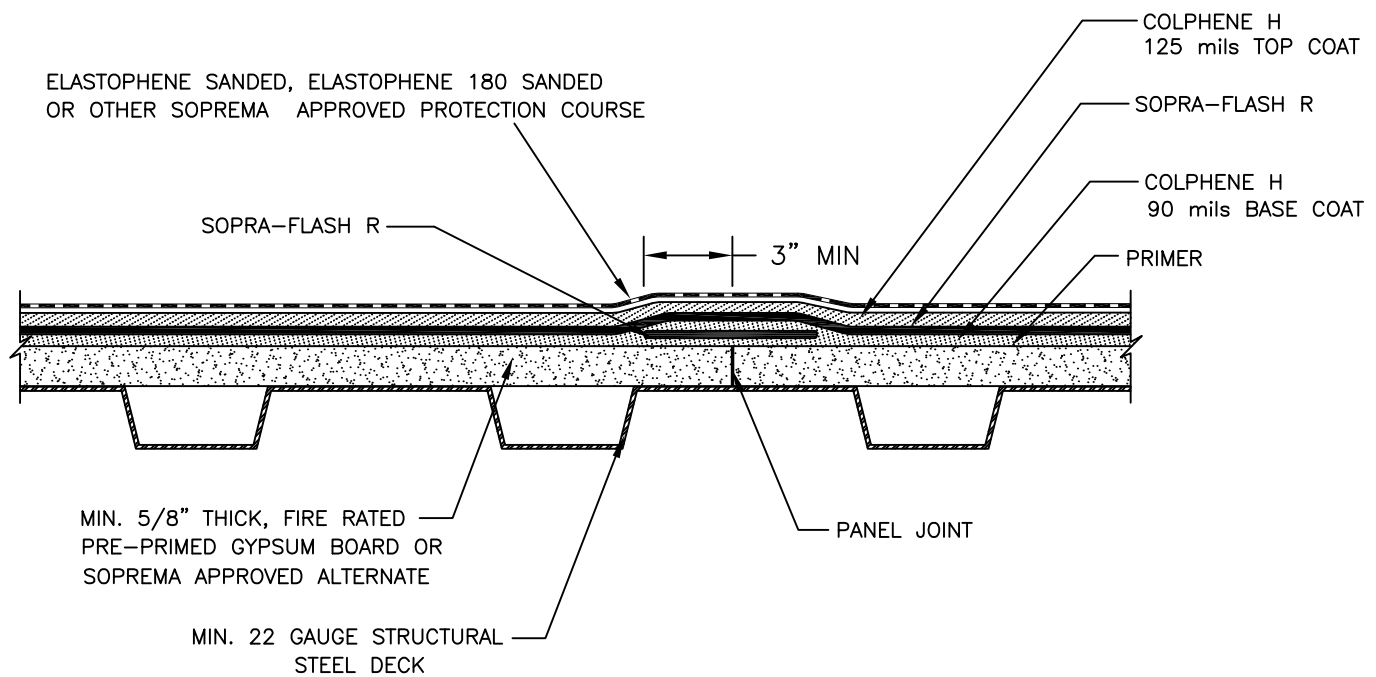


SINGLE PLY MEMBRANE  
OVERBURDEN NOT SHOWN

NOTES:


1. EXISTING MEMBRANE MANUFACTURERS SHOULD BE CONTACTED FOR SPECIFIC TIE-IN RECOMMENDATIONS.
2. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS, APPLICATION METHODS AND APPROVED DETAILS.

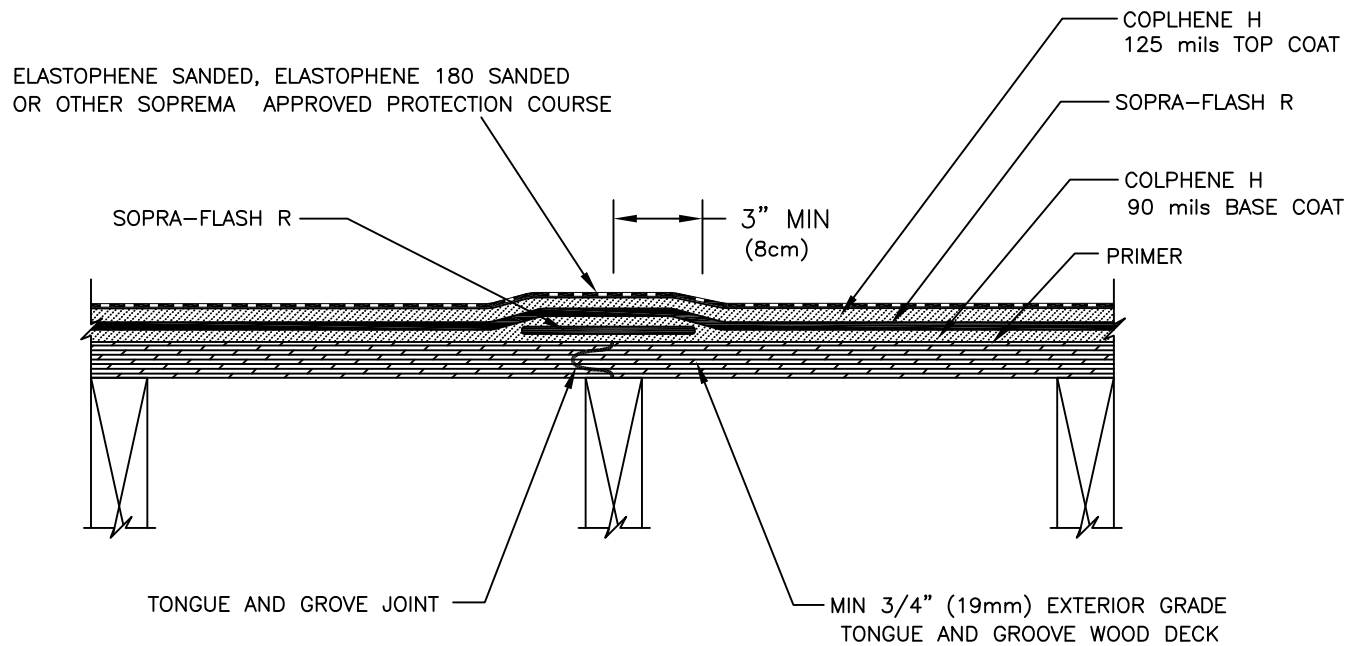
|  |           |  |                           |
|--|-----------|--|---------------------------|
|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           |  |                           |
| TITLE<br>TYPICAL TIE - IN DETAILS  |           |  |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP  | APPROVAL DATE<br>11/25/09 |
| DRAWING NUMBER<br>HRW-603  |           |  | REV<br>0                  |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. FOR SPECIFIC INSTALLATION REQUIREMENTS, CONTACT SOPREMA.
3. FILL ALL VOIDS IN JOINTS. ALL JOINTS GREATER THAN  $\frac{1}{4}$ " MUST BE REINFORCED WITH SOPRA-FLASH UN.

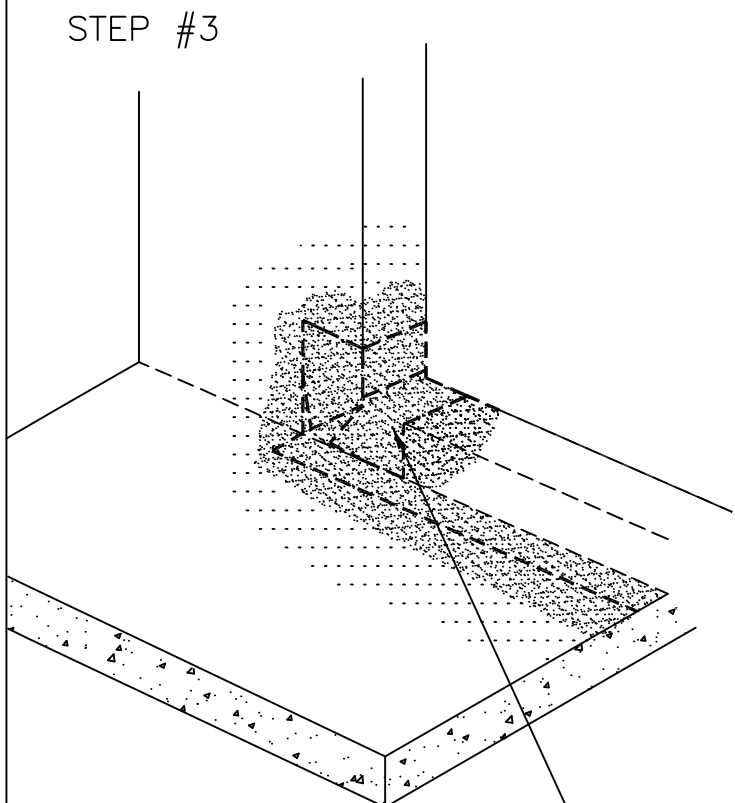
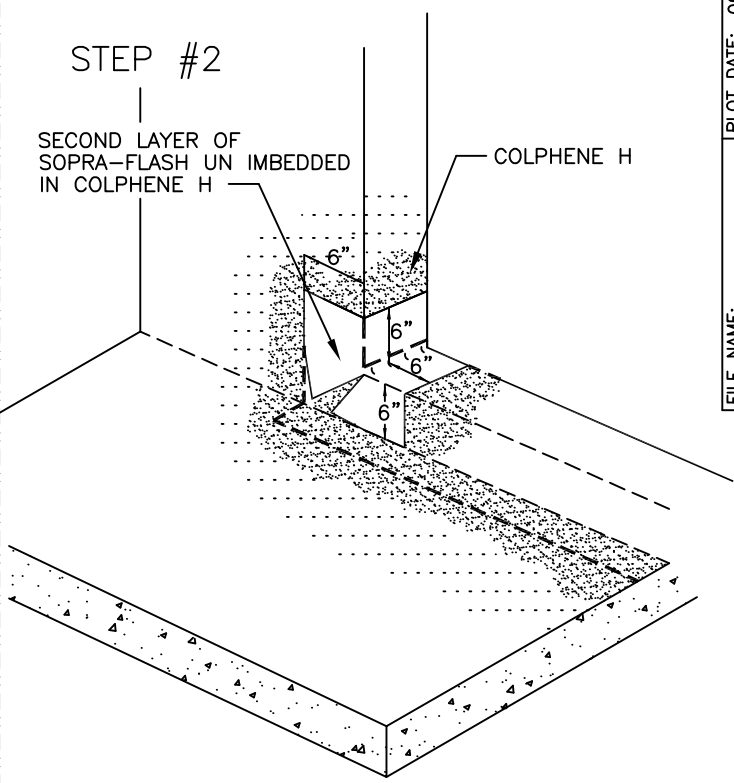
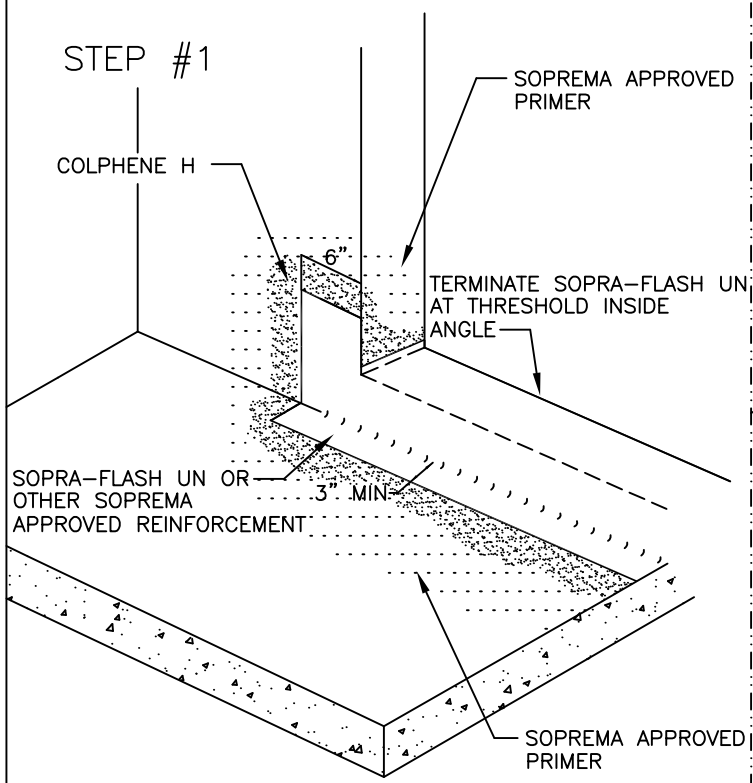
|  |           |   |                           |
|--|-----------|---|---------------------------|
|  |           | 310 QUADRAL DRIVE                       |                           |
|  |           | WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
| TITLE<br>METAL DECK W/ SHEATING  |           |   |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP                               | APPROVAL DATE<br>11/25/09 |
| DRAWING NUMBER<br>HRW-604  |           |   | REV<br>0                  |



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. FOR SPECIFIC INSTALLATION REQUIREMENTS, CONTACT SOPREMA.
3. FILL ALL VOIDS IN JOINTS. ALL JOINTS GREATER THAN 1/4" MUST BE REINFORCED WITH SOPRA-FLASH UN.


|  |           |   |                           |
|--|-----------|---|---------------------------|
|  |           | 310 QUADRAL DRIVE                       |                           |
|  |           | WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
| TITLE<br>PLYWOOD DECK-REINFORCED HR-TONGUE & GROVE PLYWOOD                           |           |   |                           |
| SCALE<br>NONE  | DWN<br>TM | CHK<br>JP                               | APPROVAL DATE<br>11/25/09 |
| DRAWING NUMBER<br>HRW-605  |           |   | REV<br>0                  |



COMPLETELY COAT REINFORCING MEMBRANE WITH COLPHENE H IMMEDIATELY AFTER INSTALLATION

**NOTES:**

1. SUBSTRATE MUST BE PRIMED PRIOR TO THE INSTALLATION OF NEW MATERIALS.
2. COMPLETELY ENCAPSULATE REINFORCEMENT WITH A TOP COATING OF COLPHENE H IMMEDIATELY AFTER INSTALLATION. DO NOT LEAVE EXPOSED OVERNIGHT.
3. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.

|  |      |                       |        |
|--|------|-----------------------|--------|
|  |      | 310 QUADRAL DRIVE     |        |
|  |      | WADSWORTH, OHIO 44281 |        |
|  |      | (330) 334-0066        |        |
| TITLE COLPHENE H ISOMETRIC THRESHOLD DETAIL  |      |                       |        |
| SCALE  | NONE | DWN TM                | CHK JP |
| DRAWING NUMBER   |      | APPROVAL DATE         |        |
| HRW-606  |      | 06/14/10              |        |
|  |      |                       | REV 0  |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



# ELASTOCOL 500

ELASTOCOL 500 (08)

Order No. D35735\*

\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Elastocol 500 Primer is a blend of elastomeric bitumen/solvents and when applied to typical concrete, metal or wood substrates\* that are properly prepared, clean and dry prior to a hot asphalt, cold adhesive or heat welded application methods being used, the adhesion of the membrane to that substrate increases. Old asphalt or other residue must be removed to the extent possible before priming in order to obtain acceptable membrane adhesion to the substrate. A clean dry Sopraboard substrate typically does not need priming prior to using these three Application Methods. During warm and/or sunny weather periods\*\*, Elastocol 500 can be used as a Self-Adhered (SA) Primer on top of a self-adhered field base membrane or inner ply on horizontal applications ONLY prior to a self-adhesive inner ply or field cap membrane being installed. Elastocol 500 Primer meets ASTM D 41 criteria and is available in a "spray" container, Order No. D204-A. See published Specifications and Approved Details.

\*\*Depending upon weather conditions including but not limited to ambient and self-adhesive material temperatures, humidity, wind, cloud and sun factors, the entire self-adhesive underside of the membrane including the seam area may need to be heat activated to insure acceptable adhesion and a watertight self-adhesive seam (roofer must test membrane and seam bonds to determine which method is required to insure proper bonding and watertight side and end laps). Certain weather conditions will require the side laps to be either heat welded or hot air welded closed. End laps and "T" Joints are sealed using hot air welding techniques or where applicable heat welding or flashing trowel grade cold adhesive.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL 500   |
|----------------------|---|
| Description          | elastomeric bitumen based primer  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L)   |
| Application          | 100 - 150 ft <sup>2</sup> /gal (0.4 - 0.6 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# AQUADERE

AQUADERE (09D)

Order No. S73225\*

Order No. S73225-A\*\*

\*For 1,000 Liter Tote (263 gallon)

\*\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Aquadere is a polymer emulsion-based primer designed to improve the adhesion of heat welded, hot asphalt and cold adhesive applied roofing and waterproofing membranes. Aquadere is applied to properly prepared horizontal and vertical surfaces prior to installation of flashing base membrane plies being installed. Acceptable surfaces are clean and dry concrete, metal, wood, or acceptable gypsum substrates. Aquadere can be used to prime the top surface of either an SBS base or inner ply prior to the flashing cap membrane being installed. Aquadere may be brush, roller, or spray applied.

### Aquadere Features and Benefits:

- May be used to prime base or ply sheet prior to installation of the ply or cap membrane.
- Brown when applied and black when ready to receive the membrane.
- Dries in one hour at 86° F (30° C) and three hours at 41° F (5° C).
- **Zero VOC's.**
- May be used anywhere Elastocol 500 is used over concrete, metal, or wood.

### Aquadere Limitations:

- Must be stirred or agitated before use.
- Store between 41° F (5° C) and 104° F (40° C); If stored at freezing; two days maximum at 32° F (0° C); it must be returned to 41° F (5° C) before use.
- This product is not suitable for plastic surfaces such as vinyl or water repellent treated panels.
- May not be used with self-adhered membranes.
- Minimum application temperature is 41° F (5° C) and rising.
- DO NOT THIN.

## COVERAGE & PACKAGING

| Product/<br>Property | AQUADERE  |
|----------------------|---|
| Description          | Brown liquid (dries black)  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L) pail or 263 gal. (1,000 L) tote   |
| Application          | 100 - 200 ft <sup>2</sup> /gal (0.4 - 0.8 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPRA-FLASH UN

UNCURED NEOPRENE

Order No. \*

\*Contact Customer Service for order number and availability.

## DESCRIPTION

SOPRA-FLASH UN is a heavy duty uncured neoprene flashing material designed to be flexible and conform to irregular surfaces and shapes, curing in place after installation. Intended for use when extreme or frequent movement is anticipated.

## USE & APPLICATION

SOPRA-FLASH UN is typically used in conjunction with COLPHENE H Rubberized Asphalt Bitumen at expansion joints and exposed flashing membranes, including vertical walls, penetrations and drains.

Surfaces to receive SOPRA-FLASH UN must be clean, smooth, dry, and free of oil, grease, and loose materials. When installing this product in COLPHENE H rubberized asphalt bitumen, the substrate must be primed with Elastocol 500 primer prior to the application of the COLPHENE H. Allow the primer to dry to a tack free condition before applying the COLPHENE H. Install the SOPRA-FLASH UN in a solid coat of COLPHENE H bitumen in accordance with recommended flashing details. Press SOPRA-FLASH UN into the bitumen while its hot taking care not to stretch the membrane or leave air pockets. Overlap successive layers three (3") inches (76 mm).

## FEATURES & BENEFITS

- Conforms to irregular surfaces and changes in plane
- Excellent flexibility and elongation
- Easy to install

## PACKAGING

SOPRA-FLASH UN is packaged in 100' (30.4 m) lengths and in standard widths of 6" (152 mm), 12" (305 mm), 18" (457 mm), 24" (610 mm) and 36" (914 mm).

## PHYSICAL PROPERTIES

| Property  | Test Method        | Test Value                   |
|---|--------------------|------------------------------|
| Thickness mils (mm)   | ASTM D 751         | 60 (1.5)                     |
| Tensile Strength psi, min   | ASTM D 412 (Die C) | 1887                         |
| Elongation, Ultimate (min %)  | ASTM D 412 (Die C) | 305                          |
| Tear Resistance (lb/in. min)  | ASTM D 624 (Die C) | 136                          |
| Brittleness Point @ -40° F  | ASTM D 2137        | No Breaks                    |
| Ozone Resistance - Condition after 100 pphm Ozone for 100 hrs @ 104° F (under 20% strain) | ASTM D 1149        | No Cracks @ 7X Magnification |
| Resistance to water change in mass, max, after 7 days immersion @ 158° F                  | ASTM D 471         | 8.5%                         |





# SOPRA-FLASH R

POLYESTER FABRIC

Order No. \*

\*Contact Customer Service for order number and availability.

## DESCRIPTION

SOPRA-FLASH R is a lightweight, thermally bonded spunlaid polyester/nylon composite mat specifically designed to reinforce Soprema COLPHENE H liquid membrane systems in base flashings, crack reinforcement, construction joints, penetrations, corners, and changes in plane.

## BASIC USE & APPLICATION

When assembling a COLPHENE H membrane system, SOPRA-FLASH R is installed into the base coat of the hot fluid applied COLPHENE H bitumen when it is hot and sticky. Standing off to the side of the sheet, use a broom or squeegee to press the reinforcement into the hot bitumen using care not to create wrinkles or fish-mouths. If the COLPHENE-FLASH R falls out of alignment, cut the mat, apply COLPHENE H to the six (6") inch (152 mm) overlap area, and restart installation. A top coat of COLPHENE H is applied over the SOPRA-FLASH R. Side laps are two (2") inches (51 mm).

## FEATURES & BENEFITS

- Excellent thermal stability and superior tear and puncture resistance
- Conforms to irregular surfaces and changes in plane
- Porosity allows for saturation and excellent interply bond between layers of membrane

## PACKAGING

SOPRA-FLASH R is packaged in rolls of 180 feet (54.8 m) in length by 36" (.914 m) and 6" (152 mm) in width. The weight per roll is 8.5 pounds (3.85 kg) for 36" wide rolls and 1.4 pounds (0.63 kg) for the 6" widerolls.

## LIMITATIONS

- SOPRA-FLASH R should not be stored exposed to the elements, Store the Rolls upright on pallets
- Do not install SOPRA-FLASH R when rubberized asphalt temperatures are 400° F (204.4° C) or more.

## PHYSICAL PROPERTIES

| Property                      | Test Method | Test Value |
|-------------------------------|-------------|------------|
| Mat Weight oz/yd <sup>2</sup> | NA          | 2.2        |
| Thickness mils (mm)           | ASTM D 1777 | 16 (0.4)   |
| Tensile Strength lbs/in (MD)  | ASTM D 5034 | 78         |
| Elongation at break % (MD)    | ASTM D 5034 | 58         |
| Tear Strength lbs (MD)        | ASTM D 1117 | 23.8       |
| Puncture Resistance lbs       | ASTM D 4830 | 31         |





# SOPRABOARD

SOPRABOARD (82)

Order No. \*

\* See chart on Page 2 or contact your Customer Service or Sales Representative

## DESCRIPTION

SOPRABOARD is designed for use with Soprema's SBS modified bitumen membrane roof assemblies. Additionally, SOPRABOARD can be used as a protection board in Soprema's waterproofing systems and assemblies. The R-Values for one-eighth (1/8") inch thick (3.2 mm) and (1/4") inch thick (6.4 mm) Sopraboard are 0.11 and 0.17 respectively. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

SOPRABOARD is secured to an acceptable substrate by mechanical fastening, hot asphalt or approved cold adhesive. SOPRABOARD is an acceptable replacement for cover boards over most insulation substrates. The roof membranes are either hot mopped, heat welded, self-adhered or bonded to the SOPRABOARD using Approved cold adhesives. REMOVE PLASTIC FILM SEPARATOR FOR ALL ASSEMBLIES.

## COMPOSITION

SOPRABOARD is a multi-ply, semi-rigid asphaltic roofing substrate board composed of a mineral fortified asphaltic core formed between two asphaltic saturated fiberglass liners. Sopraboard must be stored flat -- NO DOUBLE-STACKING OF PALLETS.

## SURFACE PREPARATION

Apply to approved, clean and dry substrate following SOPREMA Approved Requirements, Approved Details and acceptable roofing practices. Not designed for permanent exposure. Ensure deck is suitable for installation of specified roof assembly. On recover projects, remove gravel, dirt, prime surface and bond SOPRABOARD using approx. 60 lbs (27 kg) per 100 ft<sup>2</sup> (9.29 m<sup>2</sup>) hot asphalt or approved coverage rate using insulation adhesive. When SOPRABOARD is mechanically fastened, the existing substrate does not need priming.

Soprema Approved SA Primer is applied to the top surface of SOPRABOARD when a self-adhered base ply is used. Install self-adhesive membrane ONLY when rolls have been stored in 70° F. (21° C.) conditions and ambient temperature is 50° F. (10° C.) and rising. During cool, cloudy, windy periods (less than 70° F [21° C]) with high humidity (early morning or late afternoon especially) use external heating of the Sopraboard with slight heat on the self-adhesive membrane roll to activate the self-adhesive so as to ensure full adhesion to the board. Install Sopraboard using good roofing practices which include warming Sopraboard during cold weather application to allow Sopraboard to lay flat.



## SOPRABOARD PHYSICAL PROPERTIES

| Board Thickness<br>inch (mm) | Compressive strength @<br>15% ASTM<br>D 545 psi | Tensile strength<br>ASTM<br>D 412 psi | Water absorption,<br>2h % max.<br>ASTM C 209 | Moisture content<br>ASTM<br>D 644 | Flexibility<br>(2" mandrel)<br>ASTM D 644 | Peel strength       |
|------------------------------|---|---------------------------------------|--|-----------------------------------|---|---------------------|
| 1/8" (3.2)*                  | 630   | 1050                                  | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 3/16" (4.7)                  | 470   | 700                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |
| 1/4" (6.4)**                 | 440   | 450                                   | <1.0   | 0.2%                              | pass @ 40 F                               | 2.5 - 20.0 lb/in*** |

\* Meets ASTM D 6506, Class B, Type 2

\*\* Meets ASTM D 6506, Class B, Type 3

\*\*\* Depending upon primer and substrate used.

## APPROVALS

See Underwriters Laboratories, Inc. File No. R11436, FMG Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is 9001:2008 Certified. Sopraboard meets ASTM D 3273 (resistance to mold) requirements.

## WARRANTY

SOPREMA offers several warranty options dependent upon membrane combinations, system assembly, and environmental conditions. Contact your local SOPREMA representative for project warranty offerings.

## PACKAGING\*

| SOPRABOARD            |                |                           |               |           |
|-----------------------|----------------|---------------------------|---------------|-----------|
| SIZES                 | THICKNESS      | WEIGHTS**                 | SHEETS/PALLET | ORDER NO. |
| 4' X 4' (1.2 X 1.2 m) | 1/8" (3.2 mm)  | 14.4 lbs / sheet (6.5 kg) | 100           | D 08412   |
| 4' X 4' (1.2 X 1.2 m) | 3/16" (4.7 mm) | 21 lbs / sheet (9.5 kg)   | 55            | D 08414   |
| 4' X 4' (1.2 X 1.2 m) | 1/4" (6.4 mm)  | 27 lbs / sheet (12 kg)    | 60            | D 08416   |
| 4' X 5' (1.2 X 1.5 m) | 1/8" (3.2 mm)  | 18 lbs / sheet (8 kg)     | 100           | D 08410   |
| 4' X 5' (1.2 X 1.5 m) | 3/16" (4.7 mm) | 27 lbs / sheet (12 kg)    | 60            | D 08425   |
| 4' X 5' (1.2 X 1.5 m) | 1/4" (6.4 mm)  | 33 lbs / sheet (15 kg)    | 60            | D 08411   |
| 4' X 8' (1.2 X 2.5 m) | 1/8" (3.2 mm)  | 29 lbs / sheet (13 kg)    | 100           | D 08415   |
| 4' X 8' (1.2 X 2.5 m) | 3/16" (3.2 mm) | 43.5 lbs / sheet (20 kg)  | 55            | D 08413   |
| 4' X 8' (1.2 X 2.5 m) | 1/4" (3.2 mm)  | 55 lbs / sheet (25 kg)    | 40            | D 08423   |

\* DO NOT DOUBLE STACK PALLETS

\*\* Approximate Sheet Weight - All values are nominal per manufacturing tolerances.

\*\*\* Contact Customer Service or your Sales Representative





# ELASTOPHENE 180 SANDED

ELASTOPHENE 180 SANDED

Order No. 00210

## DESCRIPTION

ELASTOPHENE 180 SANDED is composed of selected SBS modified bitumen applied onto a polyester reinforcement with a sanded underside and high brush sanded topside surface.

## BASIC USE & APPLICATION

ELASTOPHENE 180 SANDED is primarily used as an alternative flashing membrane in lieu of Sopra-Flash UN (uncured neoprene) or as a protection sheet in an approved Sopraseal H waterproofing assembly. The ELASTOPHENE 180 SANDED membrane is installed with minimum two (2") inch (51 mm) sidelaps and four (4") inch (102 mm) end laps, or in accordance with specific project requirements.

See published Specifications and Approved Details.

## COMPOSITION & PACKAGING

| Product/<br>Property               | ELASTOPHENE 180 SANDED                                   |
|------------------------------------|--|
| Reinforcement                      | polyester  |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | lightly sanded   |
| Underside                          | lightly sanded   |
| Approximate Nominal Thickness      | 90 mils (2.2 mm)   |
| Approximate Roll Coverage          | 147 ft <sup>2</sup> (13.6 m <sup>2</sup> )               |
| Side Lap                           | 2" (51 mm)   |
| End Lap                            | 4" (102 mm)  |
| Roll Length                        | 49 ft (15 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 92 lbs (41.7 kg)   |
| Rolls per Pallet*                  | 30   |
| * Rolls stocked upright on pallets |  |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## PHYSICAL PROPERTIES

| Physical Property per ASTM D 6164,<br>Type I, Grade S   | MD   | XD   |
|---|------|------|
| Tensile - Max Load at $0 \pm 3.6^{\circ}\text{F}$ lbf/in  | 117  | 83   |
| Elongation at $0 \pm 3.6^{\circ}\text{F}$ %   | 29   | 22   |
| Tensile - Max Load at $73.4 \pm 3.6^{\circ}\text{F}$ lbf/in   | 70   | 70   |
| Elongation at $73.4 \pm 3.6^{\circ}\text{F}$ %  | 56   | 61   |
| Tear Strength at $73.4 \pm 3.6^{\circ}\text{F}$ lbf   | 120  | 87   |
| Low Temperature Flex $^{\circ}\text{F}$ max   | -15  | -15  |
| Dimensional Stability % max   | <0.5 | <0.5 |
| Compound Stability Temp F   | 215  | 215  |
| Puncture Resistance* lbf  | 90   | N/A  |
| *Tested per ASTM D 5602<br>Minimum values before and after Heat Conditioning<br>Test results for manufacturing plant in Wadsworth, OH |      |      |

## APPROVALS

Soprema is ISO-9001:2000 Certified.

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. Today, through a special mixture of components, SOPREMA membranes redefine the qualities indispensable to a high performance roof membrane: elasticity, flexibility, heat & fatigue resistance.



# SBS ELASTIC CEMENT

SBS ELASTIC CEMENT (11)

Order No. D35635

## DESCRIPTION

SBS ELASTIC CEMENT is a ready to use, elastomeric bitumen based mastic which contains a bituminous binder with sticking agents/solvents and is used on flat or 1/4": 12" or less horizontal slopes for setting drain leads, penetration pockets, pipe flanges, metal gravel stops, etc. This product meets ASTM D 4586, Type I, Class II.

SBS ELASTIC CEMENT may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS ELASTIC CEMENT   |
|----------------------|--|
| Description          | elastomeric bitumen general adhesive   |
| Installation         | special extrusion gun or patch   |
| Packaging            | 5 gallon pail (18.9 L)   |
| Application          | 70 to 140 ft <sup>2</sup> /gal.<br>(0.28 to 0.57 L/m <sup>2</sup> ),<br>depending on surface |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.





# SBS MASTIC

SBS MASTIC (12)

Order No. D35651

## DESCRIPTION

SBS MASTIC is made from synthetic rubbers plasticized with bitumen and solvents. SBS MASTIC is provided in a cartridge container and used as a sealant to fill the void area on all self-adhered field and flashing base ply membrane side lap edges not having a bitumen bleed-out and on self-adhered membrane T-joints. This sealant can be applied to the seam edges before or after the Elastocol 500 (horizontal surfaces ONLY) or Elastocol 600c SA Primer (horizontal or vertical surfaces) is applied to Soprema high brush sanded SBS base membrane ply surfaces or self-adhesive field or base flashing membrane ply or inner ply surface prior to the next membrane layer being adhered. This product meets ASTM D 4586, Type I, Class II.

SBS MASTIC may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS MASTIC  |
|----------------------|---|
| Description          | sealant compound  |
| Installation         | standard cartridge gun  |
| Packaging            | caulking tube<br>10.4 oz. (310 ml)  |
| Application          | coverage varies according to size of bead,<br>temperature at application and<br>technique used by installer |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.





# ALSAN FLASHING

Alsan Flashing (5 gallons) (10)  
Alsan Flashing (1 gallon) (10A)

Order No. D32800  
Order No. D32825

## DESCRIPTION

ALSAN Flashing is a patented polyurethane/bitumen resin, single-component, and moisture-cured compound that utilizes low solvent technologies.

ALSAN PolyFleece is a flexible reinforcement that is embedded into the first layer of ALSAN Flashing Base Coat and then covered over with additional Base Coat material. ALSAN PolyFleece is available in various widths, but typically the four (4") inch wide (102 mm) reinforcement is installed at change of plane junctures, angles or at other stress points. See published Specifications and Approved Details.

Used in combination, ALSAN Flashing and ALSAN PolyFleece create a watertight, puncture & UV resistant liquid applied flashing or field membrane Roof Assembly (ALSAN Flashing System). The ALSAN Flashing System is applied to properly prepared perimeter edge metal, curbs, roof penetrations, columns, parapet walls and area dividers (Restrained/supported wall constructions only). The ALSAN Flashing System can also be used as either a reinforcing ply over existing field membrane seams and joints, surfacing layer over field membrane where ponding water occurs or as a stand-alone liquid membrane roof assembly.

ALSAN Flashing may be used as an approved accessory for Soprema waterproofing systems.

## APPLICATION INSTRUCTIONS

ALSAN Flashing is compatible with Soprema SBS modified bitumen membranes as well as other types of commercial grade roofing membranes and building component surfaces. It is easy to apply and requires only simple tools. ALSAN Flashing consists of two coats: Base Coat and Finish Coat. Additional layers may be required when specific job conditions exist. Stir ALSAN Flashing prior to application.

Surfaces must be structurally sound, dry, clean, including but not limited to: free of dirt, moisture, loose particles, oil, grease, tar, paint, wax, rust and concrete curing and parting compounds. All surfaces must be mechanically prepared to remove previous coatings, laitance, and all miscellaneous surface contamination and to provide a profile for proper adhesion.

When coatings cannot be removed or if a surface is questionable, field test to determine proper adhesion or which ALSAN Primer may be required to insure acceptable adhesion. Priming is usually not required on clean, dry plywood, concrete, metal (without manufacturing oils) and other cured and dry masonry surfaces. When in doubt, contact the Soprema Technical Department.

Neither apply ALSAN Flashing when substrates are over 187° F (86° C), under 40° F (4° C) nor when inclement weather is anticipated.

When ALSAN Flashing Base Coat has been exposed for more than seven (7) days, apply ALSAN Primer H80 or ALSAN Trafik HP 510 Zero at a rate of 200-250 square feet per gallon to the existing Base Coat surface. Allow a minimum drying time for H80 Primer of 2-6 hrs. depending upon drying conditions. If the ALSAN Flashing Finish Coat (or next layer of Base Coat) is not applied to the dry H80 primed substrate within 36 hours (At 68° F, [20° C]) then the existing Base Coat must be re-primed.



## APPLICATION INSTRUCTIONS (CONTINUED)

**Apply ALSAN Flashing Base Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>) onto the vertical and horizontal substrates extending the Base Coat a minimum one (1") inch (25 mm) past the point where the ALSAN PolyFleece reinforcement will be placed. Immediately center and embed the ALSAN PolyFleece into the wet (not skinned over) ALSAN Flashing Base Coat. Extend ALSAN PolyFleece a min. one (1") inch (25 mm) vertically and a min. two (2) in. (51 mm) out onto the horizontal surface without wrinkles or folds. ALSAN PolyFleece must overlap previous piece by two (2) inches (51 mm) on side and end laps.

**Apply ALSAN Flashing Embedment Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>). Coat over the ALSAN PolyFleece to ensure that it is completely embedded, covered and watertight.

**Apply ALSAN Flashing Finish Coat** at a rate of 32 wet mils (2.0 gal/100 ft<sup>2</sup>) or that additional amount to insure the substrate is watertight. Base Coat must be clean, dry, set-up and/or primed (when required) prior to the application of the ALSAN Flashing Finish Coat.

ALSAN Flashing Finish Coat can be applied to the existing Base Coat after thirty minutes. In cool weather conditions, Base Coat set-up time can vary from between thirty-minutes up to several hours before applying a next layer of Base Coat or the Finish Coat.

As an option, after initial tack to the top-surface, apply matching color ceramic granules pressing them into the Finish Coat.

## APPROVED THERMAL INSULATIONS & COVERBOARDS

ALSAN Flashing and ALSAN PolyFleece can be used as a liquid membrane roof assembly when applied onto the following thermal insulation and cover boards:

- Sopraboard, 1/8 in. min. (3.2 mm)
- High Density Wood Fiber Board (HDWFB) coated six sides, 1/2 in. min. (13 mm)
- Plywood, 1/2 in. min. (13 mm), structural use panels, 7/16 in. min (11 mm).
- DensDeck, 1/4 in. min. (6 mm) Min. 1/2 or 5/8 in. (13 to 16 mm) required for FM Approvals thermal barriers)
- Polyisocyanurate\* flat stock, 1.4 in. min. (36 mm), polyisocyanurate\* tapered system, 1/2 in. (13 mm) min. with approved cover boards\*.
- FM Approvals Listed vapor retarders, Sopralene Flam 180 or Sopralene 180 SP 3.5mm (heat welded only); Elastophene HD, Elastophene 180 Sanded, Sopralene 180 Sanded, Soprabase, Sopraglass Premium Base Sheet, Modified Sopra-G, hot mopped or adhered with Soprema cold adhesive to properly prepared, clean, dry and primed (where required) or these membranes or base sheets are mechanically fastened to acceptable substrates prior to the application of the ALSAN Flashing System.
- Contact Soprema for other possible Approved Substrates

\*Note: Industry standards recommend, FM Approvals and in some cases UL requires cover or rigid board be installed on top of polyisocyanurate insulations when applying liquid membrane roof assemblies. Generic cover boards are listed above. Contact Soprema for additional information on currently Approved polyisocyanurate insulation boards that can receive a direct application of ALSAN Flashing to the board facer.





## LIMITATIONS

All coverage rates are approximate, theoretical and do not account for waste, spillage, irregular surfaces and roof mechanic and/or roofing contractor's supervisor or Architect of Record on-site inspector instructions or their acceptance of per job application techniques. The contractor is ultimately responsible to determine, day-to-day limitations and when to terminate work on a given day because of those job-site limitations, how to maintain acceptable application and coverage ranges, and is responsible to complete the ALSAN Flashing System that is acceptable to Soprema to issue a warranty and in effect successfully finished the roof assembly in accordance with Soprema General Requirements, ALSAN Flashing Approved Details and Product Data Sheets.

ALSAN Flashing can be applied in cold temperatures. However, application coverage rates can vary depending upon ALSAN Flashing, surface and ambient temperatures. Use electric pail warmers to insure ALSAN Flashing temperatures at the point of application will still provide acceptable wet and dry mil thicknesses.

Do not apply to wet, damp surfaces or to new single ply membranes.

Store ALSAN Flashing in original containers, upside down and on the shaded side of roof or in a storage building meeting all federal, state and local regulations. Maximum storage temperature not in direct sunlight is 90° F (32° C). Container pressure may increase with temperature. Handle and open container with care. Use impervious gloves and eye protection.

KEEP OUT OF THE REACH OF CHILDREN. KEEP AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. Avoid contact with eyes, skin or clothing and wash thoroughly after handling. DO NOT take internally. Adequate ventilation MUST be used. Use impervious gloves and eye protection. If area is poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations. Keep container lid sealed when not using. Observe all warning labels until container is commercially reconditioned and/or cleaned.

High vapor concentrations may cause depression of central nervous system. This product contains isocyanate. May cause sensitization by inhalation and by contact with skin. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000.

## WARRANTY

Contact your local Soprema representative for project warranty offerings.





# ALSAN POLYFLEECE

## DESCRIPTION & INSTALLATION

Soprema Alsan PolyFleece is flexible, non-woven, spanlaced polyester fabric reinforcement used in Soprema Alsan cold liquid-applied one-component polyurethane reinforced roofing and waterproofing membrane systems to improve tear strength, puncture resistance, flexural fatigue and crack bridging capabilities while maintaining membrane uniformity.

Soprema Alsan PolyFleece is recommended and widely used as flashing reinforcement with Alsan Flashing and other Alsan liquid-applied one-component polyurethane resins. It is highly flexible, conforms to any shape, irregular penetrations and other surfaces. It has excellent coating saturation capabilities into elastomeric polyurethane resins.

Mix and apply Soprema Alsan resin in strict accordance with Soprema instructions. Apply mixed resin liberally to the prepared surface with a roller using a broad, even stroke. Roll out spanlaced polyester fleece onto the liquid resin, making sure that the roll is unrolling smooth and without any wrinkles or fish mouths. The fleece will begin to rapidly saturate with the liquid resin. Allow the fleece to saturate with resin from bottom up. Using a roller, wet the fleece with resin applying light pressure. Roll the fleece with a medium nap roller to eliminate any air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of fleece until fully saturated and the layer of resin is fully and evenly applied. The coat should be smooth and uniform. The amount of resin applied at the top of the fleece surface should not leave visible whiteness in fleece. Additional finish coat, granules and/or quartz silica aggregate broadcasting may be required if specified.

Soprema Alsan PolyFleece rolls are available in nominal widths and sizes:

| Fleece width | Fleece length   | Gross coverage | Order Number |
|--------------|-----------------|----------------|--------------|
| 4 in.        | 50 ft. (15.3 m) | 16 sf          | S972         |
| 6 in.        | 50 ft. (15.3 m) | 25 sf          | S971         |
| 8 in.        | 50 ft. (15.3 m) | 33 sf          | S968         |
| 39 in.       | 50 ft. (15.3 m) | 164 sf         | S970         |

Allow for 2" minimum overlap at field and flashing membrane side laps, minimum 4" overlap at all end laps and minimum 4" overlap at all flashings and tie-ins.

## CHARACTERISTICS

| Product/Property   | ALSAN POLYFLEECE       |           |
|--------------------|------------------------|-----------|
| Color              | White                  |           |
| Fiber content      | 100% Polyester         |           |
| Physical state     | Solid                  |           |
| Construction       | Stitch bond            |           |
| Weight             | 2.4 oz./square yard    |           |
| Width              | Variable / per request |           |
| Nominal thickness  | 30 mils                |           |
| Grab tensile (lbs) | MD 44 lbs              | XD 25 lbs |
| Mullen burst (psi) | 70 lbs.                |           |



## HANDLING AND STORAGE

Always store in cool and dry location. Store rolls in stand-up position to avoid flattening and deforming.

Shelf life: Indefinite with proper storage.

## SPECIAL INDICATIONS

Safety Instruction:

- Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product.
- Soprema Alsan Fleece may be disposed of in standard landfills. For more information, refer to instruction on the label of the package and to relevant Material Safety Data Sheet (MSDS).
- Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

Quality control:

SOPREMA has always attached the highest importance to Quality Control. For this reason, we operate an internationally recognized Quality System according to ISO 9001:2000, with the system independently monitored and certified by AFAQ-Association Française d'Assurance Qualité (French Main Quality Certification Office).

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes and a manufacturer of liquid membrane systems with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. SOPREMA has been at the forefront of liquid membrane technology for nearly two decades.



# ALSAN RS 230 FLASH

Alsan RS 230 Flash (Summer Formulation)

Order No. L-RS022S

Alsan RS 230 Flash (Winter Formulation)

Order No. L-RS022W

## DESCRIPTION & APPLICATION

Alsan RS 230 Flash is a high performance two-component rapid curing PMMA acrylic resin formulation used in Alsan RS cold liquid-applied membrane system applications.

### PRODUCT USES:

Alsan RS 230 Flash resin is combined with fleece fabric to form a monolithic, self flashing and self-adhering reinforced field membrane designed for use in interior and exterior new, tear-off and recovery applications.

Alsan RS 230 Flash may be used as an approved accessory for Soprema waterproofing systems.

### COLOR:

Alsan RS 230 Flash is available in Pebble Grey (RAL #7032) and White (RAL #9016, Order No. L-RS024S).

### VOC:

Alsan RS 230 Flash (winter and summer formulation) maximum content 54.34 g/L (catalyzed) as applied.

### PACKAGING:

Alsan RS 230 Flash resin (winter & summer formulation) is supplied in a 12-kg re-sealable container with locking ring.

### STORAGE:

Shelf life: 12 months in original unopened container. Always store closed containers in cool, ventilated and dry location away from heat and oxidizing agents. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C). Storing the containers above the recommended temperature may reduce the product's shelf life. The resin may polymerize at temperatures above 140°F (60°C). Avoid direct sunlight and heat source when storing products on project site.

### HANDLING:

Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product. Cured product may be disposed of in standard landfills. Uncured product is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NIOSH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

### MIXING:

Using a slow-speed (200 to 400 rpm) mechanical agitator, thoroughly mix the entire container of resin for two minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for two minutes and apply to substrate. Refer to Catalyst Dosages chart below for additional information.

### SURFACE PREPARATION:

Refer to Soprema Alsan RS "Substrate Preparation & Priming Guidelines" for information and requirements. Contact Soprema Technical Department for recommendations regarding specific applications.

### APPLICATION:

After mixing, apply resin to clean and prepared substrate at the required consumption using Soprema rollers, brushes or notched squeegee. The resin should be spread evenly onto the surface. See individual system specifications for specific guidelines regarding application of primer, membrane, topcoat and/or slip-resistant protective surfacing.



# ALSAN RS 230 FLASH

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### TECHNICAL INFORMATION

#### TEMPERATURE APPLICATION RANGES

|                    | Ambient temperature        | Substrate temperature      |
|--------------------|----------------------------|----------------------------|
| Summer formulation | 37° - 95°F<br>(3° - 35°C)  | 37° - 122°F<br>(3° - 50°C) |
| Winter formulation | 23° - 50°F<br>(-5° - 10°C) | 23° - 59°F<br>(-5° - 15°C) |

Substrate must not exceed a maximum six percent moisture content and maximum 96% relative humidity.

#### COVERAGE RATES

|                           |                                     |
|---------------------------|-------------------------------------|
| Minimum total consumption | 0.28 kg/sf (3.0 kg/m <sup>2</sup> ) |
| Base coat minimum         | 0.19 kg/sf (2.0 kg/m <sup>2</sup> ) |
| Top coat minimum          | 0.09 kg/sf (1.0 kg/m <sup>2</sup> ) |

See recommendations for specific applications. Yields will vary depending upon substrate condition.

#### CATALYST MIXING CHART

| Resin Quantity | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
|                | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 12.0 kg        | .48   | 48   | 5           | 0.24   | 24   | 2.5         |

#### SET TIMES AT GIVEN TEMPERATURE

|                                    |                                 |                                  |
|------------------------------------|---------------------------------|----------------------------------|
| Ambient temperature                | 32°F (0°C) [Winter Formulation] | 68°F (20°C) [Summer Formulation] |
| Pot life:                          | 20 minutes                      | 15 minutes                       |
| Rain proof after:                  | 45 minutes                      | 30 minutes                       |
| Set time / walked on / next layer: | 90 minutes                      | 60 minutes                       |
| Fully cured:                       | 6 hours                         | 3 hours                          |

Pot life is dependent on ambient temperatures and will be reduced at higher temperatures. Minimum set times are approximate and may vary. Actual set times and cure times should be established in the field, based on actual field conditions.

#### PHYSICAL PROPERTIES

| Property (as installed)                     | Values / Units        | Test Method            |
|---|-----------------------|------------------------|
| Membrane thickness                          | 115 mils (2.9 mm)     | ASTM D 5147 Section 5  |
| Peak load @ 73°F, avg.                      | 70 lbf/in (12.3 kN/m) | ASTM D 5147 Section 6  |
| Elongation @ peak load, avg.                | 42%                   | ASTM D 5147 Section 6  |
| Peak load @ 73°F, avg.                      | 90 lbf/in (15.8 kN/m) | ASTM D 412 (dumbbell)  |
| Elongation @ peak load, avg.                | 55%                   | ASTM D 412 (dumbbell)  |
| Shore A hardness, avg.                      | 81                    | ASTM D 2240            |
| Water absorbtion, (Method I) (24h @ 73°F)   | 0.41%                 | ASTM D 570             |
| Water absorbtion, (Method II) (48h @ 122°F) | 1.57%                 | ASTM D 570             |
| Low temperature flexibility                 | -13° F (-25°C)        | ASTM D 5147 Section 11 |
| Dimensional stability (maximum movement)    | -0.063%               | ASTM D 5147 Section 10 |
| Tear strength                               | 107 lbf (0.5 kN)      | ASTM D 5147 Section 7  |

Values based on reinforced Alsan RS Systems at a coverage rate of 3.3 kg/m<sup>2</sup>



# ALSAN POLYFLEECE

ALSAN PolyFleece 4" (10B)  
ALSAN PolyFleece 6" (10C)  
ALSAN PolyFleece 8" (10D)  
ALSAN PolyFleece 39" (10E)

Order No. S972  
Order No. S971  
Order No. S968  
Order No. S970

## DESCRIPTION

ALSAN PolyFleece is high-performance, spun-laced polyester fabric reinforcement. ALSAN PolyFleece has excellent coating saturation capabilities into elastomeric coatings and epoxy primers. ALSAN PolyFleece is flexible and conforms to metal roof standing seams, metal corrugations and other irregular penetrations. ALSAN PolyFleece is available in widths of 4-, 6-, 8- and 39-inch widths. All ALSAN PolyFleece widths are available in fifty (50') foot (15.2 m) lengths.

When ALSAN PolyFleece is used in combination with ALSAN Flashing or other ALSAN Liquid Membrane Systems, a watertight, puncture & UV resistant liquid applied flashing or field membrane is formed.

## APPLICATION INSTRUCTIONS

Surfaces must be structurally sound, dry, clean, including but not limited to: free of dirt, moisture, loose particles, oil, grease, tar, paint, wax, rust and concrete curing and parting compounds. All surfaces must be mechanically prepared to remove previous coatings, laitance, and all miscellaneous surface contamination and to provide profile for proper adhesion.

When coatings cannot be removed or if a surface is questionable, field test to determine proper adhesion or which ALSAN Primer may be required to insure acceptable adhesion. Review individual ALSAN System Application Instructions to determine when priming and/or use of ALSAN PolyFleece reinforcement is either recommended or required. When in doubt, contact the Soprema Technical Department.

The ALSAN Systems (ALSAN Coating and ALSAN PolyFleece) are applied to perimeter edge metal, curbs, roof penetrations, columns, parapet walls and area dividers (Restrained/supported wall constructions only). ALSAN Systems can be used as either a reinforcing ply over existing field membrane seams and joints, surfacing layer over field membrane where ponding water occurs or as a stand-alone liquid membrane roof assembly.

ALSAN PolyFleece is typically embedded into the ALSAN Base Coat material. Afterward the ALSAN PolyFleece is covered with additional Base Coat material to ensure that it is completely embedded and watertight. Additional layers may be required when specific job conditions exist. Apply ALSAN System Finish Coat.

See published Specifications and individual ALSAN Product Data Sheets and Approved Details.







# ALSAN POLYFLEECE

## DESCRIPTION & INSTALLATION

Soprema Alsan PolyFleece is flexible, non-woven, spanlaced polyester fabric reinforcement used in Soprema Alsan cold liquid-applied one-component polyurethane reinforced roofing and waterproofing membrane systems to improve tear strength, puncture resistance, flexural fatigue and crack bridging capabilities while maintaining membrane uniformity.

Soprema Alsan PolyFleece is recommended and widely used as flashing reinforcement with Alsan Flashing and other Alsan liquid-applied one-component polyurethane resins. It is highly flexible, conforms to any shape, irregular penetrations and other surfaces. It has excellent coating saturation capabilities into elastomeric polyurethane resins.

Mix and apply Soprema Alsan resin in strict accordance with Soprema instructions. Apply mixed resin liberally to the prepared surface with a roller using a broad, even stroke. Roll out spanlaced polyester fleece onto the liquid resin, making sure that the roll is unrolling smooth and without any wrinkles or fish mouths. The fleece will begin to rapidly saturate with the liquid resin. Allow the fleece to saturate with resin from bottom up. Using a roller, wet the fleece with resin applying light pressure. Roll the fleece with a medium nap roller to eliminate any air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of fleece until fully saturated and the layer of resin is fully and evenly applied. The coat should be smooth and uniform. The amount of resin applied at the top of the fleece surface should not leave visible whiteness in fleece. Additional finish coat, granules and/or quartz silica aggregate broadcasting may be required if specified.

Soprema Alsan PolyFleece rolls are available in nominal widths and sizes:

| Fleece width | Fleece length   | Gross coverage | Order Number |
|--------------|-----------------|----------------|--------------|
| 4 in.        | 50 ft. (15.3 m) | 16 sf          | S972         |
| 6 in.        | 50 ft. (15.3 m) | 25 sf          | S971         |
| 8 in.        | 50 ft. (15.3 m) | 33 sf          | S968         |
| 39 in.       | 50 ft. (15.3 m) | 164 sf         | S970         |

Allow for 2" minimum overlap at field and flashing membrane side laps, minimum 4" overlap at all end laps and minimum 4" overlap at all flashings and tie-ins.

## CHARACTERISTICS

| Product/Property   | ALSAN POLYFLEECE       |           |
|--------------------|------------------------|-----------|
| Color              | White                  |           |
| Fiber content      | 100% Polyester         |           |
| Physical state     | Solid                  |           |
| Construction       | Stitch bond            |           |
| Weight             | 2.4 oz./square yard    |           |
| Width              | Variable / per request |           |
| Nominal thickness  | 30 mils                |           |
| Grab tensile (lbs) | MD 44 lbs              | XD 25 lbs |
| Mullen burst (psi) | 70 lbs.                |           |



## HANDLING AND STORAGE

Always store in cool and dry location. Store rolls in stand-up position to avoid flattening and deforming.

Shelf life: Indefinite with proper storage.

## SPECIAL INDICATIONS

Safety Instruction:

- Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product.
- Soprema Alsan Fleece may be disposed of in standard landfills. For more information, refer to instruction on the label of the package and to relevant Material Safety Data Sheet (MSDS).
- Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

Quality control:

SOPREMA has always attached the highest importance to Quality Control. For this reason, we operate an internationally recognized Quality System according to ISO 9001:2000, with the system independently monitored and certified by AFAQ-Association Française d'Assurance Qualité (French Main Quality Certification Office).

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes and a manufacturer of liquid membrane systems with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. SOPREMA has been at the forefront of liquid membrane technology for nearly two decades.



# ALSAN RS CATALYST POWDER

Alsan RS CATALYST POWDER

Order No. L-RS003

## DESCRIPTION & APPLICATION

Alsan RS Catalyst Powder is a reactive agent based on dibenzoylperoxide and is supplied as a white granular powder in pre-measured package boxes.

**PRODUCT USES:**

Alsan RS Catalyst Powder is a reactive agent used to induce curing of all Alsan RS resin products during membrane application.

**COLOR:**

Alsan RS Catalyst Powder is supplied as a white powder.

**PACKAGING:**

Alsan RS Catalyst Powder is available in prepackaged 0.1 kg packets.

**STORAGE:**

Always store closed containers in cool, ventilated and dry location away from open flame sources. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C).

**HANDLING:**

Always use caution when handling the products. Do not smoke. Keep away from open flame, fire or any ignition source. Avoid skin and eye contact with this product. Cured product may be disposed of in standard landfills. Uncured product is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Workers must wear long sleeved shirts, long pants, work boots and use only butyl rubber or nitrile gloves when working with the product. Safety glasses with side shields are required for eye protection. Use of NOISH approved respirator is required if the airborne concentration exceeds recommended limits. For more information, refer to instruction on the label of the can and to relevant Material Safety Data Sheet (MSDS).

**MIXING:**

Using a slow-speed (200 to 400 rpm) mechanical agitator, thoroughly mix the entire container of resin for two minutes before each use, and prior to pouring off resin into a second container if batch mixing. Catalyze only the amount of material that can be used within 10-15 minutes. Add pre-measured catalyst to the resin component, stir for two minutes and apply to substrate. Refer to individual product data sheets for specific recommendations and requirements for the resin being used. The amount of catalyst added to Alsan RS resins varies based on the resin type, weight of the resin used and temperature. Catalyze only the amount of material that can be used within the resins specified pot-life.



# ALSAN RS CATALYST

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### ALSAN RS 222 PRIMER, ALSAN RS 276 PRIMER CATALYST MIXING CHART

|                | 6% Catalyst Activation<br>32°F to 49°F (0°C to 10°C) |      |             | 4% Catalyst Activation<br>50°F to 68°F (15°C to 20°C) |      |             | 2% Catalyst Activation<br>69°F to 95°F (20°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.06   | 6    | n/a         | 0.04  | 4    | n/a         | 0.02  | 2    | n/a         |
| 10.0 kg        | 0.6  | 60   | 6           | 0.4   | 40   | 4           | 0.2   | 20   | 2           |

### ALSAN RS 230 FIELD CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
| Resin Quantity | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 25.0 kg        | 1   | 100  | 10          | 0.5  | 50   | 5           |

### ALSAN RS 230 FLASH CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>37°F to 59°F (3°C to 15°C) [Summer Grade]<br>23°F to 49°F (-5°C to 10°C) [Winter Grade] |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) [Summer Grade]<br>50°F to 59°F (10°C to 15°C) [Winter Grade] |      |             |
|----------------|---|------|-------------|--|------|-------------|
| Resin Quantity | kg  | tbsp | 0.1 kg bags | kg   | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04  | 4    | n/a         | 0.02   | 2    | n/a         |
| 12.0 kg        | .48   | 48   | 5           | 0.24   | 24   | 2.5         |

### 233 SELF-LEVELING MORTAR, 281 FINISH, 288 FINISH, RS PASTE CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 49°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>50°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 10.0 kg        | 0.4  | 40   | 4           | 0.2   | 20   | 2           |

### ALSAN RS TEXTURED COATING, ALSAN RS 290 TEXTURED FINISH CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 59°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>60°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 15.0 kg        | 0.6  | 60   | 6           | 0.3   | 30   | 3           |

### ALSAN RS DETAILER CATALYST MIXING CHART

|                | 4% Catalyst Activation<br>32°F to 49°F (0°C to 15°C) |      |             | 2% Catalyst Activation<br>50°F to 95°F (15°C to 35°C) |      |             |
|----------------|--|------|-------------|---|------|-------------|
| Resin Quantity | kg   | tbsp | 0.1 kg bags | kg  | tbsp | 0.1 kg bags |
| 1.0 kg         | 0.04   | 4    | n/a         | 0.02  | 2    | n/a         |
| 2.0 kg         | 0.08   | 8    | n/a         | 0.04  | 4    | n/a         |



# SOPRA FILTER FABRIC

## SOPRA FILTER FABRIC

Order No. \*

\* Contact your Soprema Customer Service Representative.

### DESCRIPTION & APPLICATION

Sopra Filter Fabric is a 100% non-woven polypropylene fabric designed to be used as a filter fabric in roofing and waterproofing applications. The fifteen foot wide by three hundred and sixty (15' x 360') feet (4.5 m x 109.7 m) is unrolled into position and weighted in place until the overburden is installed. Successive rolls are overlapped three to four (3" to 4") inches (76 mm to 102 mm).

### COVERAGE & PACKAGING

| Product/<br>Property      | SOPRA FILTER FABRIC                         |
|---------------------------|---|
| Material                  | Polypropylene                               |
| Color                     | Black                                       |
| Nominal Thickness         | 50 mils (1.27 mm)                           |
| Approximate Roll Coverage | 5,400 ft <sup>2</sup> (502 m <sup>2</sup> ) |
| Side Lap                  | 3" to 4" (76 to 102 mm)                     |
| End Lap                   | 3" to 4" (76 to 102 mm)                     |
| Roll Length               | 360 ft. (110 m)                             |
| Roll Width                | 15 ft. (4.5 m)                              |

### TECHNICAL INFORMATION

| Properties              | Value/Test Method                   |
|-------------------------|-------------------------------------|
| Grab Tensile Strength   | 80 lbs (356 N) / ASTM D 4632        |
| Grab Tensile Elongation | 50 % / ASTM D 4632                  |
| Trapezoid Tear          | 25 lbs (111 N) / ASTM D 4533        |
| Mullen Burst            | 130 psi (18.9 kPa) / ASTM D 3786    |
| Hydraulic - AOS         | 50 US Sieve / ASTM 4751             |
| Hydraulic - Flow Rate   | 150 gpm/ft <sup>2</sup> / ASTM 4491 |





# MODIFIED SOPRA-G

MODIFIED SOPRA-G (03)

Order No. 00107\*

\*Contact Customer Service for additional order numbers.

## DESCRIPTION

Modified Sopra G (modified with SBS) is a ASTM 4601, Type II and G2 fiberglass base sheets. The Modified Sopra G base sheet is used as an anchor sheet for hot mopped, cold adhesive or heat welded roof assemblies. This base sheet is suitable for use to form BUR roof assemblies or is used in combination with SBS membranes when they are completely adhered either by hot mopping or cold adhesive. The Modified Sopra-G sheet may be used as an anchor sheet for waterproofing assemblies or as a separation sheet over approved Colphene H waterproofing systems. See published Specifications and Approved Details.

## COMPOSITION, PACKAGING & PROPERTIES

| Product/Property                 | Modified Sopra-G                         |
|----------------------------------|--|
| Reinforcement                    | Fiberglass                               |
| Bitumen                          | SBS Modified                             |
| Topside                          | Sanded                                   |
| Underside                        | Sanded                                   |
| Approx. Nominal Thickness        | 1.2 mm (48 mils)                         |
| Approximate Roll Coverage        | 28 m <sup>2</sup> (300 ft <sup>2</sup> ) |
| Side Lap                         | 76 mm (3")                               |
| End Lap                          | 152 mm (6")                              |
| Roll Length                      | 33 m (108')                              |
| Roll Width                       | 0.9 m (3')                               |
| Approximate Roll Weight          | 41.7 kg (92 lbs.)                        |
| Rolls per Pallet*                | 20                                       |
| *Rolls stocked upright on pallet |  |

| Product/<br>Properties per ASTM D 4601-04   | Modified Sopra-G |
|---|------------------|
| Net Dry Mass (lb. 100 ft <sup>2</sup> )   | 28.4             |
| Moisture (% max @ time of mfg.)   | <1               |
| Mass of desaturated glass mat (lb. 100 ft <sup>2</sup> )  | 1.70             |
| Asphalt (min. lb./100 ft <sup>2</sup> )   | 10               |
| Parting agent & stabilizer (max. lb./100 ft <sup>2</sup> )  | NA               |
| Load strain properties @ 77° F (25° C)<br>Breaking Strength   | 60 MD 44 XD      |
| Pliability (1/2 in. radius failures)  | No Cracking      |
| Minimum values before and after Heat Conditioning. Test results for manufacturing plant in Wadsworth, OH7/24/03 |                  |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000.







# ELASTOPHENE SANDED

ELASTOPHENE SANDED (25)

Order No. 00206

## DESCRIPTION & APPLICATION

Elastophene Sanded is composed of selected SBS modified bitumen applied onto a glass mat reinforcement with high brush sanded bottom and top surface. Elastophene Sanded field base membrane ply is adhered to a properly prepared, clean, dry and/or primed (where required) substrate by using hot asphalt or cold adhesive. Optional inner ply(s) or the field cap membrane ply is bonded to the properly prepared, clean, dry and/or primed (where required).

A self-adhesive cap sheet can also be installed when the Elastophene surface is properly prepared with the appropriate Soprema Primer and Soprema Sealant is applied to all side and end lap edges not having a bitumen bleed-out. See published Specifications and Approved Details.

ELASTOPHENE SANDED may be used as a separator sheet in an approved Colphene H waterproofing assembly. Embed ELASTOPHENE SANDED membrane into COLPHENE H rubberized asphalt while still hot and broom in to ensure solid adhesion. The membrane is installed with minimum two (2") inch (51 mm) sidelaps and four (4") inch (102 mm) end laps, or in accordance with specific project requirements. For specific job conditions where vehicular traffic or extreme physical abuse is expected, additional protection may be required.

## FEATURES & BENEFITS

- Superior tensile strength
- Provides UV resistance (not designed for permanent exposure)
- Fiberglass reinforcement provides dimensional stability
- Excellent bonding capacity with Colphene H hot rubberized asphalt

## COMPOSITION & PACKAGING

| Product/<br>Property               | ELASTOPHENE SANDED                                       |
|------------------------------------|--|
| Reinforcement                      | fiberglass reinforcement                                 |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | lightly sanded   |
| Underside                          | lightly sanded   |
| Approximate Nominal Thickness      | 90 mils (2.2 mm)   |
| Approximate Roll Coverage          | 147 ft <sup>2</sup> (13.6 m <sup>2</sup> )               |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 49 ft (15 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 90 lbs (40.8 kg)   |
| Rolls per Pallet*                  | 30   |
| * Rolls stocked upright on pallets |  |



## PHYSICAL PROPERTIES

| Physical Property per ASTM D 6163,<br>Type I, Grade S  | MD   | XD   |
|--|------|------|
| Tensile - Max Load at $0 \pm 3.6^{\circ}\text{F}$ lbf/in   | 116  | 104  |
| Elongation at $0 \pm 3.6^{\circ}\text{F}$ %  | 4.2  | 4.0  |
| Tensile - Max Load at $73.4 \pm 3.6^{\circ}\text{F}$ lbf/in  | 57   | 57   |
| Elongation at $73.4 \pm 3.6^{\circ}\text{F}$ %   | 4.0  | 4.0  |
| Tear Strength at $73.4 \pm 3.6^{\circ}\text{F}$ lbf  | 82   | 73   |
| Low Temperature Flex $^{\circ}\text{F}$ max  | -15  | -15  |
| Dimensional Stability % max  | <0.1 | <0.1 |
| Compound Stability Temp F  | 250  | 250  |
| Granule Embedment g/max  | NA   | NA   |
| Minimum values before and after Heat Conditioning<br>Test results for manufacturing plant in Wadsworth, OH |      |      |

## LIMITATIONS

Elastophene Sanded should not be stored exposed to the elements. Rolls should be stored upright on a pallet.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000 Certified.

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. Today, through a special mixture of components, SOPREMA membranes redefine the qualities indispensable to a high performance roof membrane: elasticity, flexibility, heat & fatigue resistance.

SOPREMA SBS modified bitumen membrane assemblies typically consist of base and top ply membranes that have specific type reinforcements in order to meet specific ASTM Standards. The two ply system provides a resistance to punctures and tears, as well as ensuring an effective distribution of stress points. The two ply system operates in a homogeneous fashion. The bitumen in each layer moves uniformly to offer continuous protection.

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



# ELASTOPHENE 180 SANDED

ELASTOPHENE 180 SANDED (20)

Order No. 00210

## DESCRIPTION & APPLICATION

Elastophene 180 Sanded is composed of selected SBS modified bitumen applied onto a non-woven polyester reinforcement with a sanded underside and high brush sanded top surface.

The field and flashing base membrane ply is adhered to a properly prepared substrate by using hot asphalt or cold adhesive. Optional inner ply(s) or the field cap membrane ply is bonded to the properly prepared, clean, dry and/or primed (where required) Elastophene 180 Sanded top surface with hot asphalt, cold adhesive or heat welding application methods. A self-adhesive cap sheet can also be adhered to the sanded top surface when the Elastophene 180 Sanded membrane is properly prepared with Soprema SA Primer and Soprema Sealant is applied to all side and end lap edges not having a bitumen bleed-out prior to application.

ELASTOPHENE 180 SANDED is also used as a protection sheet in an approved Colphene H waterproofing assembly. The ELASTOPHENE 180 SANDED membrane is installed with minimum two (2") inch (51 mm) sidelaps and four (4") inch (102 mm) end laps, or in accordance with specific project requirements.

See published Specifications and Approved Details.

## COMPOSITION & PACKAGING

| Product/<br>Property               | ELASTOPHENE 180 SANDED                                   |
|------------------------------------|--|
| Reinforcement                      | polyester  |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | lightly sanded   |
| Underside                          | lightly sanded   |
| Approximate Nominal Thickness      | 90 mils (2.2 mm)   |
| Approximate Roll Coverage          | 147 ft <sup>2</sup> (13.6 m <sup>2</sup> )               |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 49 ft (15 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 92 lbs (41.7 kg)   |
| Rolls per Pallet*                  | 30   |
| * Rolls stocked upright on pallets |  |



## PHYSICAL PROPERTIES

| Physical Property per ASTM D 6164,<br>Type I, Grade S  | MD   | XD   |
|--|------|------|
| Tensile - Max Load at $0 \pm 3.6^{\circ}\text{F}$ lbf/in   | 117  | 83   |
| Elongation at $0 \pm 3.6^{\circ}\text{F}$ %  | 29   | 22   |
| Tensile - Max Load at $73.4 \pm 3.6^{\circ}\text{F}$ lbf/in  | 70   | 70   |
| Elongation at $73.4 \pm 3.6^{\circ}\text{F}$ %   | 56   | 61   |
| Tear Strength at $73.4 \pm 3.6^{\circ}\text{F}$ lbf  | 120  | 87   |
| Low Temperature Flex $^{\circ}\text{F}$ max  | -15  | -15  |
| Dimensional Stability % max  | <0.5 | <0.5 |
| Compound Stability Temp F  | 215  | 215  |
| Granule Embedment g/max  | NA   | NA   |
| Minimum values before and after Heat Conditioning<br>Test results for manufacturing plant in Wadsworth, OH |      |      |

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000 Certified.

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. Today, through a special mixture of components, SOPREMA membranes redefine the qualities indispensable to a high performance roof membrane: elasticity, flexibility, heat & fatigue resistance.

SOPREMA SBS modified bitumen membrane assemblies typically consist of base and top ply membranes that have specific type reinforcements in order to meet specific ASTM Standards. The two ply system provides a resistance to punctures and tears, as well as ensuring an effective distribution of stress points. The two ply system operates in a homogeneous fashion. The bitumen in each layer moves uniformly to offer continuous protection.

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



# SOPRALENE 180 GR

SOPRALENE 180 GR (43)

Order No. 01464\*

\*Cap sheet order numbers are for WHITE CAP SHEETS ONLY. Contact Customer Service or your Sales Representative for other available cap sheet colors and special order requirements.

## DESCRIPTION & APPLICATION

Sopralene 180 GR cap ply is composed of selected SBS modified bitumen applied onto a non-woven polyester reinforcement with sand on the underside and a colored granule topside surface.

The Sopralene 180 GR field and flashing cap membrane ply is adhered to a properly prepared, clean, dry and/or primed (where required) base or ply membrane by using the hot asphalt or cold adhesive application methods.

SOPRALENE 180 GR may also be used as a cap sheet in an approved COLPHENE H waterproofing assembly. The SOPRALENE 180 GR membrane is installed with minimum three (3") inch (76 mm) sidelaps and six (6") inch (152 mm) end laps, or in accordance with specific project requirements.

See published Specifications and Approved Details.

## COMPOSITION & PACKAGING

| Product/<br>Property               | SOPRALENE 180 GR   |
|------------------------------------|--|
| Reinforcement                      | polyester  |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | colored granules   |
| Underside                          | sanded   |
| Approximate Nominal Thickness      | 160 mils (4.0 mm)  |
| Approximate Roll Coverage          | 97.5 ft <sup>2</sup> (9.1m <sup>2</sup> )                |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 33 ft (10 m)   |
| Roll Width                         | 39" (1 m)  |
| Approximate Roll Weight            | 113 lbs (51.3 kg)  |
| Rolls per Pallet*                  | 25   |
| * Rolls stocked upright on pallets |  |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## PHYSICAL PROPERTIES

| Physical Property per ASTM D 6164,<br>Type I, Grade G  | MD   | XD   |
|--|------|------|
| Tensile - Max Load at $0 \pm 3.6^{\circ}\text{F}$ lbf/in   | 117  | 83   |
| Elongation at $0 \pm 3.6^{\circ}\text{F}$ %  | 29   | 22   |
| Tensile - Max Load at $73.4 \pm 3.6^{\circ}\text{F}$ lbf/in  | 70   | 70   |
| Elongation at $73.4 \pm 3.6^{\circ}\text{F}$ %   | 56   | 61   |
| Tear Strength at $73.4 \pm 3.6^{\circ}\text{F}$ lbf  | 120  | 87   |
| Low Temperature Flex $^{\circ}\text{F}$ max  | -15  | -15  |
| Dimensional Stability % max  | <0.5 | <0.5 |
| Compound Stability Temp F  | 230  | 230  |
| Granule Embedment g/max  | 0.8  | 0.8  |
| Minimum values before and after Heat Conditioning<br>Test results for manufacturing plant in Wadsworth, OH |      |      |

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2000 Certified.

## GENERAL

SOPREMA is a Certified ISO 9001:2000 worldwide producer of bituminous membranes with factories in Europe and North America. Waterproofing sheets have been produced by SOPREMA since 1908. Today, through a special mixture of components, SOPREMA membranes redefine the qualities indispensable to a high performance roof membrane: elasticity, flexibility, heat & fatigue resistance.

SOPREMA SBS modified bitumen membrane assemblies typically consist of base and top ply membranes that have specific type reinforcements in order to meet specific ASTM Standards. The two ply system provides a resistance to punctures and tears, as well as ensuring an effective distribution of stress points. The two ply system operates in a homogeneous fashion. The bitumen in each layer moves uniformly to offer continuous protection.



# Soprasedal Stick 1100T

Self Adhered Air & Vapor Barrier



*The Building  
Envelope  
Company*



Soprasedal Stick 1100T provides superior air and vapor protection for the entire building envelope.

Soprasedal Stick 1100T membrane is composed of self adhesive SBS modified bitumen and a polyethylene woven composite facer. It provides an impermeable barrier against air and vapor leakage in building envelopes.

## Soprasedal Stick 1100T Features:

- Ease of installation
- Reference lines at 6 inches
- Consistent thickness
- Self sealing
- Precut rolls available
- UV stable for up to 90 days
- Polyurethane foam sprayable



Soprasedal Stick 1100T is manufactured with consistent thickness and is self sealing. It provides 90 days of UV protection and features a cool to the touch reflective surface. It can be wrapped into windows and door frames allowing for the use of just one product for the entire face of the building.

SOPREMA, Inc. • 310 Quadral Drive • Wadsworth, OH 44281 • 1.800.356.3521

[www.soprema.us](http://www.soprema.us)

# Soprasedal Stick 1100T

Self Adhered Air & Vapor Barrier



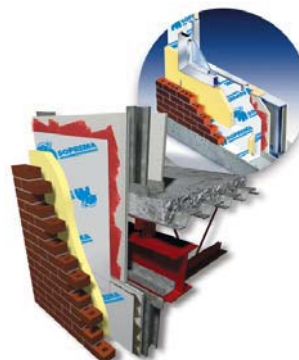
## Installation Instructions:



Prime the substrate.



Remove the top portion of the silicone release paper.



The Building  
Envelope  
Company



Making sure the alignment is correct, remove the silicone release paper completely.



Fully adhere membrane using a hard roller.



Use a Sopramastic to seal around penetrations and details.

## SOPRASEAL STICK 1100T

| Properties                        | Standards                  | SOPRASEAL STICK 1100T   |
|-----------------------------------|----------------------------|---|
| Thickness                         | -                          | 40 mil  |
| Dimensions                        | -                          | 36 in x 75 ft   |
| Gross/Net Coverage per Roll       | -                          | 225/212 (ft <sup>2</sup> )                                    |
| Roll Weight                       | -                          | 46 lbs  |
| Topside                           | -                          | Tri-Laminate Woven Polyethylene                               |
| Underside                         | -                          | Silicone Release Film   |
| Tensile Strength (MX/DX)          | ASTM D5147                 | 64/88 lb/in   |
| Ultimate Elongation (MX/DX)       | ASTM D5147                 | 40/25 %   |
| Cold Bending                      | ASTM D5147                 | -31° F  |
| Static Puncture                   | ASTM D5602                 | 90 lbf  |
| Tear Resistance (MX/DX)           | ASTM D5601                 | 84/90 lbf   |
| Lap Adhesion                      | ASTM D1876                 | 11.4 lb/in  |
| Water Absorption                  | ASTM D5147                 | 0.1% max  |
| Peel Resistance                   | ASTM D903                  | 16 lbf/ft   |
| Air Permeability                  | ASTM E283 (75 Pa)          | <0.0003 L/sec•m <sup>2</sup>                                  |
| Water Vapor Permeability Perm     | ASTM E96 (Pro. B)          | 0.016 ng/Pa•s•m <sup>2</sup>                                  |
| Resistance to Gust Wind Load      | ASTM E330 (3000 Pa - 10 s) | No signs of delamination or variation in the air permeability |
| Resistance to Sustained Wind Load | ASTM E330 (100 Pa - 1 hr)  | No signs of delamination or variation in the air permeability |

SOPREMA, Inc. • 310 Quadral Drive • Wadsworth, OH 44281 • 1.800.356.3521

www.soprema.us



## **SELF-ADHERED SHEET MEMBRANE AIR & VAPOR BARRIER**

### **SOPRASEAL STICK 1100T**

*This specification serves as a guideline and must be modified, as necessary, by the Designer of Record to suit the needs of the individual project. This specification is prepared in accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Any improvements and changes to the content of this specification can be made only with the written authorization of the Designer of Record. ~~[delete this paragraph]~~*

#### **PART 1 – GENERAL**

##### **1.01 RELATED DOCUMENTS:**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

##### **1.02 RELATED WORK**

- A. Division [03 00 00] [Concrete]
- B. Division [04 00 00] [Masonry]
- C. Division [07 10 00] [Dampproofing and Weatherproofing]
- D. Division [07 21 00] [Thermal Insulation]
- E. Others: [        ] [        ]

##### **1.03 REFERENCES**

- A. American Society for Testing and Materials (ASTM)
- B. International Organization for Standardization (ISO) 9001:2000 Quality Standard

##### **1.04 SYSTEM DESCRIPTION**

- A. Furnish and install a non-permeable Air & Vapor Barrier weatherproofing assembly including a self-adhered sheet membrane and related accessory products. To ensure total system compatibility all products shall be purchased from a single-source manufacturer.

##### **1.05 SUBMITTALS**

- A. Submit three (3) copies of the most current technical data sheets. These documents must describe the physical properties of the specified materials and explanations about product installation, including installation techniques, restrictions, limitations and any other manufacturer recommendations.

SOPREMA Guide Specification  
Self-Adhered Membrane Air & Vapor Barrier

- B. Certification that all products are in compliance with specified ASTM requirements and meet the highest current ISO standards.
- C. Certification that all components of the weatherproofing assembly are being supplied and warranted by a single manufacturer.
- D. Provide a specimen warranty from the manufacturer that includes all components of the air and vapor barrier installation.

**1.06 QUALITY ASSURANCE**

- A. **Refer to Section 1.5 SUBMITTALS.** Include items A, B, C & D.
- B. The installer must demonstrate his or her qualifications to perform the work of this section by providing written evidence from the manufacturer providing the single-source warranty that the installer is an applicator in good standing and is authorized to install the specified air and vapor barrier system on the project.
  - 1. Documentation of the installer's qualifications must be written on the manufacturer's letterhead, include the name and address of the installer and the full name and physical address of the air and vapor barrier installation in the body of the letter, and must be signed by an authorized representative of the membrane manufacturer.
- C. **Refer to Section 1.4 SYSTEM DESCRIPTION.** All components of the weatherproofing assembly must be supplied by the membrane manufacturer offering the single-source warranty.
- D. The manufacturer offering the single-source warranty must have full-time technical support staff to provide the installer with technical assistance in the installation of the products included in the warranty.
- E. Pre-Construction Conference. All parties responsible for work of this section are required to attend a pre-conference meeting to review the details of the project as they pertain to the integrity of the weatherproofing assembly.
  - 1. The conference must be held prior to commencing work of this section at a time and location to be determined by the Architect.
  - 2. All parties responsible for the work of this section are required to attend, including the architect, owner, installer and manufacturer offering the single-source warranty.
  - 3. All parties are to review the installation procedures of this section and the coordination required with related work.
- F. Field-Constructed Mock-Ups: Prior to installation of the air & vapor barrier, apply air & vapor barrier membrane to verify details under shop drawing submittals and to demonstrate tie-ins with adjoining construction, and other termination conditions, as well as qualities of materials and execution.

**1.07 MANUFACTURER'S REPRESENTATIVE**

## SOPREMA Guide Specification

### Self-Adhered Membrane Air & Vapor Barrier

- A. The air and vapor barrier materials manufacturer may delegate a representative to visit the work site at commencement of work. At all times, the contractor shall permit and facilitate access to the site by the manufacturer's representative cited above.

#### **1.08 DELIVERY, STORAGE & HANDLING**

- A. Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instruction for use and all identifying numbers.
- B. Protect and permanently store all materials in a dry, well-ventilated and weatherproof location. Only materials to be used the same day shall be removed from this location. Winter grade product is to be stored and installed at temperatures not less than 25° F or greater the 50° F. Summer grade product to be stored and installed at a 50° F minimum temperature; certain adhesives and accessories may require conditioning at temperatures greater than 50° F prior to use to ensure the proper rate of application and/or ease of use (see PDSs). Keep all materials away from open flame or welding sparks.
- C. Pails of materials shall be carefully stored and adequately protected in accordance with the manufacturer's recommendations.
- D. Store all materials upright, on pallets in a clean, dry area protected from water and direct sunlight at the temperatures described above.
- E. The specified weatherproofing membrane must be kept from freezing during storage and transport.

#### **1.09 PROJECT CONDITIONS**

- A. Application of the membrane shall not commence nor proceed during inclement weather. All surfaces to receive the membrane shall be clean, dry, free of water, dew, frost, snow and ice.
- B. Application of membrane shall not commence nor proceed when the ambient temperature is below 25°F for winter grade product and 50° F for summer grade product.
- C. It is imperative that provision be made for adequate protection of the installed membrane to prevent damage that might arise from work performed by the other trades.
- D. Concrete Deck/Wall Preparation; refer to Section 3.01 Surface Preparation.

#### **1.10 WARRANTY**

- A. Upon completion of the work, the contractor shall supply the owner with a single-source warranty issued by the manufacturer of the weatherproofing assembly.
- B. The product manufacturer shall issue a written and signed document in the name of the owner, certifying the product will meet all the physical characteristics published by the manufacturer, for a period of [5] years, starting from the date of completion of installation of membranes. No letter amending the manufacturer's standard warranty will be accepted and the warranty certificate must reflect these requirements.

**\*\*\* CONTACT SOPREMA FOR EXACT WARRANTY TERMS AND CONDITIONS\*\*\***

## PART 2 – PRODUCTS

### 2.01 GENERAL

- A. Weatherproofing membrane components and accessories shall be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

Acceptable Manufacturer: **SOPREMA Inc.**  
310 Quadral Dr.  
Wadsworth, OH 44281  
Phone: 800-356-3521  
Fax: 330-334-4289  
Web Site: [www.soprema.us](http://www.soprema.us)

### 2.02 MATERIALS

A. AIR & VAPOR BARRIER MEMBRANE

1. Shall be a self-adhered Air & Vapor Barrier sheet membrane composed of a selected blend of bitumen and SBS thermoplastic polymer adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface; minimum thickness 40 mils (1.0 mm).
2. Specified Product: **SOPRASEAL STICK 1100T by SOPREMA**
3. Physical Properties:

|    |   |  |
|----|---|--|
| a. | Thickness:                              | 40 mil (1.0 mm)  |
| b. | Tensile Strength (lb/in)                | ASTM D-5147 / 64   |
| c. | Elongation (%)                          | ASTM D-5147 / 40%  |
| d. | Static Puncture (lbf)                   | ASTM D-5602 / 90   |
| e. | Lap Adhesion (lb/in)                    | ASTM D-1876 / 11.4   |
| f. | Water Absorption (%)                    | ASTM D-5147 / 0.1 maximum  |
| g. | Peel Resistance (lbf/ft)                | ASTM D-903 / 16  |
| h. | Water Vapor Permeance (perm)            | ASTM E-96 (Pro. B) / 0.016 perm  |
| i. | Air permeability (L/se·m <sup>2</sup> ) | ASTM E-283 (75 Pa) / <0.0003   |
| j. | Resistance to gust wind load            | ASTM E-330 no signs of delamination<br>nor variation in the air<br>permeability. |
| k. | Resistance to sustained wind load       | ASTM E-330 no signs of delamination<br>nor variation in the air<br>permeability. |

### 2.03 AUXILIARY MATERIALS

B. PRIMER

## SOPREMA Guide Specification

### Self-Adhered Membrane Air & Vapor Barrier

1. Shall be a blend of natural resins and solvent/synthetic rubber, applied by brush, roller or spray over properly prepared substrates as determined by the membrane manufacturer.

Specified Product: **ELASTOCOL 600c by SOPREMA**

2. Shall be a polymer, emulsion based primer, applied by brush, roller or spray over properly prepared substrates as determined by the membrane manufacturer. For use when temperatures are above 41°F (5°C). Keep from freezing.

Specified product: **ELASTOCOL STICK H20 by SOPREMA**

### C. JOINT AND CRACK TREATMENT COATING

1. For cracks in the substrate less than 1/4" (6mm) width: Shall be a water-based single component rubberized liquid coating used as insulation adhesive and crack filler. For applications at temperatures above 40°F only.

a. Specified Product: **SOPRASEAL LM 200 T by SOPREMA**

2. For cracks and/or joints in the substrate greater than 1/4" (6mm) width: Shall be filled with Sopraseal LM 200 T as described above and stripped in with a 40 mil, SBS modified bitumen self-adhering sheet membrane with polyethylene woven complex. \*Must be used with approved primer\*.

a. Specified Product: **SOPRASEAL STICK 1100T by SOPREMA**

### D. WEATHERPROOFING MASTIC

1. For sealing terminating edges of membrane and detailing penetrations or projections through the weatherproofing membrane.

2. Specified Product: **SOPRAMASTIC by SOPREMA**

### E. MEMBRANE DETAILING

1. Optional Air Barrier detailing around windows, doors and other wall openings.

2. Specified Product: **SOPRASEAL WEATHERFLASH**

### E. INSULATION ATTACHMENT SYSTEM (if required)

1. For attachment of rigid or semi-rigid insulation boards over the specified Air & Vapor Barrier.

2. Specified Product: **SOPRASEAL LM 200 T by SOPREMA**

## **PART 3 – EXECUTION**

### **3.01 SURFACE PREPARTION**

- A. Prior to commencement of work, the weatherproofing contractor must receive a written order to proceed from the owner's representative accepting surface conditions.
- B. Before commencing work, all surfaces must be smooth, dry, clean and free of ice and debris as per manufacturer's recommendations.
- C. Do not install materials in inclement weather or temperatures exceeding the product specifications.
- D. Verify the compatibility of all membrane components with the substrate and all adjacent work.
- E. Apply specified primer to the approved substrate prior to installing the specified self-adhering sheet Air/Vapor Barrier membrane. Apply thin, continuous coating at coverage rate indicated on PDS. Allow primer to dry until it does not transfer when touched, but still has tack. If necessary, re-apply primer to surfaces that have become dusty or lost tack.
- F. Any cracks or joints over 1/8 inch (3 mm) wide should be reported. Upon approval from the qualified authority, the crack or joint should be filled in with T (trowel) grade air/vapor barrier coating. For cracks over 1/4" (6 mm), a 6 inch (150 mm) wide strip of detail membrane should be installed, centered over the crack.
- G. **Refer to Section 2.3 AUXILIARY MATERIALS** for Joint & Crack Treatment.

### **3.02 MEMBRANE INSTALLATION AT OPENINGS (Windows, doors, etc.)**

- A. Apply specified primer to the approved substrate. Apply thin, continuous coating at coverage rate indicated on product technical data sheet. Allow primer to dry until it does not transfer when touched, but still has tack. If necessary, re-apply primer to surfaces that have become dusty or lost tack. Apply transition membrane over surface the same day of application of primer.
- B. The transition membrane must be carefully installed around openings in the wall (windows, doors, etc.) in such a manner as to prevent any air leakage at these areas (refer to detail drawings).
- C. Lap adjoining strips of membrane 2 inches minimum and sequence installation to provide shingled overlaps. Upon installation, an approved, hand-held roller shall be applied with hand pressure over the entire surface of the membrane to ensure solid, consistent adhesion to the substrate. Membrane shall be rolled in using a side to side motion, perpendicular to the terminating edge.
- D. End-laps and any non-shingled membrane laps shall be sealed with the specified weatherproofing mastic.
- E. If Sopraseal Weatherflash is to be used see PDS for correct installation procedures and product limitations.

## SOPREMA Guide Specification

### Self-Adhered Membrane Air & Vapor Barrier

#### **3.03 AIR & VAPOR BARRIER MEMBRANE INSTALLATION**

- A. Apply specified self-adhering sheet air/vapor barrier membrane to prepared and primed substrate per manufacturer's recommendations and installation guidelines
- B. Membrane installation shall commence at the base (bottom) of the wall and proceed upward, as recommended by the membrane manufacturer. Properly position membrane rolls, remove release film and press firmly.
- C. Lap adjoining strips of membrane 3" and sequence installation to provide shingled overlaps. Upon installation, an approved, hand-held roller shall be applied with hand pressure over the entire surface of the membrane to ensure solid, consistent adhesion to the substrate. Membrane shall be rolled in using a side to side motion, perpendicular to the terminating edge. Apply a bead of specified weatherproofing mastic along the top edge of membrane at the conclusion of each work day.
- D. Weatherproofing contractor shall thoroughly inspect membrane installation at the end of each work day and make repairs, if necessary, in strict accordance with membrane manufacturers recommendations.

#### **3.04 INSTALLATION OF INSULATION (if required)**

- A. Apply adhesive with spots 75mm (3 in) in diameter, every 900mm (36 in). Bottom panel should be supported or mechanically fixed. On the top row of insulation, apply a continuous bead of adhesive 25mm (1 in) wide to the top leading edge of the panels to be adhered. This bead will protect the adhesive spots during initial cure by limiting the flow of moisture behind the board in the event of rain or snow.

#### **3.05 JOB COMPLETION**

- A. The weatherproofing contractor and an authorized representative of the membrane manufacturer shall inspect the weatherproofing assembly and notify the contractor of any defects. All defects shall be corrected by the weatherproofing contractor per manufacturer's requirements.
- B. Clean up all debris and equipment.

**-END OF SECTION-**

SOPREMA Guide Specification  
Self-Adhered Membrane Air & Vapor Barrier





# SOPRASEAL STICK 1100T

SELF-ADHESIVE AIR/VAPOR MEMBRANE

Order No. D14046\*

\* Individually boxed

## DESCRIPTION

SOPRASEAL STICK 1100T is a self-adhesive waterproofing membrane composed of SBS modified bitumen and a polyethylene woven composite facer. A silicone release film protects the self-adhesive underside.

SOPRASEAL STICK 1100T is available in "summer grade" for applications at temperatures above fifty degrees (50° F) Fahrenheit (10° C) and "winter grade" for applications at temperatures between twenty-five degrees (25° F) Fahrenheit (-3.9° C) and fifty degrees (50° F) Fahrenheit (10° C).

## BASIC USE & APPLICATION

Refer to SOPRASEAL STICK 1100T Guide Specification & Approved Details for specific application information.

SOPRASEAL STICK 1100T is specially designed for use as a self-adhering sheet air, vapor and rain barrier. Its primary application is on vertical walls of masonry, concrete or gypsum sheathing designed to be used as a base for Exterior Insulated Finishing Systems (EIFS). It may also be used as transition membrane at doors, windows, penetrations, etc. when used in conjunction with SOPRASEAL LM 200T LIQUID MEMBRANES.

Starting at the low point, install SOPRASEAL STICK 1100T to the primed substrate by peeling back the release film on the underside. Subsequent rolls shall be installed in the same manner and should be aligned with the preceding roll to maintain continuity. Use an approved roller and apply hand pressure over the entire surface to ensure solid adhesion to the substrate. The uppermost edge of the membrane shall be mechanically fastened to the substrate using approved fasteners and termination bars.

## FEATURES & BENEFITS

- Excellent adhesion to most substrates
- Impermeable to air and moisture vapor
- 100% UV resistant
- Superior lap adhesion and peel resistance
- Superior tensile strength and puncture resistance
- Membrane is self-healing when penetrated with fasteners or self-tapping screws
- Cold applied, no flames or kettles
- Easy to install

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



### COMPOSITION & PACKAGING

| Product/<br>Property               | SOPRASEAL STICK 1100T                                    |
|------------------------------------|--|
| Reinforcement                      | none   |
| Elastomeric Bitumen                | selected blend of bitumen and SBS thermoplastic polymers |
| Topside                            | tri-laminate woven polyethylene                          |
| Underside                          | self-adhesive with release paper                         |
| Approximate Nominal Thickness      | 40 mils (1.0 mm)   |
| Approximate Roll Coverage          | 225 ft <sup>2</sup> (19 m <sup>2</sup> )                 |
| Side Lap                           | 3" (76 mm)   |
| End Lap                            | 6" (152 mm)  |
| Roll Length                        | 75 ft (22.9 m)   |
| Roll Width                         | 36" (0.914 m)  |
| Approximate Roll Weight            | 44 lbs (20 kg)   |
| Rolls per Pallet*                  | 36   |
| * Rolls stocked upright on pallets |  |

#### Physical Properties:

- Thickness - mils (mm)
- Dimensions - feet (m)
- Gross/Net coverage/roll - ft<sup>2</sup> (m<sup>2</sup>)
- Roll Weight - pounds (kg)
- Bottom Face
- Top Face
- Storage
- Tensile Strength, MD/XD lbf/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lbf/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
- Resistance to sustained wind load

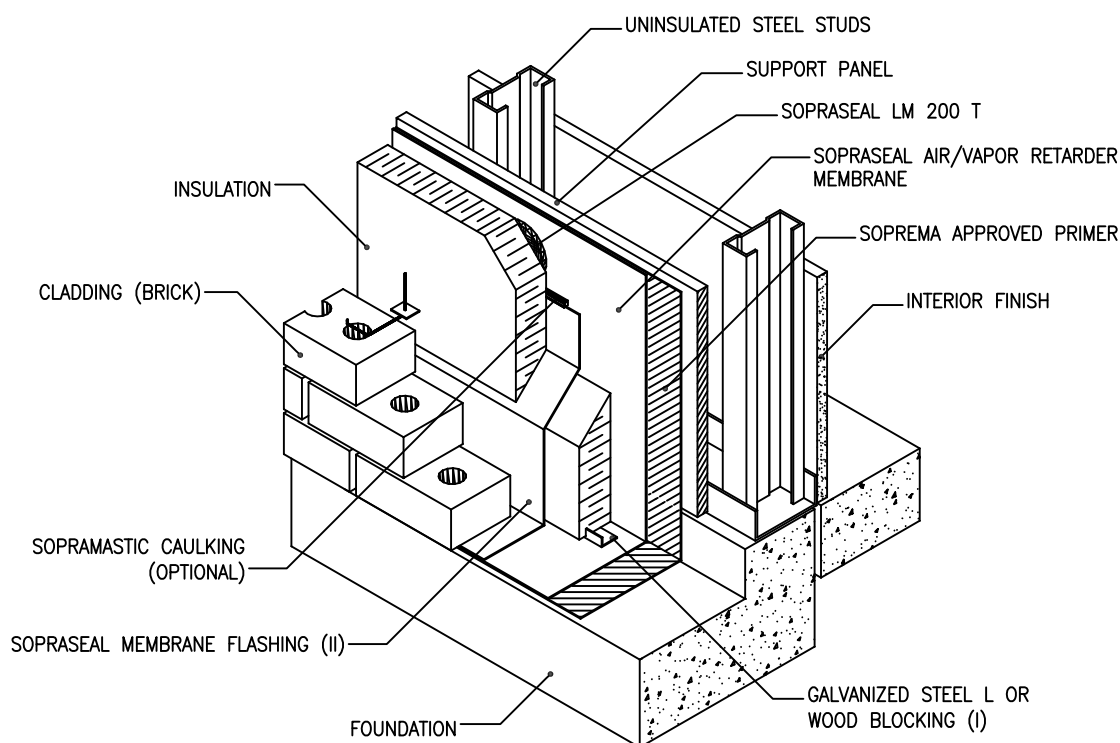
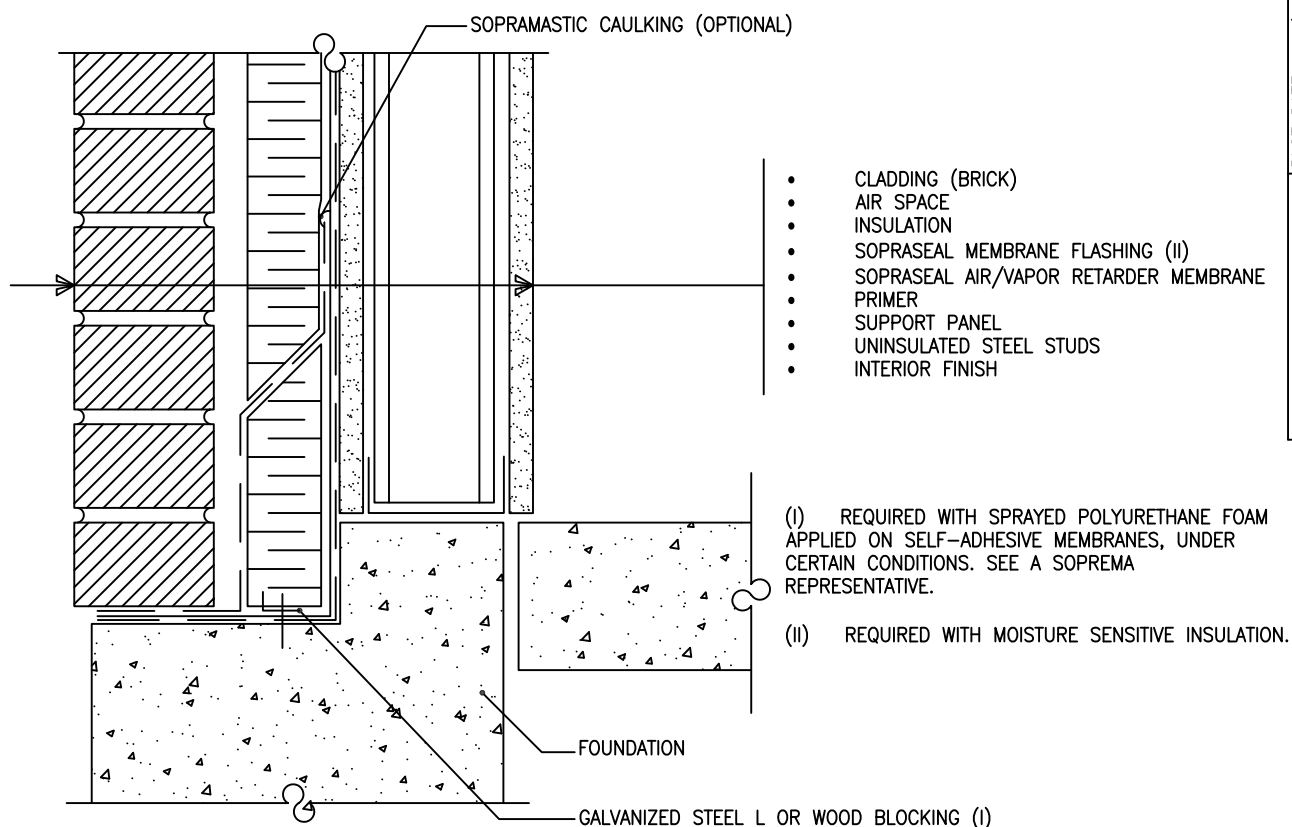
#### Standards

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- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330
- (3000 Pa - 10 s)
- ASTM E 330
- (100 Pa - 1 hr)

#### Soprased Stick


- 40 (1.0)
- 75 x 3 (22.9 x 0.91)
- 225 / 212 (20.8 / 19.7)
- 46 (21)
- Silicone release film
- Tri-laminate woven polyethylene
- Upright on pallet
- 64/88 (11.3 / 15.4)
- 40 / 25
- 31 (-35)
- 90 (400)
- 84/90 (375 / 400)
- 11.4 (2,000)
- 0.1 maximum
- 16 (2,800)
- 0.016 (0.90)
- <0.0003
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

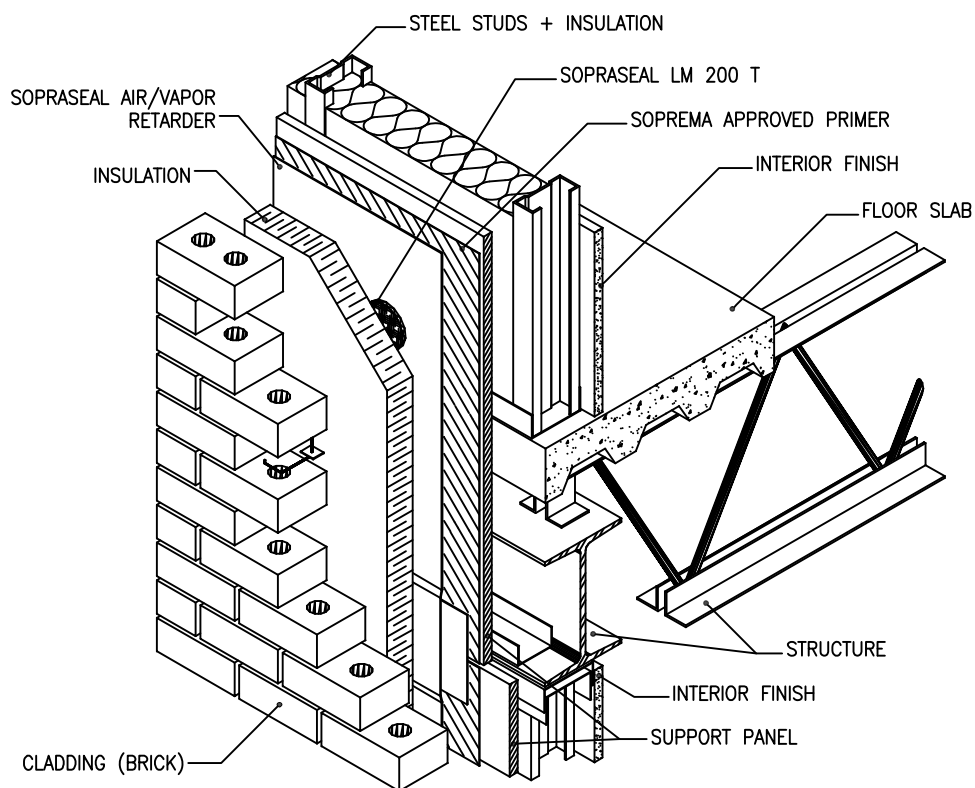
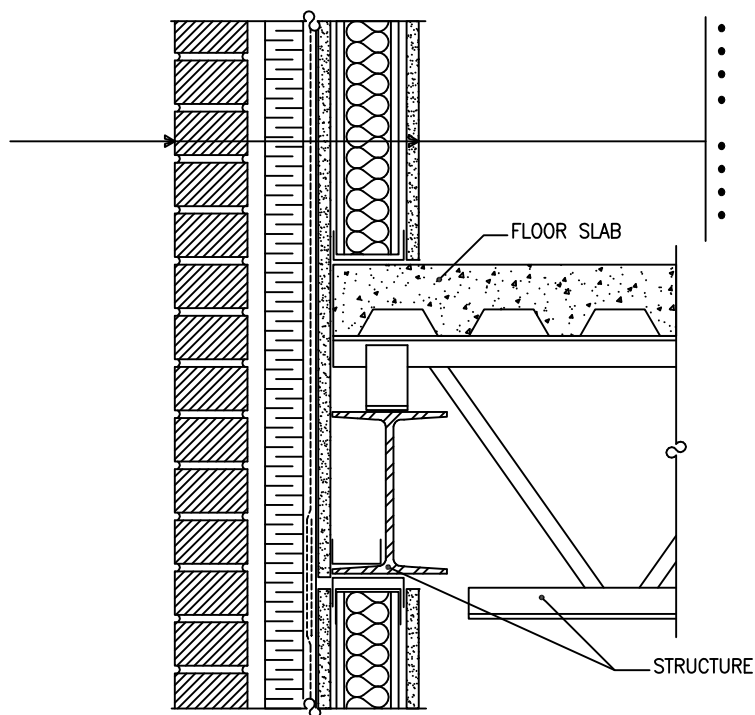
All values are nominal.



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

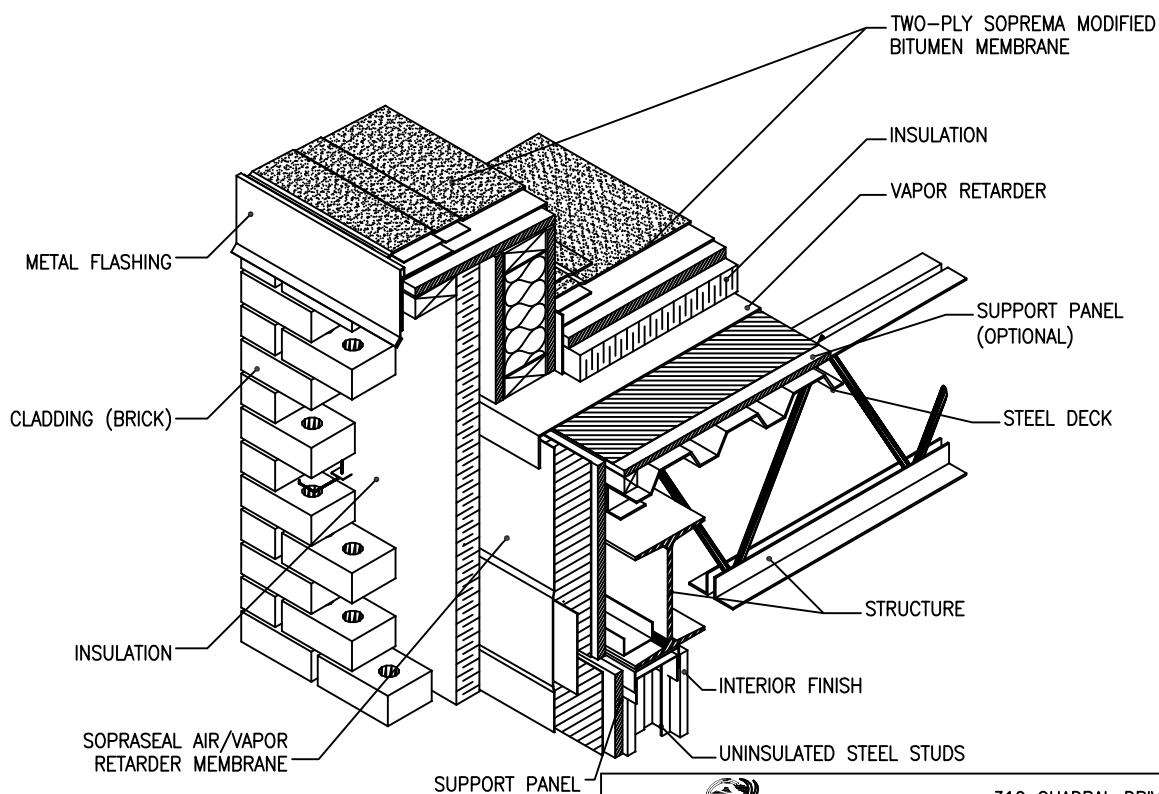
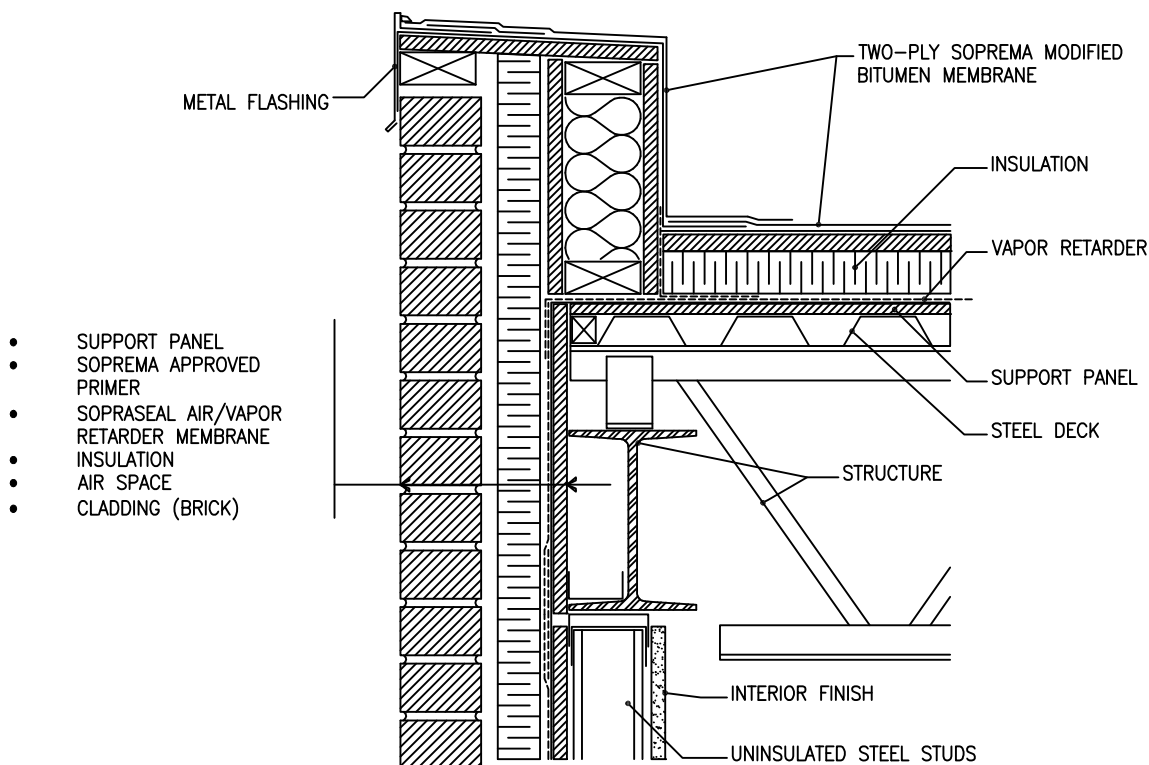
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|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| STEEL STUD WALL FOUNDATION JUNCTION  |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| N.T.S.   | RS  | JP                    | 11/05/10      |
| DRAWING NUMBER   |     |                       | REV           |
| PAR01  |     |                       | 0             |



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
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|   |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           | TITLE<br>STEEL STUD WALL FLOOR JUNCTION                      |                           |
| SCALE<br>N.T.S.  | DWN<br>RS | CHK<br>JP  | APPROVAL DATE<br>11/05/10 |
| DRAWING NUMBER<br>PAR02  |           |  | REV<br>0                  |
| <p>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</p> |           |  |                           |



**NOTES:**

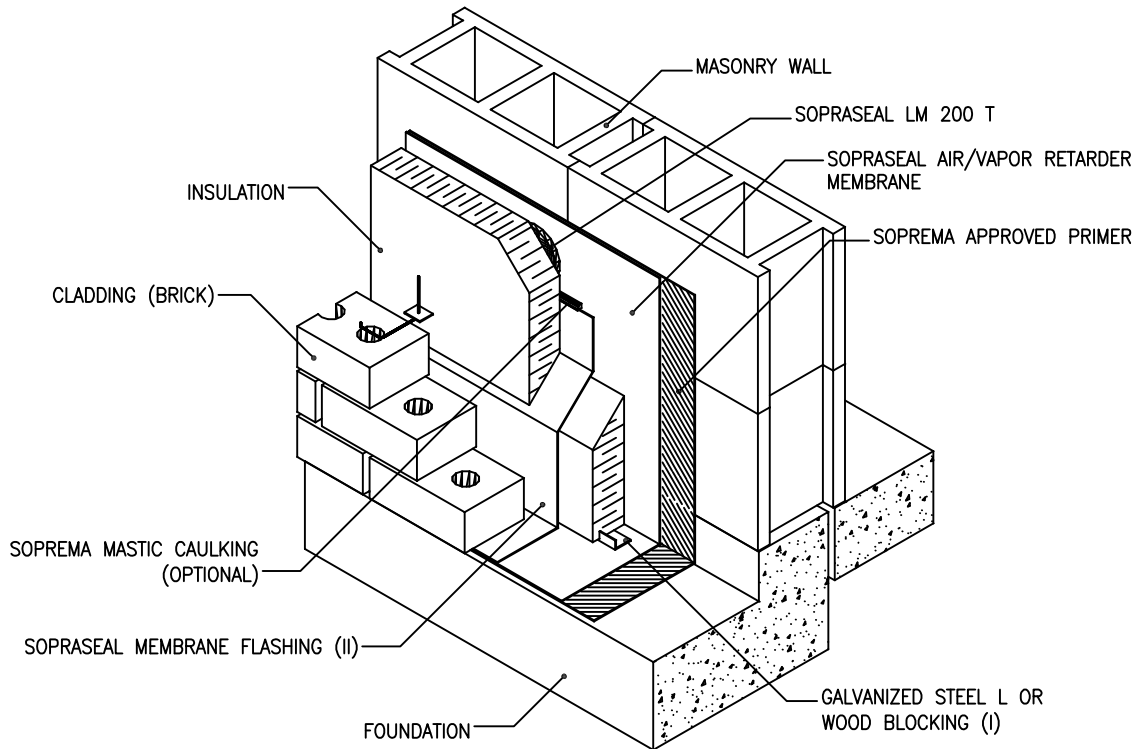
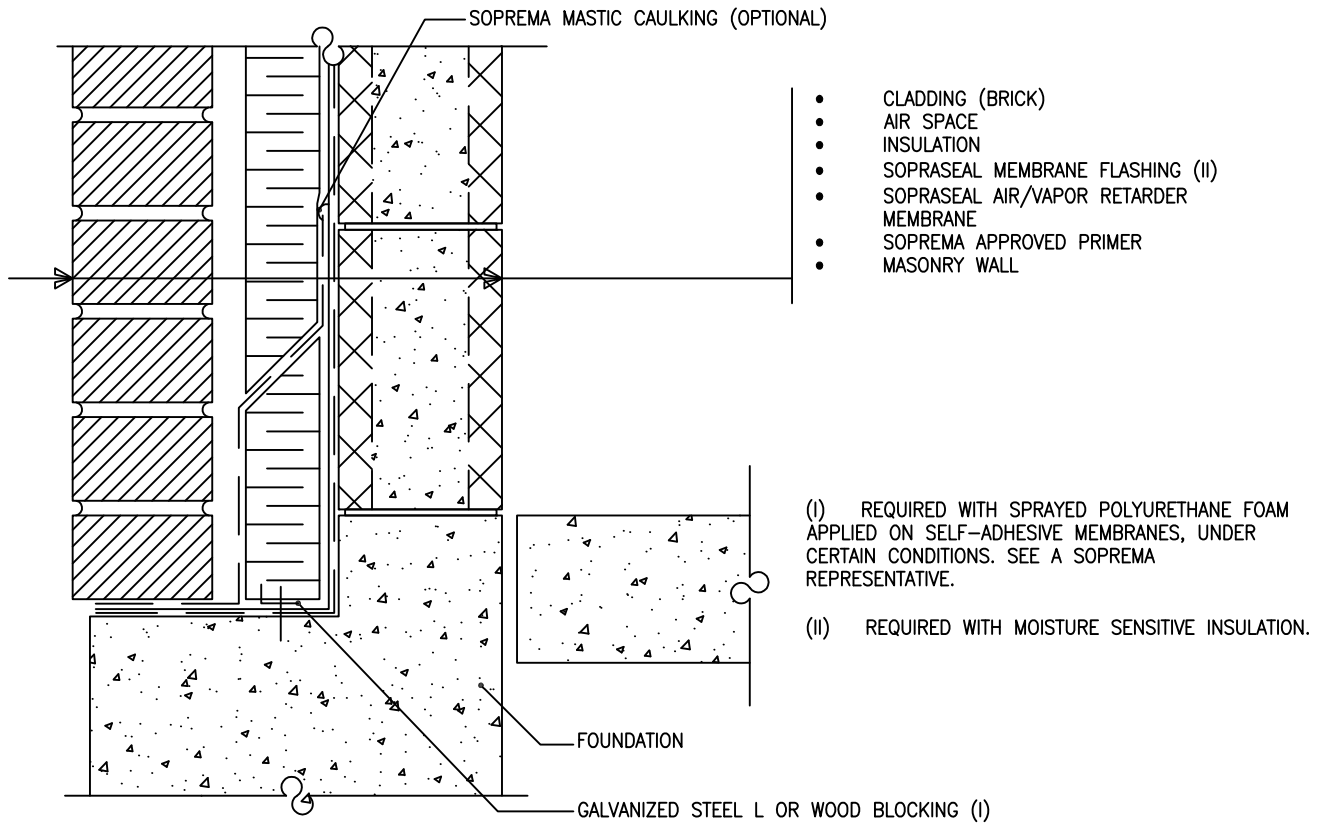
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER



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| TITLE<br>STEEL STUD WALL FLOOR JUNCTION |           |           |                           |          |
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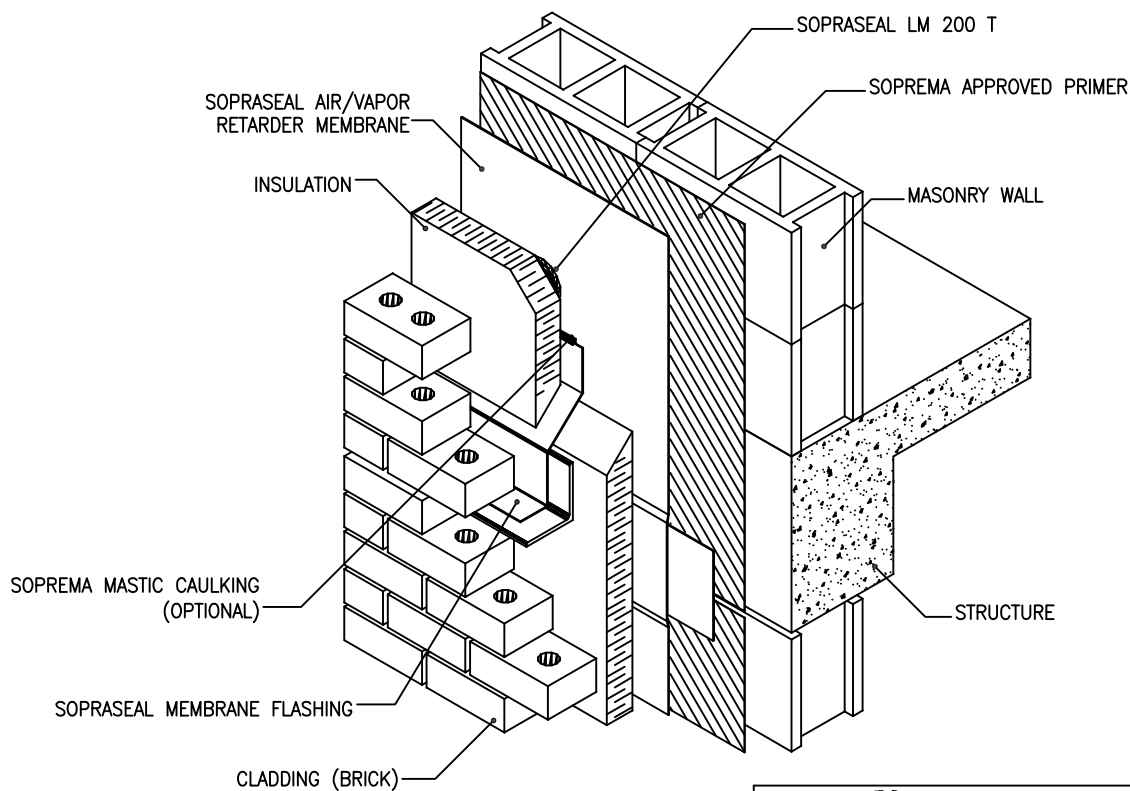
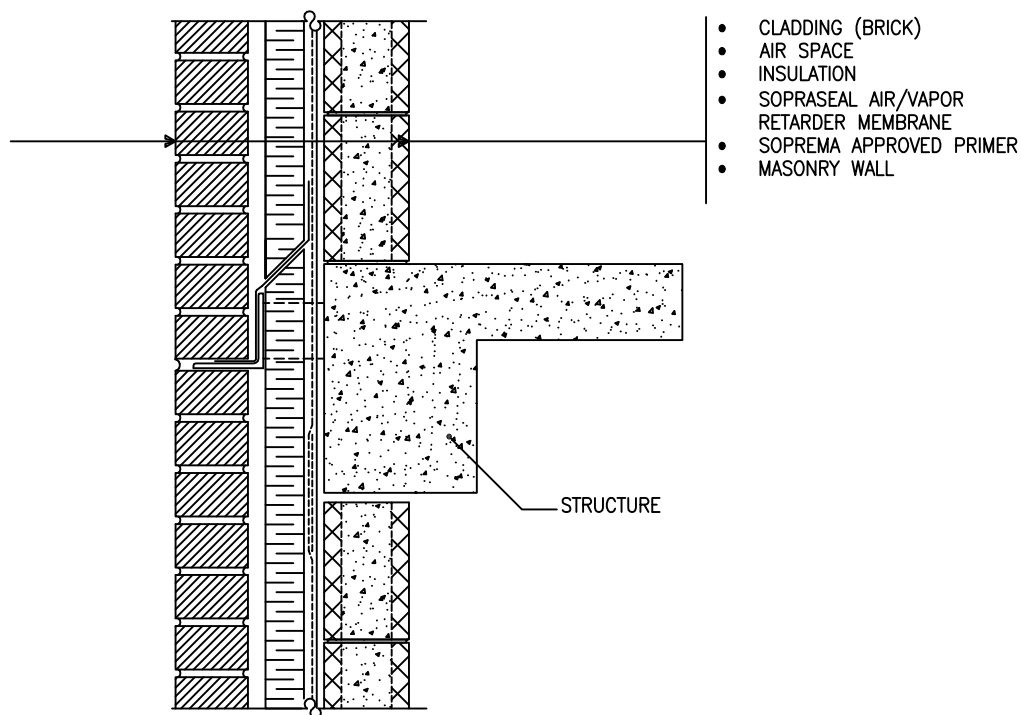
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

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|  |           | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                           |
|  |           | TITLE<br>MASONRY WALL FOUNDATION JUNCTION                    |                           |
| SCALE<br>N.T.S.  | DWN<br>RS | CHK<br>JP  | APPROVAL DATE<br>11/05/10 |
| DRAWING NUMBER<br>PAR04  |           |  | REV<br>0                  |
| <p>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</p> |           |  |                           |



**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

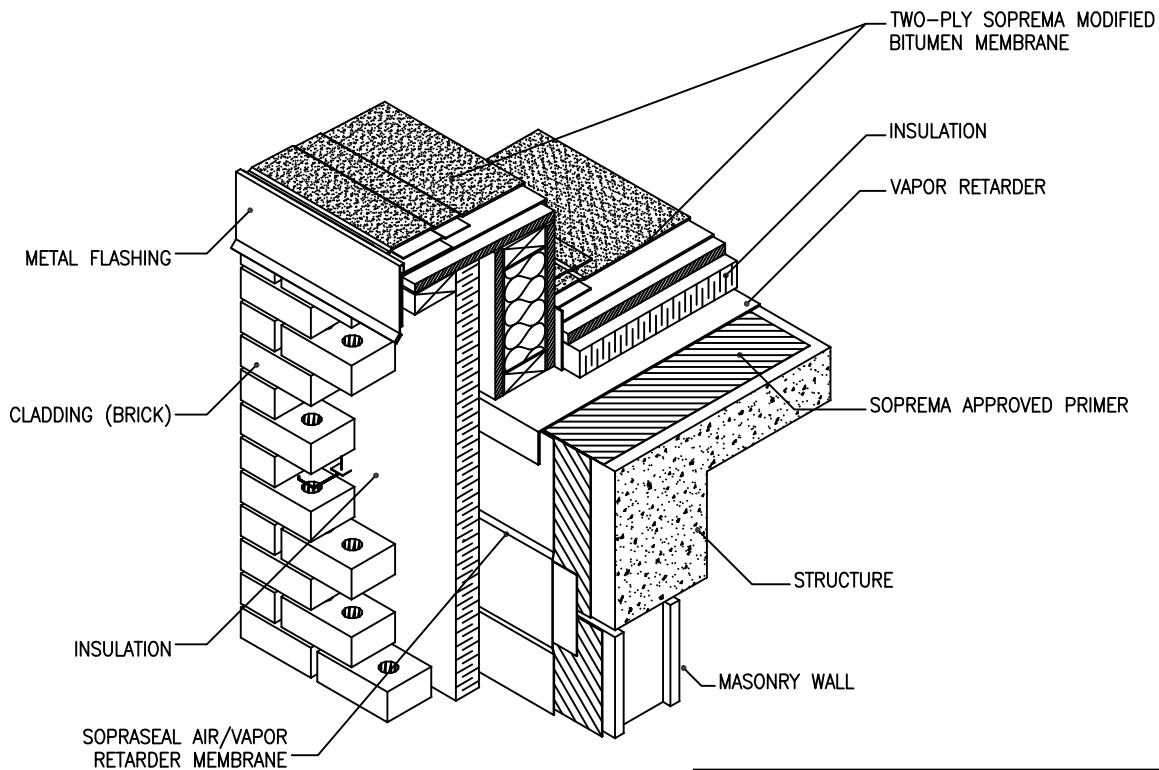
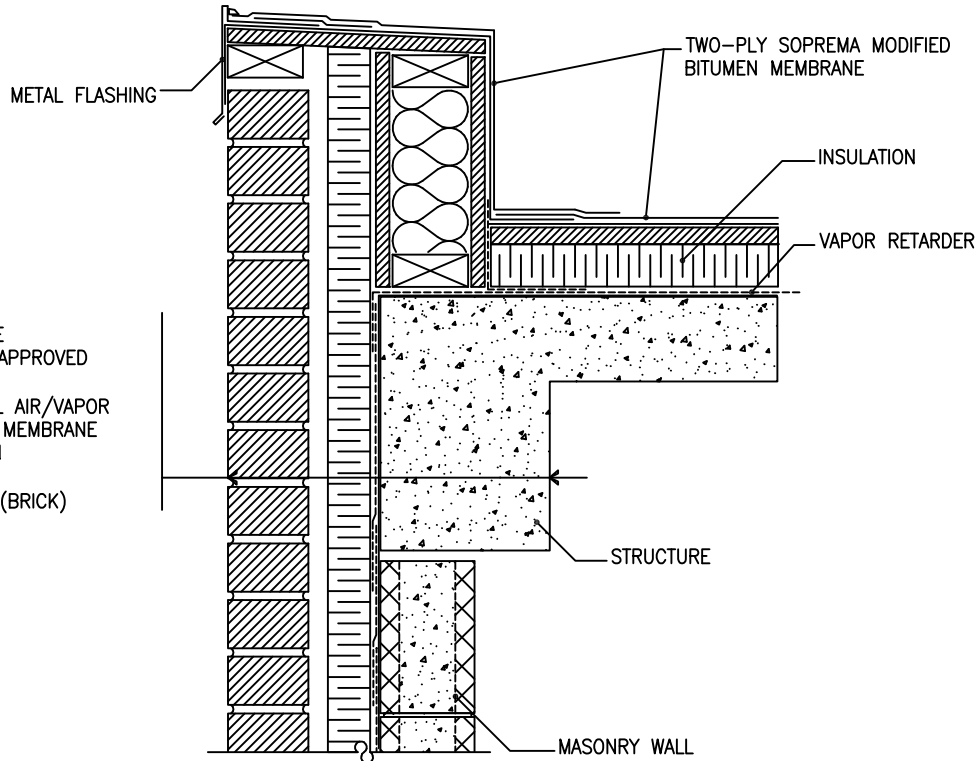


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| DRAWING NUMBER<br>PAR05              |           |           |                           | REV<br>0 |


\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.

- STRUCTURE
- SOPREMA APPROVED PRIMER
- SOPRASEAL AIR/VAPOR RETARDER MEMBRANE
- INSULATION
- AIR SPACE
- CLADDING (BRICK)

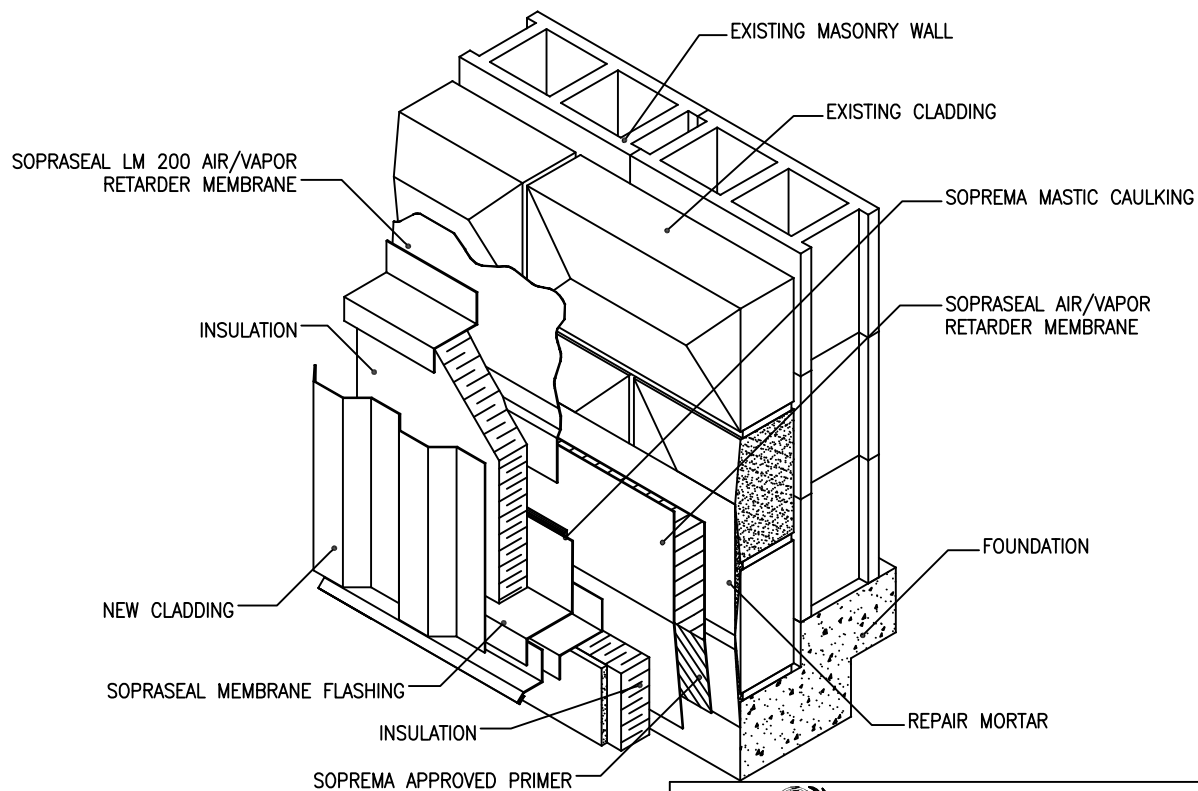
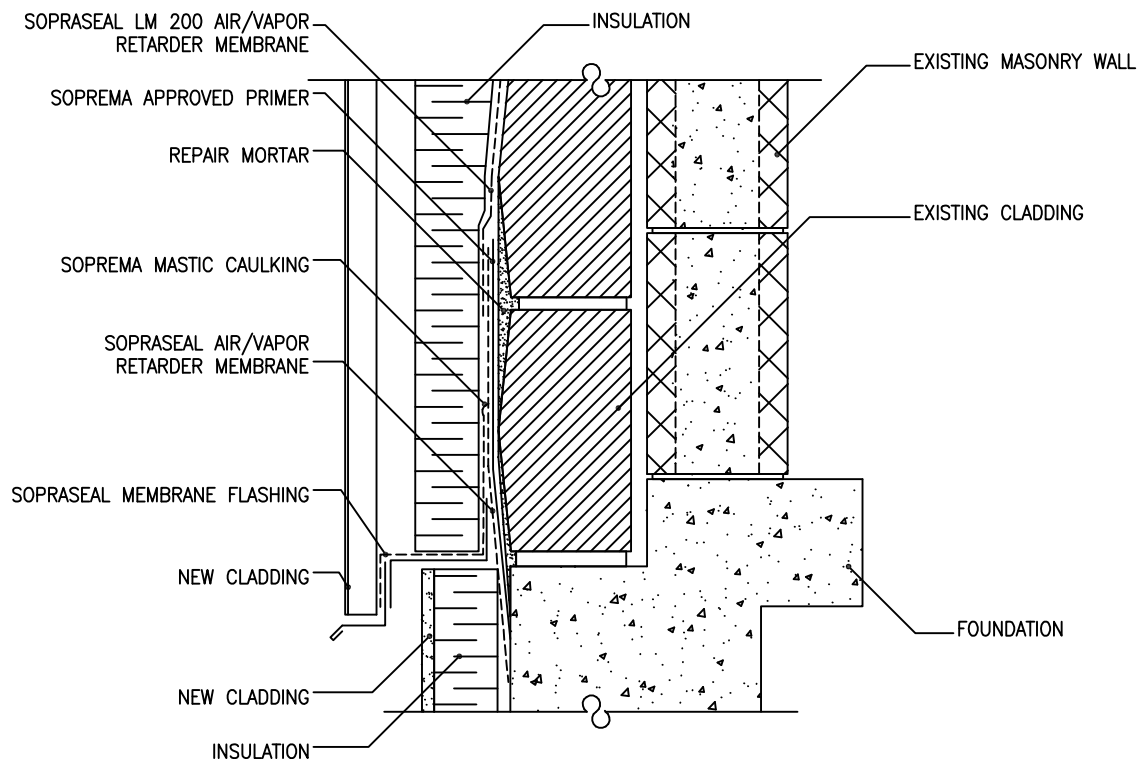


NOTES:

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2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

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| TITLE MASONRY WALL ROOF JUNCTION   |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| N.T.S.   | RS  | JP   | 11/05/10      |
| DRAWING NUMBER   |     |  | REV           |
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**NOTES:**

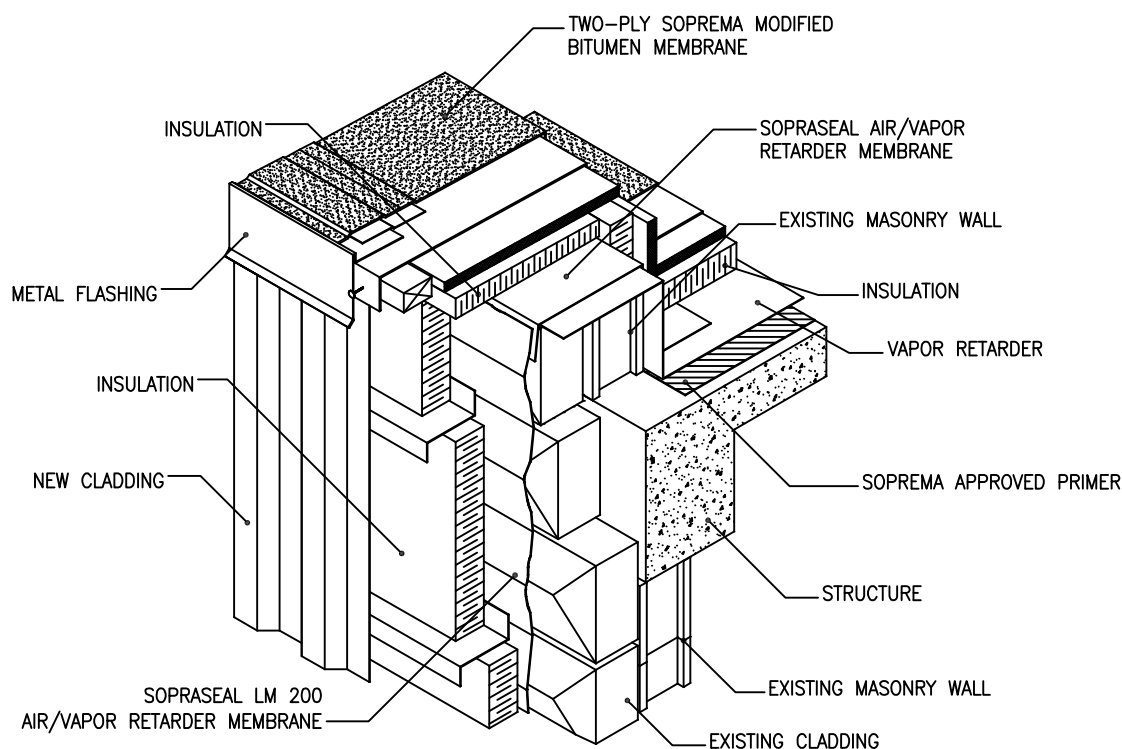
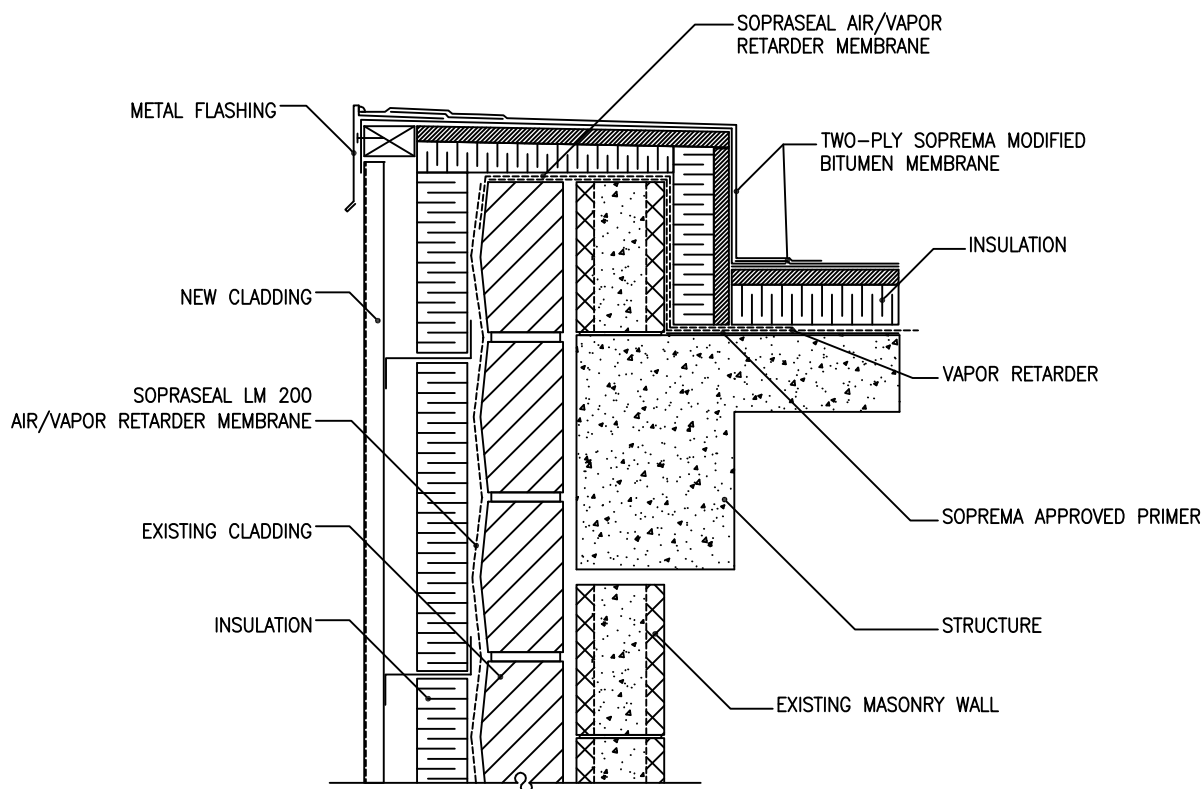
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER



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|   |           |           |                           |          |
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| TITLE<br>EXISTING OR IRREGULAR MASONRY WALL FOUNDATION JUNCTION |           |           |                           |          |
| SCALE<br>N.T.S.   | DWN<br>RS | CHK<br>JP | APPROVAL DATE<br>11/05/10 |          |
| DRAWING NUMBER<br>PAR07-A                                       |           |           |                           | REV<br>0 |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



**NOTES:**

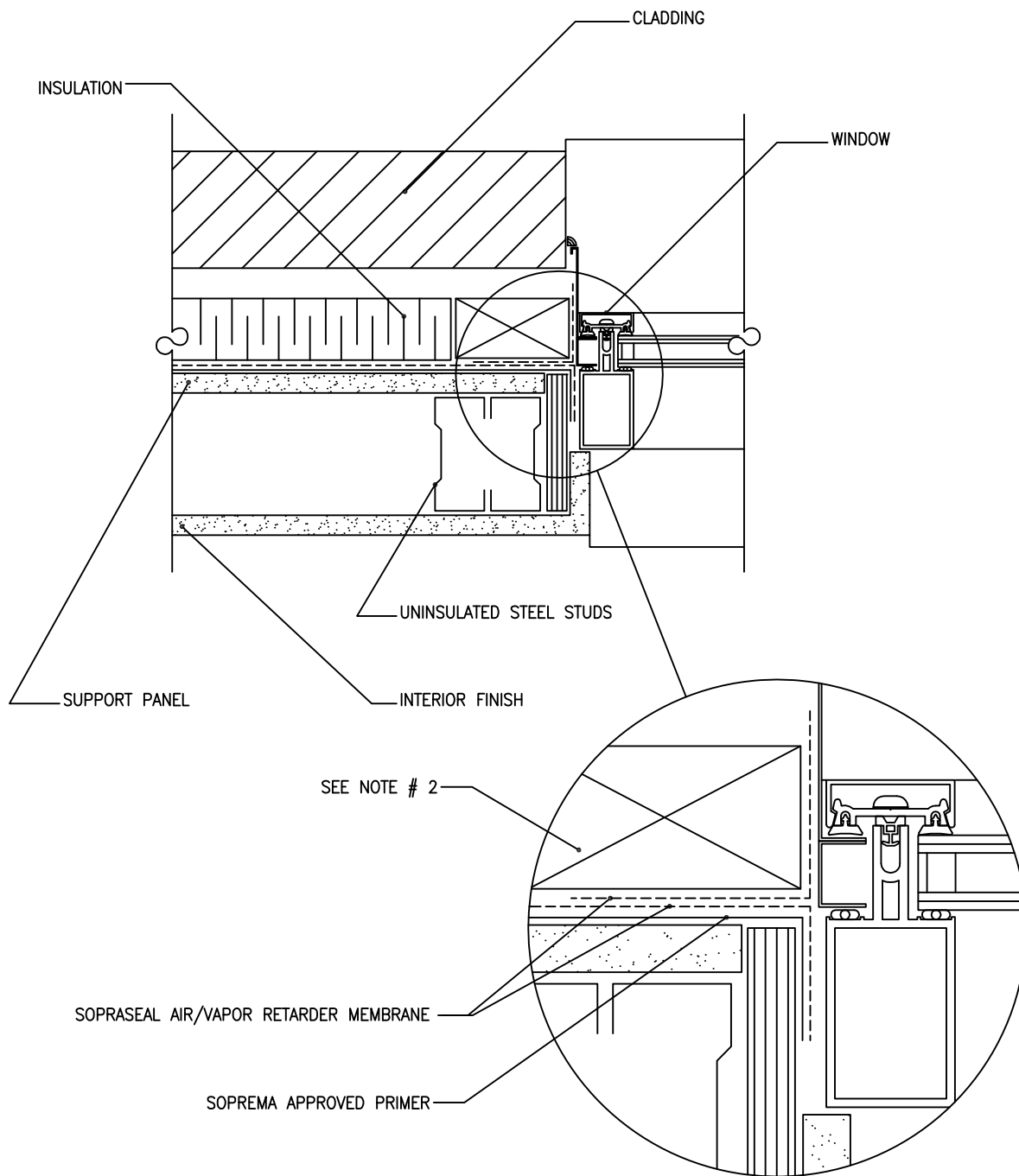
1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER



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| TITLE<br>EXISTING MASONRY WALL ROOF JUNCTION |           |           |                           |
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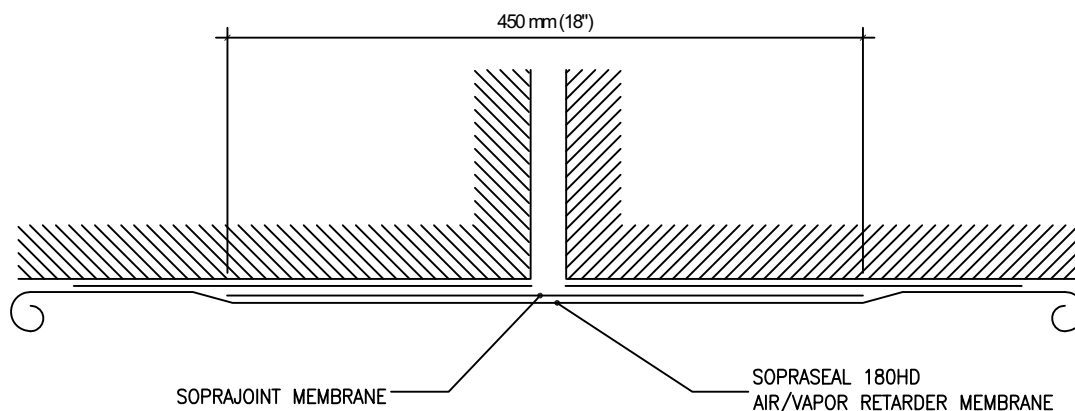
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



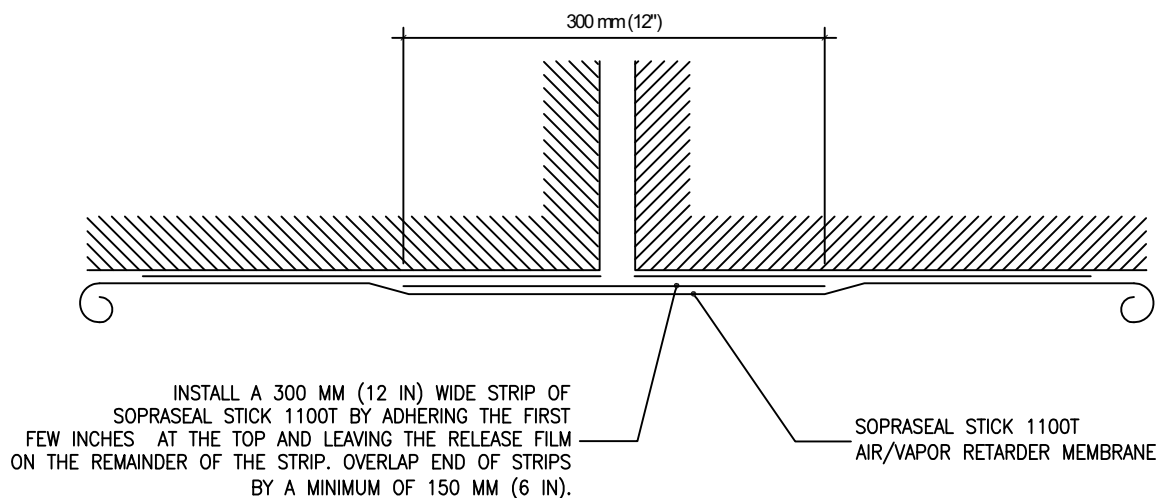
**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. WOOD BLOCKING AT OPENINGS IS RECOMMENDED WHEN USING SPRAYED POLYURETHANE INSULATION
3. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

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|    |        | 310 QUADRAL DRIVE      |        |
|  |        | WADSWORTH, OHIO 44281  |        |
|  |        | (330) 334-0066         |        |
| TITLE WINDOW   |        |                        |        |
| SCALE  | N.T.S. | DWN RS                 | CHK JP |
| DRAWING NUMBER   |        | PAR09                  |        |
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| <small>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</small> |        |                        |        |




### EXPANSION JOINT WITH TORCHED-ON MEMBRANES

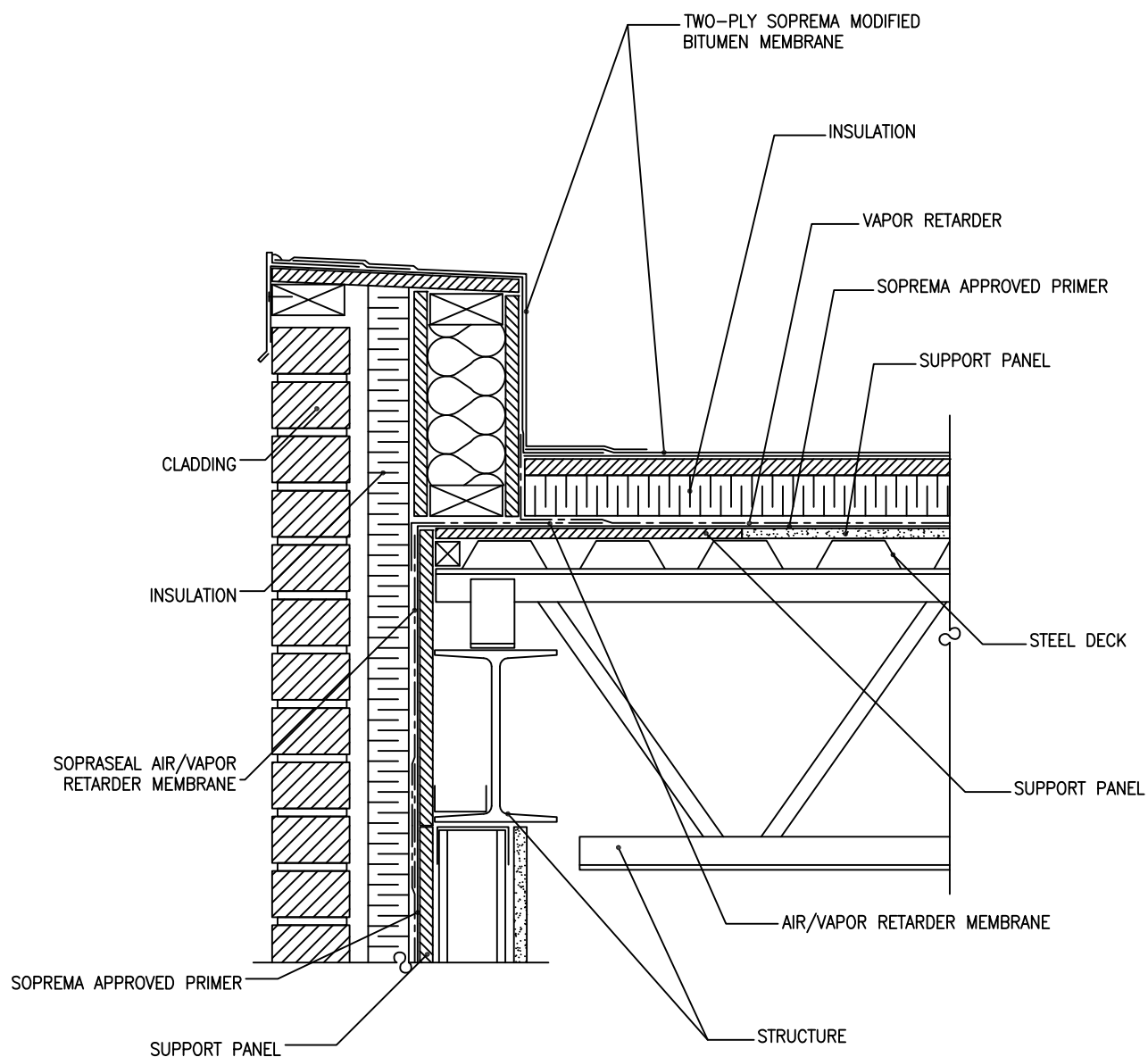


### EXPANSION JOINT WITH SELF-ADHESIVE MEMBRANE

#### NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

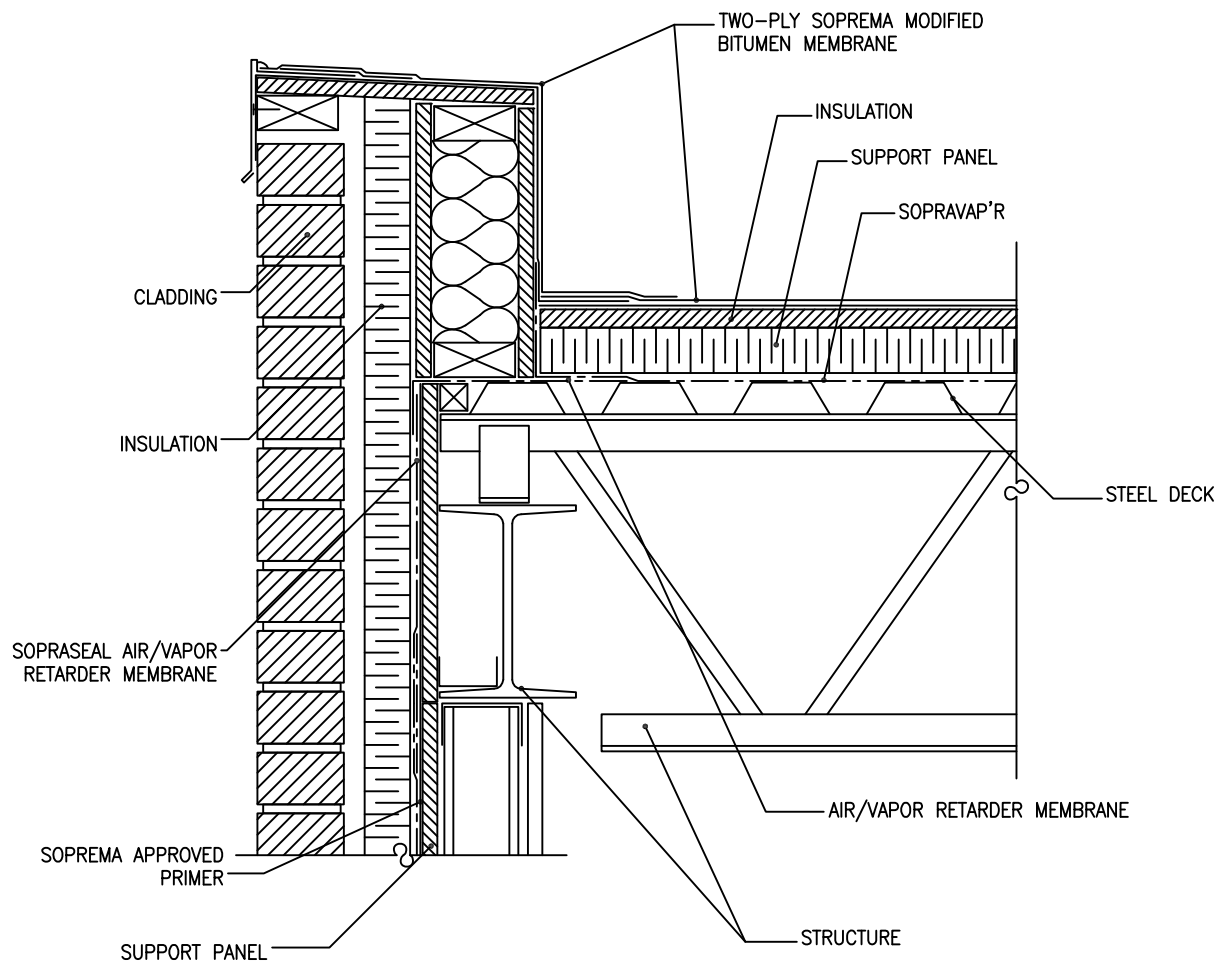
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| TITLE EXPANSION JOINT  |        |  |           |
| SCALE  | N.T.S. | DWN<br>RS  | CHK<br>JP |
|  |        | APPROVAL DATE 11/05/10                                       |           |
| DRAWING NUMBER   |        | PAR11  |           |
|  |        | REV 0  |           |
| <small>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</small> |        |  |           |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

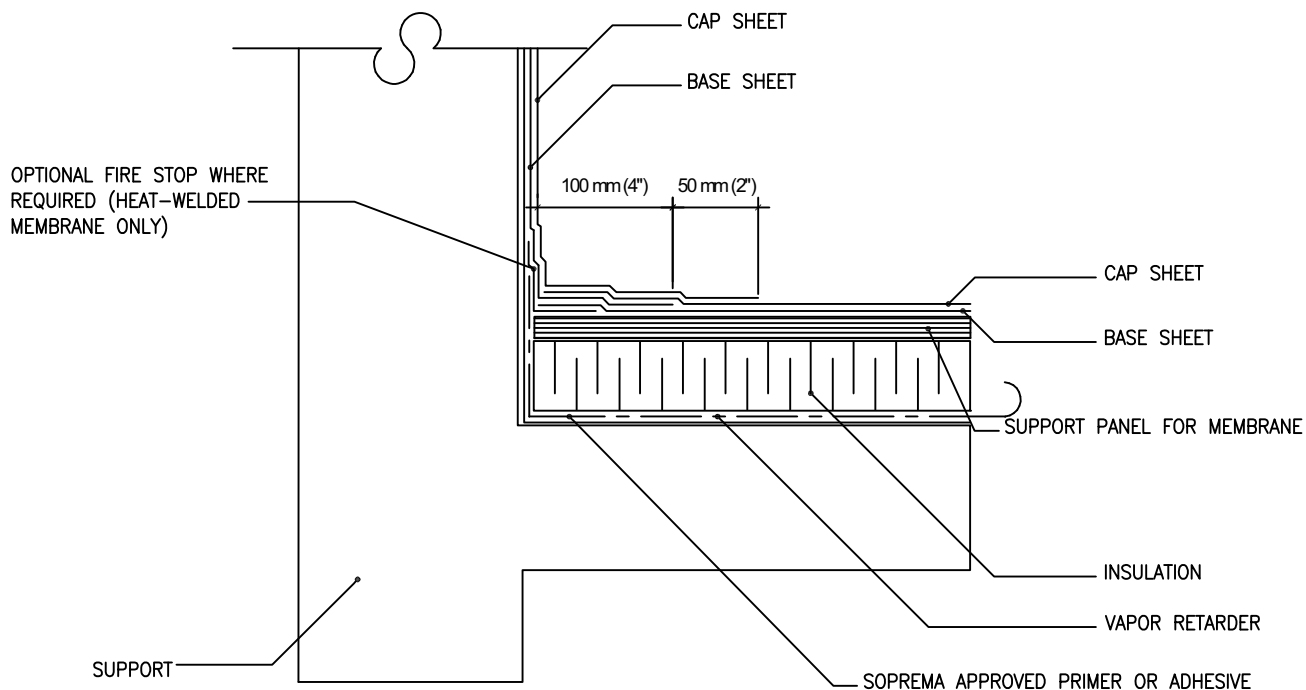
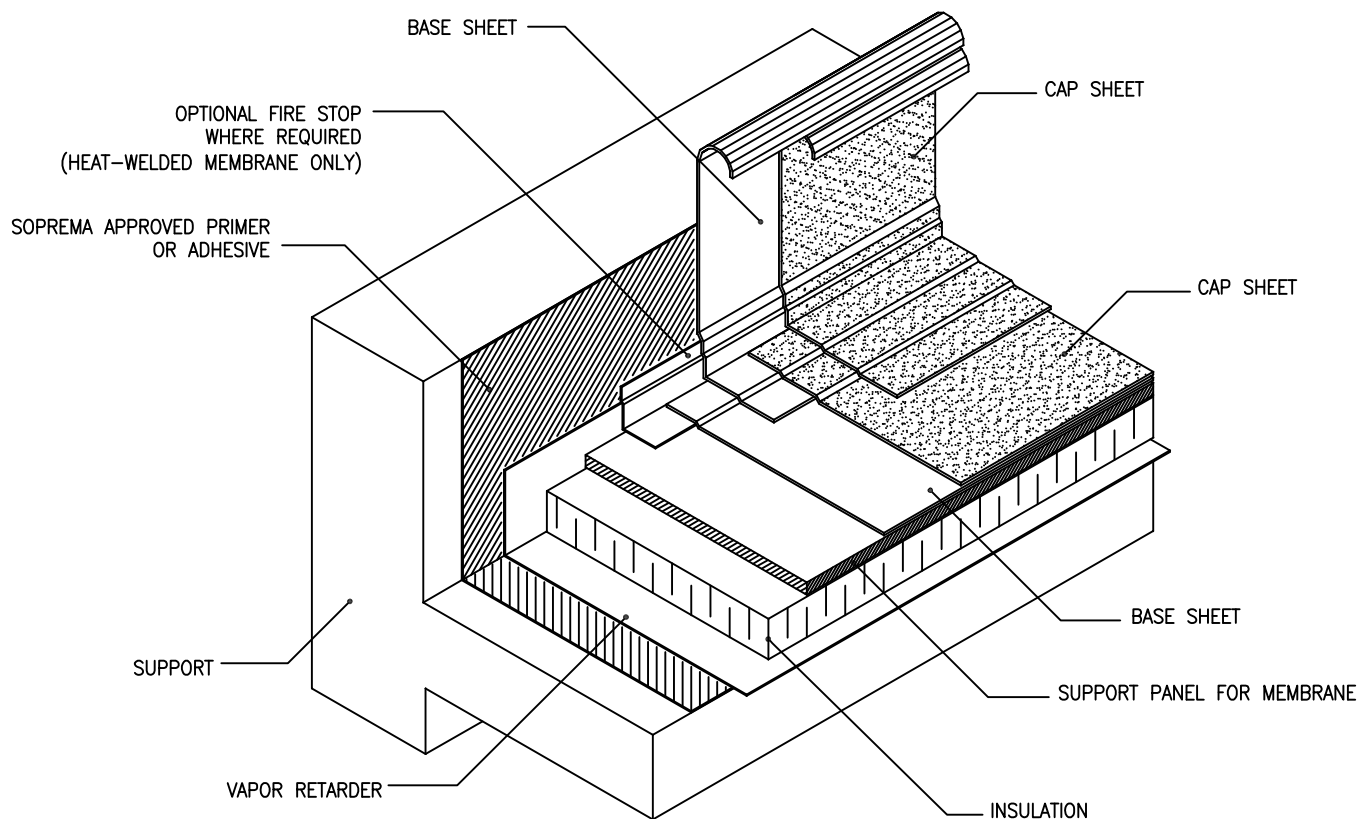
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|    |        | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |           |
|  |        |  |           |
| TITLE ROOF/WALL JUNCTION OVERBOARD ROOF JUNCTION   |        |  |           |
| SCALE  | N.T.S. | DWN<br>RS  | CHK<br>JP |
|  |        | APPROVAL DATE 11/05/10                                       |           |
| DRAWING NUMBER   |        | PARR01   |           |
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| <small>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</small> |        |  |           |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

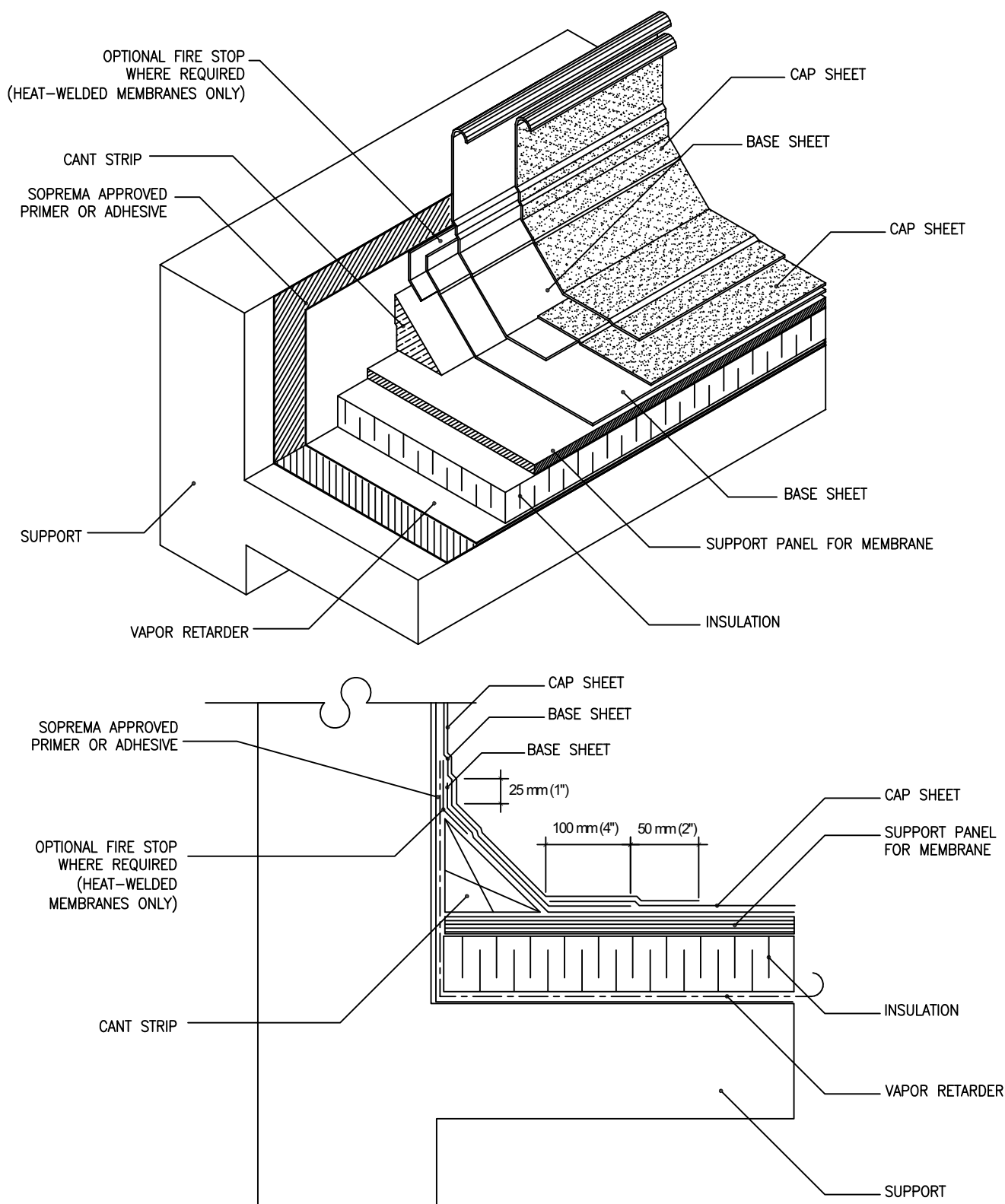
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|  |     |  |               |
| TITLE  |     |  |               |
| ROOF/WALL JUNCTION ON STEEL DECK ROOF JUNCTION   |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| N.T.S.   | RS  | JP   | 11/05/10      |
| DRAWING NUMBER   |     |  | REV           |
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| <small>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</small> |     |  |               |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. FIELD SURFACE BASE SHEET MAY GO UP ON WALL ABOUT 25MM (1") TO INSURE TEMPORARY WATERPROOFING.
3. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

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|   |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|   |     | TITLE<br>ROOF/WALL JUNCTION ROOF                             |               |
| SCALE   | DWN | CHK  | APPROVAL DATE |
| N.T.S.  | RS  | JP   | 11/05/10      |
| DRAWING NUMBER  |     |  | REV           |
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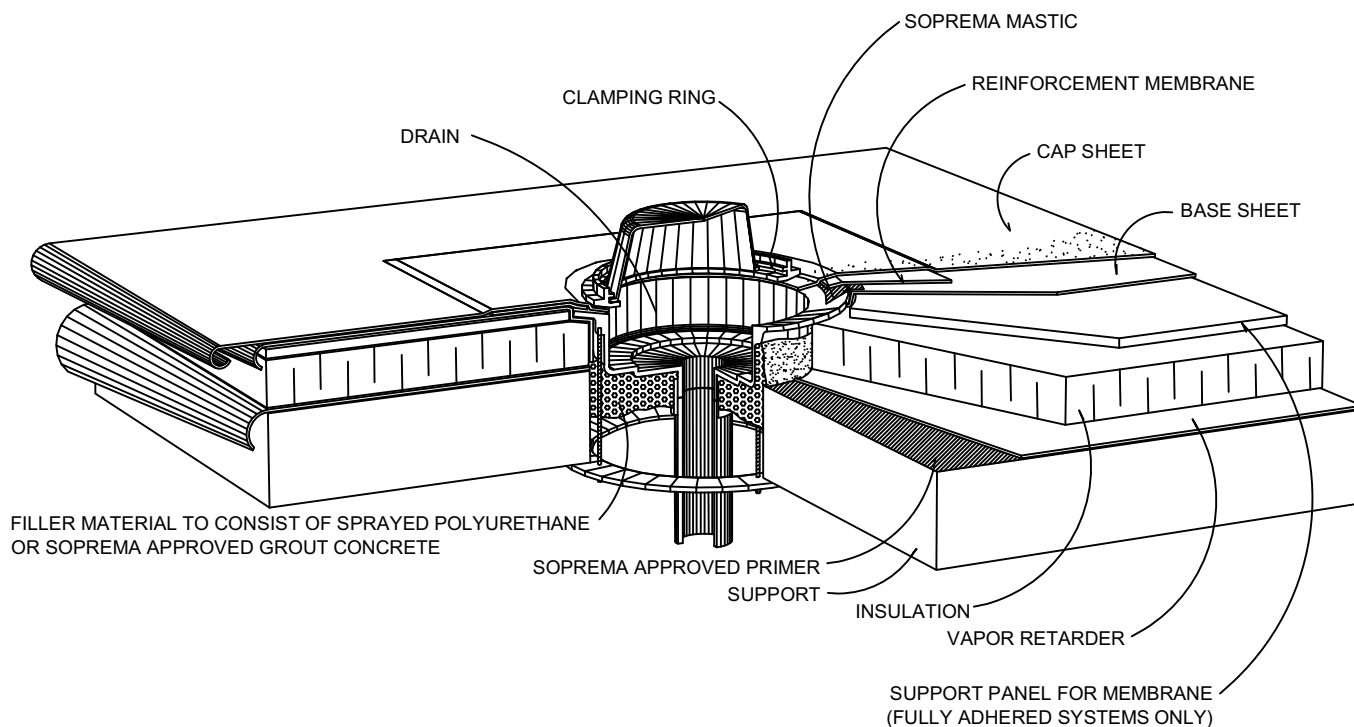
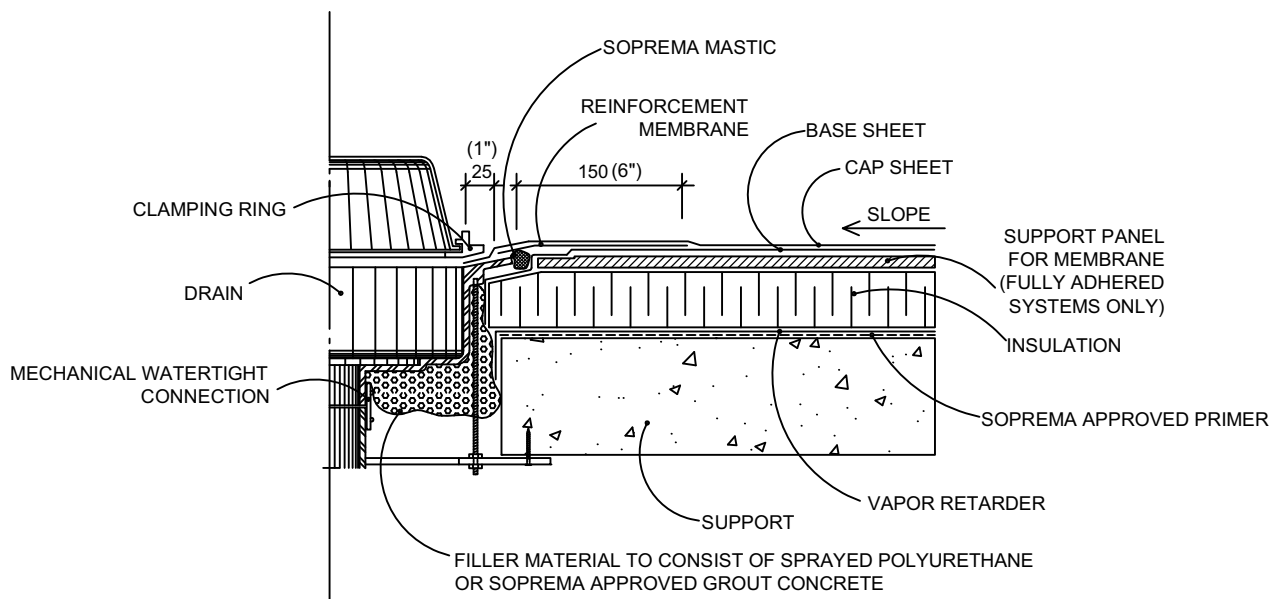


**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. FIELD SURFACE BASE SHEET MAY GO UP ON WALL ABOUT 25MM (1") TO INSURE TEMPORARY WATERPROOFING.
3. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER


|   |        |  |    |     |    |               |          |   |
|---|--------|--|----|-----|----|---------------|----------|---|
|   |        | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |    |     |    |               |          |   |
|   |        | TITLE<br>ROOF/WALL JUNCTION WITH CANT STRIP ROOF JUNCTION    |    |     |    |               |          |   |
| SCALE   | N.T.S. | DWN  | RS | CHK | JP | APPROVAL DATE | 11/05/10 |   |
| DRAWING NUMBER  |        |  |    |     |    | PARR05        | REV      | 0 |
| ** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING. |        |  |    |     |    |               |          |   |



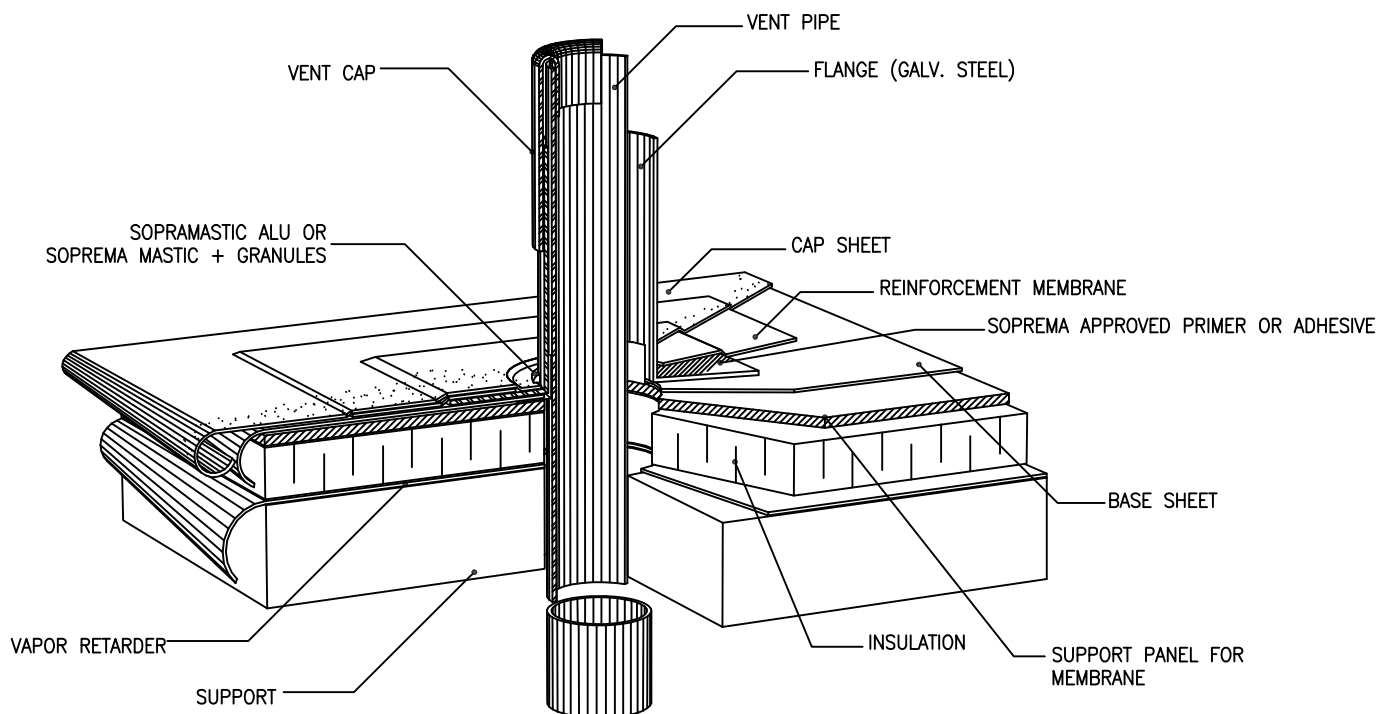
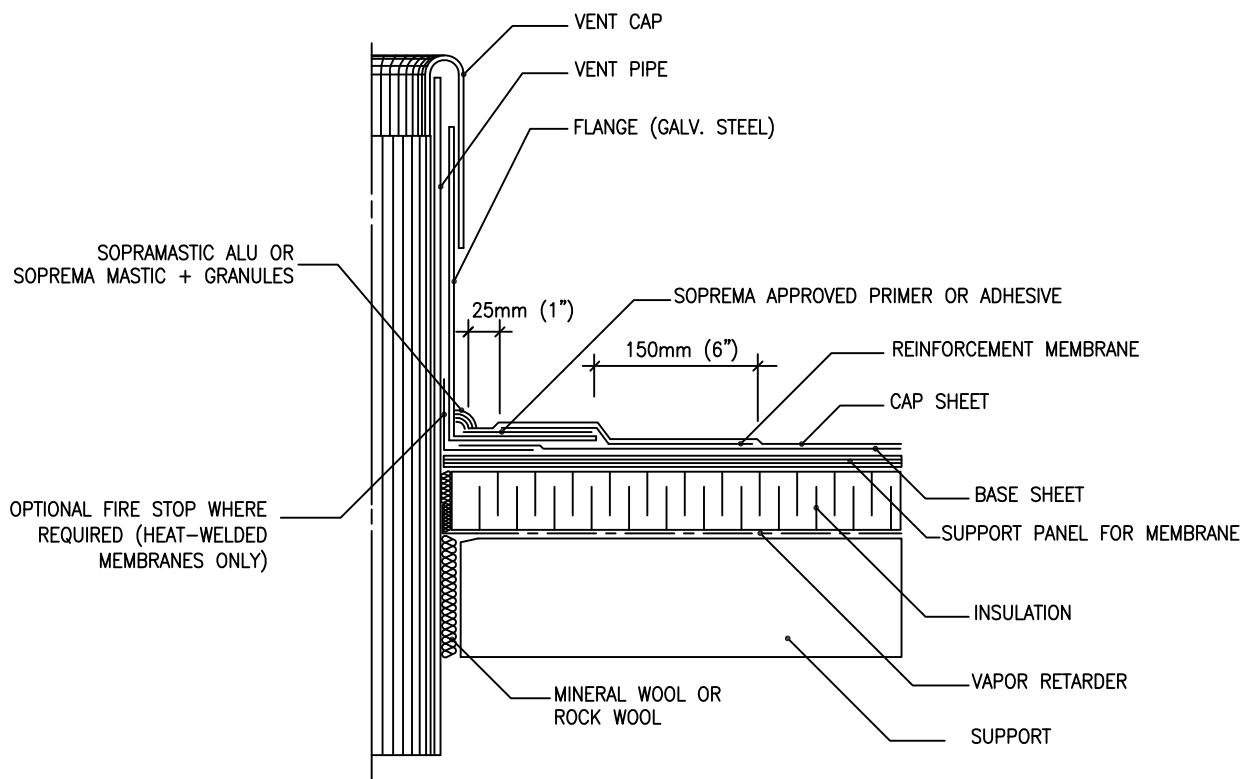


**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER


|   |        |  |          |
|---|--------|--|----------|
|  |        | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |          |
|   |        | TITLE AIR/VAPOR RETARDER DRAIN TERMINATION ROOF JUNCTION     |          |
| SCALE   | N.T.S. | DWN  | RS       |
| CHK   | JP     | APPROVAL DATE  | 11/05/10 |
| DRAWING NUMBER  | PARR06 | REV  | 0        |

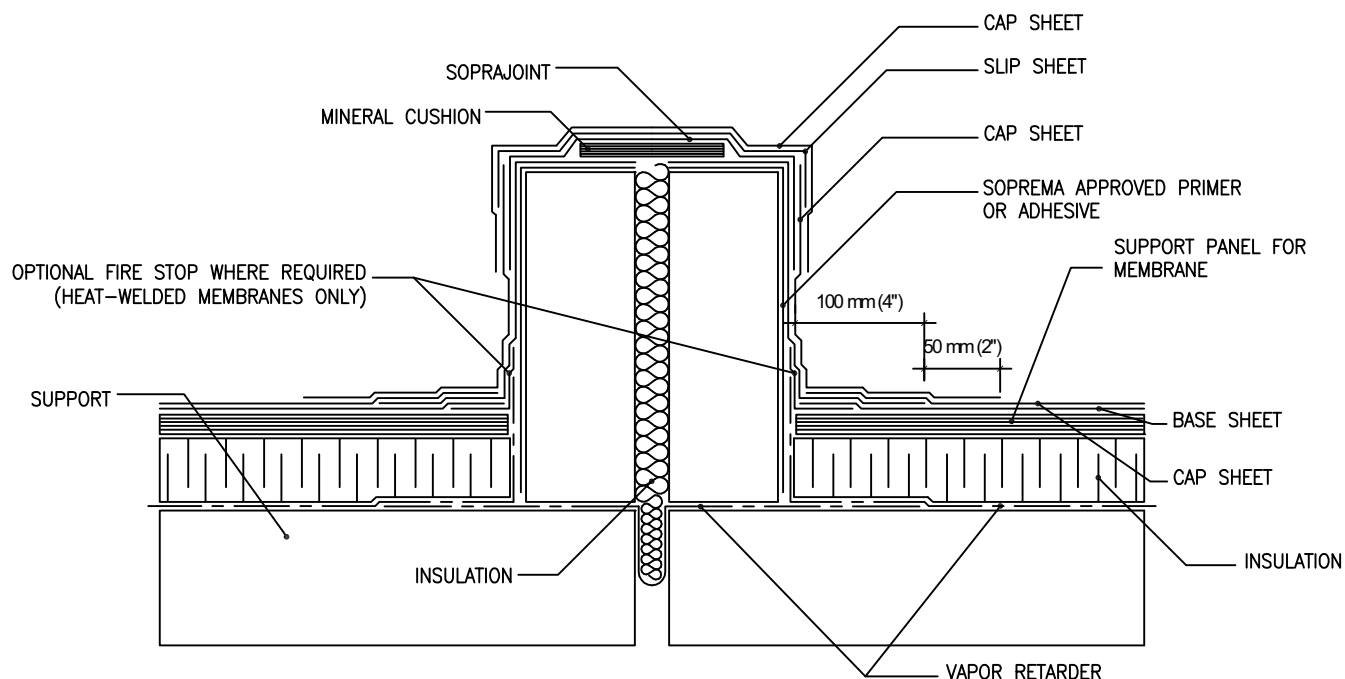
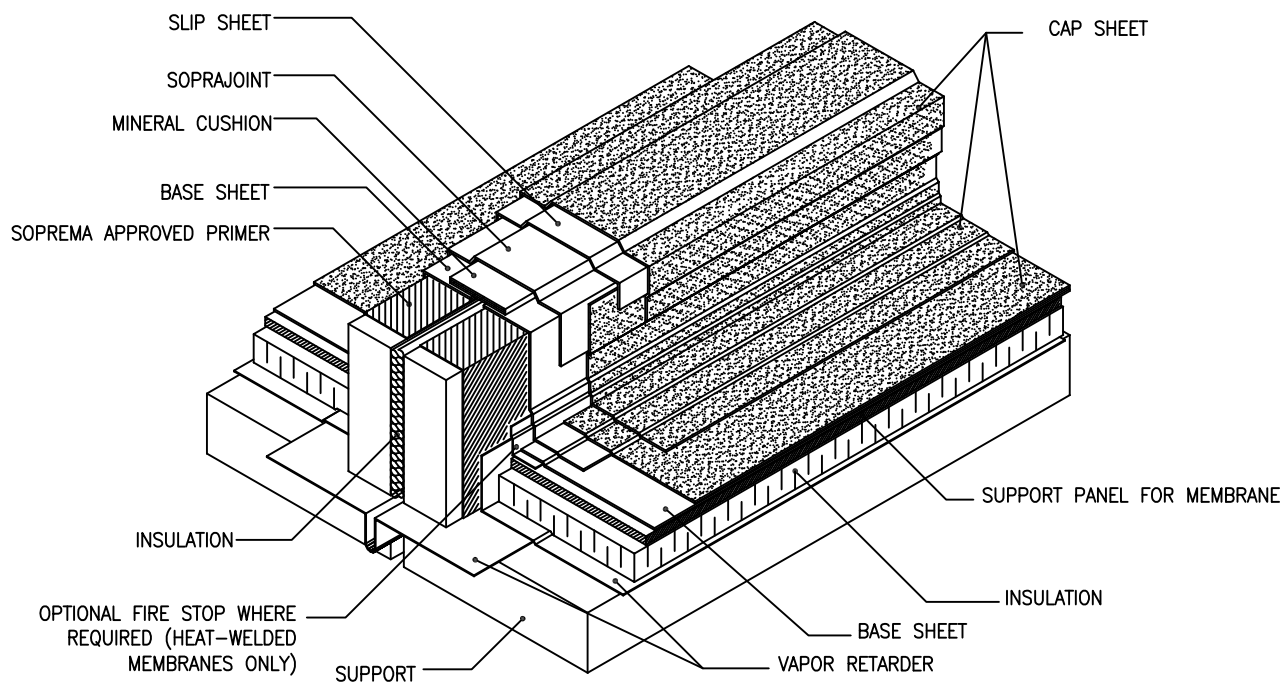
\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.



**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER

|  |     |  |               |
|--|-----|--|---------------|
|   |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|  |     | TITLE<br>PREFABRICATED VENT SLEEVE FLASHING ROOF JUNCTION    |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| N.T.S.   | RS  | JP   | 11/05/10      |
| DRAWING NUMBER   |     |  | REV           |
| PARR07   |     |  | 0             |
| <small>** USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.</small> |     |  |               |



**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA GENERAL REQUIREMENTS AND APPROVED DETAILS.
2. BASE SHEET MAY GO UP ON WALL ABOUT 25MM (1") TO INSURE TEMPORARY WATERPROOFING.
3. AIR/VAPOR RETARDER TYPE AND PLACEMENT REQUIREMENTS ARE TO BE DETERMINED BY THE SPECIFIER



310 QUADRAL DRIVE  
WADSWORTH, OHIO 44281  
(330) 334-0066

|                               |     |     |               |
|-------------------------------|-----|-----|---------------|
| TITLE                         |     |     |               |
| EXPANSION JOINT ROOF JUNCTION |     |     |               |
| SCALE                         | DWN | CHK | APPROVAL DATE |
| N.T.S.                        | RS  | JP  | 11/05/10      |
| DRAWING NUMBER                |     |     | REV           |
| PARR08                        |     |     | 0             |

\*\* USAGE OF THIS DRAWING IS GOVERNED BY THE TERMS OF SERVICE FOR SOPREMA DETAIL. PLEASE CONSULT THESE TERMS OF SERVICE PRIOR TO UTILIZING THIS DRAWING.





# ELASTOCOL 600c

ELASTOCOL 600c (09)

Order No. D38745\*

\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Elastocol 600c SA Primer is a blend of natural resins, solvent/synthetic rubber and is used on horizontal and vertical properly prepared, clean and dry concrete, metal or wood substrates prior to self-adhered field and flashing base membrane plies being installed. It is also used in priming either a high brush sanded SBS inner ply or base ply flashing prior to the self-adhesive flashing cap membrane ply being installed. The substrate must be clean, dry, and free of dust, grease or other contaminants Elastocol 600c is available in a "spray" container, Order No. D216.

See published Specifications and Approved Details.

During hot periods of the year, the self-adhesive base or inner ply and cap sheet are rolled out onto the dry substrate, set and re-rolled (scroll method). Then Elastocol 600c or other approved self-adhered primer are applied to the horizontal surface. After drying, the release film of the scrolled layer of self-adhesive membrane is removed and the membrane is matted onto the primed substrate with these steps being repeated for each succeeding layer.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL 600c  |
|----------------------|---|
| Description          | elastomeric bitumen based primer  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L)   |
| Application          | 100 - 150 ft <sup>2</sup> /gal (0.4 - 0.6 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# ELASTOCOL STICK WB PRIMER

ELASTOCOL STICK WB PRIMER (09C)

Order No. A215

\*Contact Customer Service or your Sales Representative for Order Number and availability.

## DESCRIPTION & LIMITATIONS

Elastocol Stick WB Primer is a polymer emulsion-based primer designed to improve the adhesion of self-adhesive waterproofing membranes on horizontal and vertical properly prepared, clean and dry masonry, wood, acceptable gypsum or concrete substrates prior to installation of self-adhered field and flashing base membrane plies being installed. Elastocol Stick WB Primer may be used in priming either an SBS base or inner ply prior to the flashing cap membrane being installed. Elastocol Stick WB Primer may be brush, roller, or spray applied. Spraying equipment recommendations are a tip size between 0.020 and 0.025 inch with a continuous pressure setting of 1,300 psi. Elastocol Stick WB Primer does not contain VOC's.

Elastocol Stick WB Primer Limitations:

- The cap membrane must be installed the same day as the base membrane.
- This product is not suitable for plastic surfaces such as vinyl (including PVC pipe) or water repellent treated panels.
- Avoid freezing, store Elastocol Stick WB Primer above 40° F (4.4° C). Apply under clean, dry, debris-free conditions.
- Application temperature range is 45° to 104° F (7.2° to 40° C).
- Dry time ranges from 30 minutes to 2 hours.
- May not be used to prime Soprapboard.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL STICK WB PRIMER  |
|----------------------|--|
| Description          | polymer emulsion   |
| Installation         | brush, roller, or spray  |
| Packaging            | 5 gallon (18.9 L)  |
| Application          | Up to 500 ft <sup>2</sup> /gal (0.08 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## APPLICATION

The Elastocol Stick WB Primer is ready to receive a self-adhered membrane when it has dried to a tacky texture and is no longer in a liquid state. A common test for the readiness of the primer is to simply touch/push it with a clean dry finger or knuckle. If liquid primer is exposed, or strings when the finger is removed, it is not ready for mating.

During hot periods of the year, the self-adhesive base or inner ply and cap sheet are rolled out onto the dry substrate, set and re-rolled (scroll method). Then Elastocol Stick WB Primer or other approved self-adhered primer are applied to the horizontal surface. After drying, the release film of the scrolled layer of self-adhesive membrane is removed and the membrane is matted onto the primed substrate with these steps being repeated for each succeeding layer. See published Specifications and Approved Details.

When Elastocol Stick WB Primer is used over a sand surfaced base or ply sheet, or on a vertical surface, additional dry time is recommended. Allow ten to fifteen extra minutes of dry time after the primer has passed the dryness test described above.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations. Soprema is ISO-9001:2008 Certified.





# ELASTOCOL STICK H<sub>2</sub>O

ELASTOCOL STICK H<sub>2</sub>O (09A)

Order No. D30100\*

\*For five (5) gallon cans, (19L)

## DESCRIPTION & APPLICATION

Elastocol Stick H<sub>2</sub>O is a polymer emulsion-based primer designed to improve the adhesion of self-adhesive waterproofing membranes on horizontal and vertical properly prepared, clean and dry concrete, metal, wood, acceptable gypsum or polystyrene substrates prior to installation of self-adhered field and flashing base membrane plies being installed. Elastocol Stick H<sub>2</sub>O Primer is not intended for use in priming either an SBS base or inner ply prior to the flashing cap membrane being installed. Elastocol Stick H<sub>2</sub>O Primer may be brush, roller, or spray applied. Spraying equipment recommendations are a tip size between 20 and 25 mils with a continuous pressure setting of 1,300 psi.

Elastocol Stick H<sub>2</sub>O Limitations:

- May not be used to prime base or ply sheet prior to installation of the ply or cap membrane.
- The cap membrane must be installed the same day as the base membrane.
- This product is not suitable for plastic surfaces such as vinyl or water repellent treated panels.
- KEEP FROM FREEZING.
- Minimum application temperature is 41° F (5° C).
- Dry time ranges from 30 minutes to 3 hours.
- May not be used to prime Sopraboard.

During hot periods of the year, the self-adhesive base or inner ply and cap sheet are rolled out onto the dry substrate, set and re-rolled (scroll method). Then Elastocol Stick H<sub>2</sub>O or other approved self-adhered primer are applied to the horizontal surface. After drying, the release film of the scrolled layer of self-adhesive membrane is removed and the membrane is matted onto the primed substrate with these steps being repeated for each succeeding layer. See published Specifications and Approved Details.

## COVERAGE & PACKAGING

| Product/<br>Property | ELASTOCOL STICK H <sub>2</sub> O  |
|----------------------|---|
| Description          | polymer emulsion  |
| Installation         | brush, roller, or spray   |
| Packaging            | 5 gallon (18.9 L)   |
| Application          | 100 - 200 ft <sup>2</sup> /gal (0.4 - 0.8 L/m <sup>2</sup> )<br>depending on surface & porosity |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPRASEAL WEATHERFLASH

Soprasedal WeatherFlash 4" Cut Rolls

Order No. 1001309

## DESCRIPTION

Soprasedal WeatherFlash is a self-adhesive air/vapor barrier membrane composed of self-adhesive SBS modified bitumen adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface. A silicone release film covers the self-adhesive under surface. Soprasedal WeatherFlash can fulfill multiple needs such as waterproofing and air barrier details around windows, doors, and any other wall openings.

## APPLICATION

The Soprasedal WeatherFlash membranes are applied directly to clean and dry surfaces free of oil, grease or residue. The use of a primer is recommended for some applications\*. Use a sample to verify adhesion on the substrate prior to installation. If superior adhesion is desired, apply a coat of Elastocol Stick WB Primer or Elastocol 600c Primer prior to installing the membrane.

\* Over surfaces such as OSB, wood, concrete, gypsum or fiberglass structural panels, the use of Elastocol Stick WB Primer or Elastocol 600c Primer is recommended.

Polyurethane foam may be applied over Soprasedal WeatherFlash. In this application, the membrane shall be mechanically pre-secured to the substrate using a termination bar to tie-in to window, door frames, and on occasion, the perimeter of the building.

## PACKAGING & COVERAGES

Boxes of seventy-five (75') feet (22.9 m) rolls in widths described below:

| Roll Width                       | Gross Coverage                                | Rolls Per Carton |
|----------------------------------|---|------------------|
| 4" (101 mm)                      | 25 ft <sup>2</sup> (2.3 m <sup>2</sup> )      | 9                |
| Additional Roll Widths Available |   |                  |
| 18" (457 mm)                     | 112.5 ft <sup>2</sup> (10.45 m <sup>2</sup> ) | 2                |
| 12" (304 mm)                     | 75 ft <sup>2</sup> (6.96 m <sup>2</sup> )     | 3                |
| 9" (228 mm)                      | 56.25 ft <sup>2</sup> (5.22 m <sup>2</sup> )  | 4                |
| 6" (152 mm)                      | 37.5 ft <sup>2</sup> (3.46 m <sup>2</sup> )   | 6                |

## LIMITATIONS

Soprasedal WeatherFlash is not intended to be left exposed for more than ninety (90) days. Minimum application temperature is 50° F (10° C). Maximum service temperature is 240° F (115.55° C).



## PHYSICAL PROPERTIES

### Physical Properties:

- Thickness - mils (mm)
- Bottom Face
- Top Face
- Tensile Strength, MD/XD lb/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lb/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, ft<sup>3</sup>/min·ft<sup>2</sup> (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
  
- Resistance to sustained wind load

### Standards

- 
- 
- 
- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330  
(3000 Pa - 10 s)
- ASTM E 330  
(100 Pa - 1 hr)

### Soprasedal WeatherFlash

- 25 (0.6)
- Clear silicone release film
- Tri-laminate woven polyethylene
- 64/88 (11.3 / 15.4)
- 40 / 25
- 22 (-30)
- 90 (400)
- 84/90 (375 / 400)
- 6.8 (1,200)
- 0.1 maximum
- 14.8 (2,600)
- 0.016 (0.90)
- $5.8 \cdot 10^{-5}$  (<0.0003)
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

All values are nominal.



# SOPRASEAL WEATHERFLASH

Sopralseal WeatherFlash 6" Cut Rolls

Order No. 1001306

## DESCRIPTION

Sopralseal WeatherFlash is a self-adhesive air/vapor barrier membrane composed of self-adhesive SBS modified bitumen adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface. A silicone release film covers the self-adhesive under surface. Sopralseal WeatherFlash can fulfill multiple needs such as waterproofing and air barrier details around windows, doors, and any other wall openings.

## APPLICATION

The Sopralseal WeatherFlash membranes are applied directly to clean and dry surfaces free of oil, grease or residue. The use of a primer is recommended for some applications\*. Use a sample to verify adhesion on the substrate prior to installation. If superior adhesion is desired, apply a coat of Elastocol Stick WB Primer or Elastocol 600c Primer prior to installing the membrane.

\* Over surfaces such as OSB, wood, concrete, gypsum or fiberglass structural panels, the use of Elastocol Stick WB Primer or Elastocol 600c Primer is recommended.

Polyurethane foam may be applied over Sopralseal WeatherFlash. In this application, the membrane shall be mechanically pre-secured to the substrate using a termination bar to tie-in to window, door frames, and on occasion, the perimeter of the building.

## PACKAGING & COVERAGES

Boxes of seventy-five (75') feet (22.9 m) rolls in widths described below:

| Roll Width                       | Gross Coverage                                | Rolls Per Carton |
|----------------------------------|---|------------------|
| 6" (152 mm)                      | 37.5 ft <sup>2</sup> (3.46 m <sup>2</sup> )   | 6                |
| Additional Roll Widths Available |   |                  |
| 18" (457 mm)                     | 112.5 ft <sup>2</sup> (10.45 m <sup>2</sup> ) | 2                |
| 12" (304 mm)                     | 75 ft <sup>2</sup> (6.96 m <sup>2</sup> )     | 3                |
| 9" (228 mm)                      | 56.25 ft <sup>2</sup> (5.22 m <sup>2</sup> )  | 4                |
| 4" (101 mm)                      | 25 ft <sup>2</sup> (2.3 m <sup>2</sup> )      | 9                |

## LIMITATIONS

Sopralseal WeatherFlash is not intended to be left exposed for more than ninety (90) days. Minimum application temperature is 50° F (10° C). Maximum service temperature is 240° F (115.55° C).



## PHYSICAL PROPERTIES

### Physical Properties:

- Thickness - mils (mm)
- Bottom Face
- Top Face
- Tensile Strength, MD/XD lb/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lb/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, ft<sup>3</sup>/min·ft<sup>2</sup> (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
- Resistance to sustained wind load

### Standards

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- 
- 
- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330  
(3000 Pa - 10 s)
- ASTM E 330  
(100 Pa - 1 hr)

### Soprasedal WeatherFlash

- 25 (0.6)
- Clear silicone release film
- Tri-laminate woven polyethylene
- 64/88 (11.3 / 15.4)
- 40 / 25
- 22 (-30)
- 90 (400)
- 84/90 (375 / 400)
- 6.8 (1,200)
- 0.1 maximum
- 14.8 (2,600)
- 0.016 (0.90)
- 5.8 · 10<sup>-5</sup> (<0.0003)
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

All values are nominal.



# SOPRASEAL WEATHERFLASH

Soprasedal WeatherFlash 9" Cut Rolls

Order No. 1001304

## DESCRIPTION

Soprasedal WeatherFlash is a self-adhesive air/vapor barrier membrane composed of self-adhesive SBS modified bitumen adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface. A silicone release film covers the self-adhesive under surface. Soprasedal WeatherFlash can fulfill multiple needs such as waterproofing and air barrier details around windows, doors, and any other wall openings.

## APPLICATION

The Soprasedal WeatherFlash membranes are applied directly to clean and dry surfaces free of oil, grease or residue. The use of a primer is recommended for some applications\*. Use a sample to verify adhesion on the substrate prior to installation. If superior adhesion is desired, apply a coat of Elastocol Stick WB Primer or Elastocol 600c Primer prior to installing the membrane.

\* Over surfaces such as OSB, wood, concrete, gypsum or fiberglass structural panels, the use of Elastocol Stick WB Primer or Elastocol 600c Primer is recommended.

Polyurethane foam may be applied over Soprasedal WeatherFlash. In this application, the membrane shall be mechanically pre-secured to the substrate using a termination bar to tie-in to window, door frames, and on occasion, the perimeter of the building.

## PACKAGING & COVERAGES

Boxes of seventy-five (75') feet (22.9 m) rolls in widths described below:

| Roll Width                       | Gross Coverage                                | Rolls Per Carton |
|----------------------------------|---|------------------|
| 9" (228 mm)                      | 56.25 ft <sup>2</sup> (5.22 m <sup>2</sup> )  | 4                |
| Additional Roll Widths Available |   |                  |
| 18" (457 mm)                     | 112.5 ft <sup>2</sup> (10.45 m <sup>2</sup> ) | 2                |
| 12" (304 mm)                     | 75 ft <sup>2</sup> (6.96 m <sup>2</sup> )     | 3                |
| 6" (152 mm)                      | 37.5 ft <sup>2</sup> (3.46 m <sup>2</sup> )   | 6                |
| 4" (101 mm)                      | 25 ft <sup>2</sup> (2.3 m <sup>2</sup> )      | 9                |

## LIMITATIONS

Soprasedal WeatherFlash is not intended to be left exposed for more than ninety (90) days. Minimum application temperature is 50° F (10° C). Maximum service temperature is 240° F (115.55° C).



## PHYSICAL PROPERTIES

### Physical Properties:

- Thickness - mils (mm)
- Bottom Face
- Top Face
- Tensile Strength, MD/XD lb/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lb/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, ft<sup>3</sup>/min·ft<sup>2</sup> (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
- Resistance to sustained wind load

### Standards

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- 
- 
- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330  
(3000 Pa - 10 s)
- ASTM E 330  
(100 Pa - 1 hr)

### Soprasedal WeatherFlash

- 25 (0.6)
- Clear silicone release film
- Tri-laminate woven polyethylene
- 64/88 (11.3 / 15.4)
- 40 / 25
- 22 (-30)
- 90 (400)
- 84/90 (375 / 400)
- 6.8 (1,200)
- 0.1 maximum
- 14.8 (2,600)
- 0.016 (0.90)
- $5.8 \cdot 10^{-5}$  (<0.0003)
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

All values are nominal.





# SOPRASEAL WEATHERFLASH

Sopralseal WeatherFlash 12" Cut Rolls

Order No. 1001303

## DESCRIPTION

Sopralseal WeatherFlash is a self-adhesive air/vapor barrier membrane composed of self-adhesive SBS modified bitumen adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface. A silicone release film covers the self-adhesive under surface. Sopralseal WeatherFlash can fulfill multiple needs such as waterproofing and air barrier details around windows, doors, and any other wall openings.

## APPLICATION

The Sopralseal WeatherFlash membranes are applied directly to clean and dry surfaces free of oil, grease or residue. The use of a primer is recommended for some applications\*. Use a sample to verify adhesion on the substrate prior to installation. If superior adhesion is desired, apply a coat of Elastocol Stick WB Primer or Elastocol 600c Primer prior to installing the membrane.

\* Over surfaces such as OSB, wood, concrete, gypsum or fiberglass structural panels, the use of Elastocol Stick WB Primer or Elastocol 600c Primer is recommended.

Polyurethane foam may be applied over Sopralseal WeatherFlash. In this application, the membrane shall be mechanically pre-secured to the substrate using a termination bar to tie-in to window, door frames, and on occasion, the perimeter of the building.

## PACKAGING & COVERAGES

Boxes of seventy-five (75') feet (22.9 m) rolls in widths described below:

| Roll Width                       | Gross Coverage                                | Rolls Per Carton |
|----------------------------------|---|------------------|
| 12" (304 mm)                     | 75 ft <sup>2</sup> (6.96 m <sup>2</sup> )     | 3                |
| Additional Roll Widths Available |   |                  |
| 18" (457 mm)                     | 112.5 ft <sup>2</sup> (10.45 m <sup>2</sup> ) | 2                |
| 9" (228 mm)                      | 56.25 ft <sup>2</sup> (5.22 m <sup>2</sup> )  | 4                |
| 6" (152 mm)                      | 37.5 ft <sup>2</sup> (3.46 m <sup>2</sup> )   | 6                |
| 4" (101 mm)                      | 25 ft <sup>2</sup> (2.3 m <sup>2</sup> )      | 9                |

## LIMITATIONS

Sopralseal WeatherFlash is not intended to be left exposed for more than ninety (90) days. Minimum application temperature is 50° F (10° C). Maximum service temperature is 240° F (115.55° C).



## PHYSICAL PROPERTIES

### Physical Properties:

- Thickness - mils (mm)
- Bottom Face
- Top Face
- Tensile Strength, MD/XD lb/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lb/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, ft<sup>3</sup>/min·ft<sup>2</sup> (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
- Resistance to sustained wind load

### Standards

- 
- 
- 
- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330  
(3000 Pa - 10 s)
- ASTM E 330  
(100 Pa - 1 hr)

### Soprasedal WeatherFlash

- 25 (0.6)
- Clear silicone release film
- Tri-laminate woven polyethylene
- 64/88 (11.3 / 15.4)
- 40 / 25
- 22 (-30)
- 90 (400)
- 84/90 (375 / 400)
- 6.8 (1,200)
- 0.1 maximum
- 14.8 (2,600)
- 0.016 (0.90)
- 5.8 · 10<sup>-5</sup> (<0.0003)
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

All values are nominal.



# SOPRASEAL WEATHERFLASH

Sopralseal WeatherFlash 18" Cut Rolls

Order No. 1001302

## DESCRIPTION

Sopralseal WeatherFlash is a self-adhesive air/vapor barrier membrane composed of self-adhesive SBS modified bitumen adhesive on the bottom surface and a tri-laminate woven polyethylene facer on the top surface. A silicone release film covers the self-adhesive under surface. Sopralseal WeatherFlash can fulfill multiple needs such as waterproofing and air barrier details around windows, doors, and any other wall openings.

## APPLICATION

The Sopralseal WeatherFlash membranes are applied directly to clean and dry surfaces free of oil, grease or residue. The use of a primer is recommended for some applications\*. Use a sample to verify adhesion on the substrate prior to installation. If superior adhesion is desired, apply a coat of Elastocol Stick WB Primer or Elastocol 600c Primer prior to installing the membrane.

\* Over surfaces such as OSB, wood, concrete, gypsum or fiberglass structural panels, the use of Elastocol Stick WB Primer or Elastocol 600c Primer is recommended.

Polyurethane foam may be applied over Sopralseal WeatherFlash. In this application, the membrane shall be mechanically pre-secured to the substrate using a termination bar to tie-in to window, door frames, and on occasion, the perimeter of the building.

## PACKAGING & COVERAGES

Boxes of seventy-five (75') feet (22.9 m) rolls in widths described below:

| Roll Width                       | Gross Coverage                                | Rolls Per Carton |
|----------------------------------|---|------------------|
| 18" (457 mm)                     | 112.5 ft <sup>2</sup> (10.45 m <sup>2</sup> ) | 2                |
| Additional Roll Widths Available |   |                  |
| 12" (304 mm)                     | 75 ft <sup>2</sup> (6.96 m <sup>2</sup> )     | 3                |
| 9" (228 mm)                      | 56.25 ft <sup>2</sup> (5.22 m <sup>2</sup> )  | 4                |
| 6" (152 mm)                      | 37.5 ft <sup>2</sup> (3.46 m <sup>2</sup> )   | 6                |
| 4" (101 mm)                      | 25 ft <sup>2</sup> (2.3 m <sup>2</sup> )      | 9                |

## LIMITATIONS

Sopralseal WeatherFlash is not intended to be left exposed for more than ninety (90) days. Minimum application temperature is 50° F (10° C). Maximum service temperature is 240° F (115.55° C).



## PHYSICAL PROPERTIES

### Physical Properties:

- Thickness - mils (mm)
- Bottom Face
- Top Face
- Tensile Strength, MD/XD lb/in (kN/m)
- Ultimate elongation, MD/XD (%)
- Cold Bending °F (°C)
- Static Puncture lbf (N)
- Tear Resistance, MD/XD lbf (N)
- Lap Adhesion lb/in (N/m)
- Water Absorption (%)
- Peel Resistance, lbf/ft (N/m)
- Water Vapor Permeance perm (ng/Pa · s · m<sup>2</sup>)
- Air Permeability, ft<sup>3</sup>/min·ft<sup>2</sup> (L/sec · m<sup>2</sup>)
- Resistance to gust wind load
  
- Resistance to sustained wind load

### Standards

- 
- 
- 
- ASTM D 5147
- ASTM D 5147
- ASTM D 5147
- ASTM D 5602
- ASTM D 5601
- ASTM D 1876
- ASTM D 5147
- ASTM D 903
- ASTM E 96 (Pro. B)
- ASTM E 283 (75 Pa)
- ASTM E 330  
(3000 Pa - 10 s)
- ASTM E 330  
(100 Pa - 1 hr)

### Soprasedal WeatherFlash

- 25 (0.6)
- Clear silicone release film
- Tri-laminate woven polyethylene
- 64/88 (11.3 / 15.4)
- 40 / 25
- 22 (-30)
- 90 (400)
- 84/90 (375 / 400)
- 6.8 (1,200)
- 0.1 maximum
- 14.8 (2,600)
- 0.016 (0.90)
- 5.8 · 10<sup>-5</sup> (<0.0003)
- No signs of delamination nor variation in the air permeability
- No signs of delamination nor variation in the air permeability

All values are nominal.



# SBS MASTIC

SBS MASTIC (12)

Order No. D35651

## DESCRIPTION

SBS MASTIC is made from synthetic rubbers plasticized with bitumen and solvents. SBS MASTIC is provided in a cartridge container and used as a sealant to fill the void area on all self-adhered field and flashing base ply membrane side lap edges not having a bitumen bleed-out and on self-adhered membrane T-joints. This sealant can be applied to the seam edges before or after the Elastocol 500 (horizontal surfaces ONLY) or Elastocol 600c SA Primer (horizontal or vertical surfaces) is applied to Soprema high brush sanded SBS base membrane ply surfaces or self-adhesive field or base flashing membrane ply or inner ply surface prior to the next membrane layer being adhered. This product meets ASTM D 4586, Type I, Class II.

SBS MASTIC may be used as an approved accessory for Soprema waterproofing systems.

## COVERAGE & PACKAGING

| Product/<br>Property | SBS MASTIC  |
|----------------------|---|
| Description          | sealant compound  |
| Installation         | standard cartridge gun  |
| Packaging            | caulking tube<br>10.4 oz. (310 ml)  |
| Application          | coverage varies according to size of bead,<br>temperature at application and<br>technique used by installer |

## WARRANTY

These products meet Soprema's manufacturing specification requirements.





# SOPRASEAL LM 200 S

LIQUID APPLIED AIR/VAPOR BARRIER MEMBRANE

Order No. \*

\*Contact Customer Service for Order Number and Availability.

## DESCRIPTION

SOPRASEAL LM 200 S is a water based, single component, rubberized liquid air/vapor barrier membrane which meets the requirements of the *Massachusetts State Building Code (780 CMR, Chapter 13) Energy Conservation Requirements for the Building Envelope*.

SOPRASEAL LM 200 S resists moisture and inhibits air leakage and moisture vapor transmission. It provides a highly flexible film and bridges cracks which may form in the substrate. It remains firmly bonded to the substrate even when applied over damp surfaces.

## BASIC USE & APPLICATION

Refer to SOPRASEAL LM 200 S Guide Specification & Approved Details for specific application information.

SOPRASEAL LM 200 S is designed for use on most building materials, including masonry, concrete, wood and gypsum sheathing in conjunction with rigid or semi-rigid insulation boards (including polystyrene) and Sopraseal self-adhesive and thermofusible air barrier membranes.

SOPRASEAL LM 200 S may be spray applied. Minimum application temperature is 40° F (4.4° C), if temperatures below 40° F or rain are imminent (24 hours), do not use; uncured product may be affected by water. Curing time will be affected by relative humidity, temperature and airflow. Actual cure time may differ depending on site conditions. The following are given for average conditions and standard thickness:

- Film thickness: 90 mil (2.3mm) wet, 45 mil (1.15 mm) dry
- Coverage rate: Approximately 100 ft<sup>2</sup> (10 m<sup>2</sup>) per 5 gal. pail / 1,050 ft<sup>2</sup> (145 m<sup>2</sup>) per 50 gal. drum
- Tack free film at 77° F after 1 to 3 hours. 90% cure after 7 days. Complete cure after 30 days

## FEATURES & BENEFITS

- Tenacious adhesion when applied over damp surfaces / green concrete
- No primer required
- No pre-heating required
- Monolithic, seamless application
- Easy to install
- Seals around projections such as brick ties
- Cures to a highly flexible film with crack bridging capabilities

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## PHYSICAL PROPERTIES

| Property                          | Test Method                    | Result                                  |
|-----------------------------------|--------------------------------|---|
| Specific Gravity                  | --                             | 1                                       |
| Solids by Weight (%)              | --                             | 52                                      |
| Water Vapor Permenance            | ASTM E 96                      | 34.2 ng/Pa.s.m <sup>2</sup><br>0.6 perm |
| Air Permeability (L/s-sq.)        | ASTM E 283 (75 Pa)             | <0.0007                                 |
| Resistance to gust wind load      | ASTM E 330<br>(3,000 Pa - 10s) | Complies                                |
| Resistance to sustained wind load | ASTM E 330<br>(100 Pa - 1h)    | Complies                                |

## PACKAGING

Sopraseal LM 200 s is packaged in 5 gallon pails (18.9 L) or 50 gallon drums (189 L)

Shelf Life: Up to 2 years in original, unopened containers. KEEP FROM FREEZING.

## LIMITATIONS

- Not designed for permanent exposure to UV
- Material must be kept from freezing during transport and storage
- DO NOT install when air temperature is below 40° Fahrenheit (4.4° C).
- DO NOT install when rain is imminent within 24 hours

## CLEANING

Uncured material can be cleaned using light soap and water. Cured material is best removed with solvents such as mineral spirits or xylene.

## PRECAUTIONS

Keep out of reach of children. Harmful if inhaled or swallowed. CONSULT MSDS PRIOR TO USE.



## Installation Guide

### **SOPRASEAL LM 200 S & T**

#### **PRODUCT DESCRIPTION**

**SOPRASEAL LM 200** is a water-based single component, rubberised liquid product. **SOPRASEAL LM 200 S** is used as an air/vapour barrier and **SOPRASEAL LM 200 T**, as an insulation adhesive as well as a trowel grade air/vapour barrier. They are designed for use on most building materials, including masonry, concrete, wood and gypsum board in conjunction with rigid or semi-rigid thermal insulation boards (including polystyrene) and **SOPRASEAL** self-adhesive and thermofusible air-barrier membranes.

#### **SURFACE PREPARATION**

- No primer is required.
- The substrate must be clean, solid, and free of debris, grease and any contaminants, which may compromise adhesion.
- It is designed for use on most building materials, including masonry, concrete, wood and gypsum board, etc.
- **SOPRASEAL LM 200** may be applied to lightly damp surfaces.

#### **LIMITATIONS**

- **SOPRASEAL LM 200 (T and S)** should not be permanently exposed to bad weather.
- Install and allow material to dry at air and surface temperatures of 5 °C (41 °F) or higher.
- If temperature below 0 °C (32 °F) or rain are imminent (24 hours), do not use.
- Material may be water damaged in the early stages of cure.

#### **COVERAGE** **per 19 L container**

When used as a vapour/barrier: 10 m<sup>2</sup> (100 sq. ft.)

Thickness of wet film: 2.33mm (90 mil)

Thickness of dry film: 1.15mm (45 mil)

**A notched gauge must be used to determine the applied product thickness.**

## APPLICATION

**SOPRASEAL LM 200 T** is installed with a trowel or brush.

### As an adhesive :

Apply adhesive by spots of 75 mm (3 in) at every 300 mm (12 in). More adhesive could be necessary according to the weight of panel. On the highest row of insulation, apply a continuous bead of 25 mm (1 in) wide at the top of the panels to be adhered. This bead will allow protection of the adhesives spots by limiting the flow of water behind the insulation in case of rain at the beginning of the curing time.

### As a air/vapour barrier:

- Joints and cracks lesser than 6 mm (1/4") can be filled with **SOPRASEAL LM 200 T** without using a reinforcement core. It is important to let the product cure in cracks during the night before continuing application of the **SOPRASEAL LM 200** over the entire surface.
- When cracks are greater than 6 mm (1/4") wide, they must be covered with a 150 mm SOPRASEAL STICK 1100 T self-adhesive membrane strip centred on the cracks. When a membrane must be reinforced, the ELASTOCOL STICK primer must be used in places covered by the membranes.
- Window and door frames or roofing elements must be covered with a SOPRASEAL STICK 1100 T self-adhesive membrane using the same procedure. When these membranes are installed **over** the **SOPRASEAL LM 200**, a minimum 12 hour curing time is required prior to the installation of membranes and again, it must be covered with primer.

**SOPRASEAL LM 200 S** can be applied by spraying or using a roller.

For roller application, anticipate changing the rolls regularly depending on weather conditions.

- Spraying equipment instructions:
  - Recommended inlet air pressure of 80 psi (551 kPa)
  - Direct immersion into 19 L pail
  - Spray without filter
  - 0.052" spray tip size
- Required equipment:
  - 33:1 Pump

**Note:** To prevent product contamination when spraying, cover exposed area of container with a stretch and seal "Saran wrap" type film or a cloth. If tip clogs, reverse to clear. When unit not in use, remove spray guard and tip and clean with water. If unit will

|   |  |
|---|--|
|   | not be used for several days, remove lower pump from container and flush completely with water until clear.  |
| <b>CURING AND DRYING</b>                                    | <p>To let the product dry properly, the air and surface temperature must be at minimum 2°C or higher. The cure time is affected by humidity, temperature and air circulation. The following drying times are for average conditions and for the recommended thickness. These times can vary depending on weather conditions.</p> <p>Dry to touch (tack-free): 1 to 3 hours<br/> 90% cure : 7 to 14 days<br/> Complete cure : 30 days<br/> Note : These times can change depending on weather conditions.</p> |
| <b>COMPATIBILITY</b>  | <b>SOPRASEAL LM 200 S</b> can be covered with spray applied urethane insulation. However, a minimum curing time of 7 to 14 days (depending on weather) is required prior to urethane application.  |
| <b>CLEANING</b>   | <ul style="list-style-type: none"> <li>• Uncured material can be cleaned using light soap and water.</li> <li>• Cured material is best removed by mineral spirits, xylol or by mechanical means.</li> </ul>  |
| <b>STORAGE AND HANDLING</b>                                 | <ul style="list-style-type: none"> <li>• <b>SOPRASEAL LM 200</b> may be kept 2 years in original sealed 19L containers.</li> <li>• Because this is a water-based product, it is important to keep it from freezing.</li> <li>• Keep the container tightly sealed in a place where temperatures are between 2°C to 30°C (35°F to 90°F).</li> <li>• <b>SOPRASEAL LM 200 S</b> and <b>T</b> are not considered dangerous to transport.</li> </ul>   |
| <b>CONSULT THE MATERIAL SAFETY DATA SHEET PRIOR TO USE.</b> |  |



## VEGETATIVE ROOF ASSEMBLIES (GARDEN GUIDE SPECIFICATION)

### PART I GENERAL

#### 1.01 Summary

- A. This is meant to be a guide specification for overburden placed over a waterproofing assembly from the section **XXXXXX** or Roofing portion of this specification
- B. Furnish all labor, materials, tools, and equipment to furnish and install garden roof system, drainage materials, growth media and plants on a low-sloped roof.

#### 1.02 PERFORMANCE REQUIREMENTS

- A. Maintain a vegetated green roof for the life of the purposed warranty.
- B. Install all components of green roof in accordance with manufactures guidelines and in a manor that will not damage the waterproofing membrane.

#### 1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM).
- B. Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau (FLL) guidelines

#### 1.04 DEFINITIONS

- A. Garden Roof -- An area of planting/landscaping, built up on a waterproofed substrate at any level that is separated from the natural ground by a man-made structure.
- B. Extensive Garden Roof -- Low maintenance landscaping consisting of shallow soil depths (3 to 6 inches) with plant varieties to be chosen by a certified Landscape Architect.
- C. Semi-Intensive Garden Roof – Medium maintenance landscaping consisting of medium soil depth (6 to 8 inches) with plant varieties to be chosen by a certified Landscape Architect.
- D. Intensive Garden Roof – Higher maintenance landscaping consisting of high soil depths (8+ inches) with plant varieties to be chosen by certified Landscape Architect.
- E. Garden Roof Contractor – A contractor certified by the Garden Roof System Manufacturer to install all components of a comprehensive green roof system including, but not limited to protection layer, thermal insulation, drainage layer, filter fabric, edging, growing medium (soil), and vegetation.

#### 1.05 SYSTEM DESCRIPTION

- A. Furnish and install a completed Garden Roof System including geotextile leveling layer, protection layer/root barrier, rigid thermal tapered insulation, drainage layer, filter fabric, river gravel maintenance strip / ballast or pavers, lightweight engineered growing medium (soil), and vegetation.

#### 1.06 SUBMITTALS

- A. Product Data: For each type of roofing material indicated.
  - 1. Provide product data on all components of the garden roof assembly.
  - 2. Submit list of materials and data sheets describing physical characteristics and performance

- criteria for materials proposed for use
3. Include sample of warranty customized for this project.
- B. Shop Drawings: Include plans, sections, details, and attachments to other Work, flashing sheets, roof penetrations, vertical intersections, roof slope, expansion joints, membrane terminations, soil depth, planting schedule and drainage.
- C. Samples for Verification: For each of the following products:
1. Submit sample of ballast.
  2. Manufacturer's standard sample of tapered board insulation.
  3. Manufacturer's standard sample of drainage/water storage board, protection layer and moisture relocation mat.
  4. Submit a sample bag of soil media.
  5. Nursery's listing of available plants complying with listed specifications.
  6. 12" section of perforated metal edging.
- D. Installer Certificates: Signed by manufacturer's certifying that installers comply with requirements.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency.
- F. Maintenance: Provide scope for yearly maintenance of Garden Roofing.
- G. Warranties: Provide documentation either with roof warranty or stand alone for Garden Roof components.
- H. Inspection Report for Information: Copy of roofing system manufacturer's inspection report of completed roofing membrane.

#### 1.07 QUALITY ASSURANCE

- A. Refer to Section 1.06 SUBMITTALS.
- B. The Garden Roof Contractor shall demonstrate qualifications to perform the work of this Section by submitting the following documentation:
1. Approved by the Garden Roof System Manufacturer as an authorized installer in good standing.
  2. List of at least three (3) projects, satisfactorily completed within the past three (3) years, of similar scope and complexity to this project. Previous experience submittal shall correspond to specific Green Roof System proposed for use by Green Roof/Waterproofing Contractor.
- C. Installation of leveling layer, separation layer, drainage layer and insulation shall be the responsibility of the Garden Roof Contractor to ensure undivided responsibility.
- C. Supplier Qualifications:
1. Green Plant supplier that specializes in the propagation of green roof plants.
  2. Green Roof plant supplier must have 5 years experience in the production and maintenance of green roof plants specifically chosen.
  3. Engineered planting media by a firm that specifically mixes rooftop media and is approved by Soprema.
- D. Drainage mat manufacture should have successfully produced drainage mat material for at least 15 years.

- E. Garden Roof System Manufacturer shall have available an in-house technical staff to assist the Garden Contractor, when necessary, in application of the products and final inspection of the assembly.
- F. Pre-construction conference to be held with the Owner, Architect, Garden Roof Contractor's field superintendent, Garden Roof System Manufacturer's representative, and other involved trades to discuss waterproofing practices applicable to this project, including schedule for waterproofing, flood testing, installation or soil media and planting schedule. Pre-installation conference should include general contractor's plan for green roof protection, if necessary.
  - 1. Review structural load limitations of roof deck during and after roofing.
  - 2. Review flashing, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
  - 3. Review regulations and requirements of authorities having jurisdiction for insurance certifications, inspection and testing, if applicable.
  - 4. Review temporary protection requirements for roofing system during and after installation.
  - 5. Review roof observation and repair procedures after roofing installation.
- G. Water testing of the completed waterproofing system (minimum of 24 hours) is required. Water testing shall be witnessed and confirmed in writing by the Owner's Representative, the Garden Roof Contractor, and the Garden Roof System Manufacturer's representative.
- H. All work shall be completed by trained and authorized personnel.

#### 1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in original unopened containers of packaging clearly labeled with manufacturer's name, brand name, instruction for use, all identifying numbers, and U.L. labels.
- B. Materials shall be stored in a neat, safe manner, not to exceed the allowable structural capacity of the storage area.
- C. Store materials in a clean, dry area protected from water and direct sunlight.
- D. Membrane rolls shall be stored lying down on pallets and fully protected from moisture with canvas tarpaulins.
- E. Bonding adhesives shall be stored at temperatures above 40°F (5°C).
- F. Deliver roof media in bags on site and protect from contamination dumping on site is not accepted.

#### 1.09 PROJECT CONDITIONS

- A. Proceed with Garden roof installation only after water test has been completed. Owner's Representative and/or Architect and Garden Roof Contractor must water test results before proceeding with membrane installation.
- B. Do not work in rain or snow or adverse weather conditions. Comply with applicable installation requirements for all components.
- C. All work shall be scheduled and executed without exposing the interior building areas to the affects of inclement weather. The building and its contents shall be protected against all risks.

- D. The Garden Roof Contractor shall take precautions that storage and/or application of materials and/or equipment does not overload the deck or building structure.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner, at all times, as to preclude wind blow-off or damage.
- F. Arrange work sequence to avoid use of newly-constructed garden roof for storage, walking surface, and equipment movement. Where such access is absolutely required, the Roof/Waterproofing Contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Any damage which occurs to the garden roof system is to be brought to the attention of the Owner's Representative and/or Architect and the Garden Roof System Manufacturer's representative. All damage is to be repaired according to Garden Roof System Manufacturer recommendations.
- G. Prior to and during installation, all dirt, debris and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air, pressure washing and/or similar methods per manufacturer's written instructions.
- H. All materials shall be immediately taken off the site to a legal dumping or recycling area authorized to receive such materials.
- I. If any unusual or concealed condition is discovered, stop work and notify the Owner's Representative and/or Architect and Garden Roof System Manufacturer's representative immediately, in writing.
- J. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat. All products including solvents, compatible with and not detrimental to plant components and plant growth.
- K. Contaminants, such as grease, fats, oils, and solvents, shall not be allowed to come into direct contact with the waterproofing membrane. Any such contact shall be reported to Owner's Representative and/or Architect and the Garden Roof System Manufacturer's representative immediately.
- L. The Garden Roof Contractor shall verify that all drain lines are connected and un-blocked before starting work. Report any such blockages or non-connected drains to the Owner's Representative and/or Architect in writing.
- M. Site cleanup, including both interior and exterior building areas below or adjacent to, or in any way affected by the construction, shall be complete and to the Owner's satisfaction.
- N. All landscaped areas affected by the garden roof system installation shall be raked clean and restored to original conditions, if required.
- O. All paved areas shall be swept clean.
- P. All areas stained, dirtied, and discolored or otherwise damaged due to the garden roof system installation shall be cleaned, restored, and replaced as required.
- R. Garden Roof Contractor shall assure that adequate protection is provided after installation so other trades do not damage garden areas.

#### 1.10 WARRANTY

- A. Please refer to the roofing portion of this specification to see what the warranty will cover. The following are some components that may or may not be covered: protection layer/root barrier,



rigid thermal tapered insulation, drainage layer, filter fabric, river gravel maintenance strip / ballast, lightweight engineered growing medium (soil), vegetation, and automatic irrigation system. All components must be warranted by the Roofing Manufacture as a single-source warranty for all components.

Some warranties includes comprehensive coverage of plant survivability at a rate of 80% after two years, as well as possibly the removal and replacement of overburden to access the waterproofing membrane.

1. Duration of Membrane/Flashing: See Roofing Section
2. Duration of Insulation: See Roofing section
3. Material Integrity of Green Roof Components: 20-years
4. Extensive Vegetation: 2-year thrive coverage (min. 50% coverage after 1<sup>st</sup> year; 80% after 2<sup>nd</sup>)

## PART II PRODUCTS

### 2.01 MATERIALS

- A. General: Provide products required by manufacturers to be fully compatible with each other and with indicated substrates, or provide separation materials as required to eliminate contact between Incompatible materials.

1. See Roofing section of specification

- B. Root barrier (choose one of the following)

1. **MicroFab Root Barrier** – Is a 18 mil thick, coated woven, micro-perforated polyethylene fabric. Used above the drainage layer/moisture retention layers.

Properties

- a. Roll lengths: 300'x11' or 300'x3'
- b. Roll weight: 105 lbs or 30 lbs
- c. Thickness: 18 mils
- d. Tensile Strength: 45 lb/ft
- e. Elongation at Break: 15%
- f. Tear strength: 6.7 lb/ft
- g. Mullen Burst Strength: 70 psi

2. **Sopranature RB20/30** – Available in 20 mil or 30 mil thicknesses. Virgin-blended linear polyethylene. Used below the drainage layer. Double-sided and single sided BUTYL tape available to tape seams.

RB20 Properties

- a. Roll lengths: 508 sq ft or 762 sq ft
- b. Tensile Strength: 75 lbs.
- c. Elongation at Break: 800%
- d. Tear resistance: 11 lbs/ft
- e. Hydrostatic resistance: 100 psi
- f. Puncture resistance: 30 lbs/ft
- g. Perm rating: .041perms

RB30 Properties

- a. Roll length: 508 sq ft or 762 sq ft
- b. Tensile Strength: 142 lbs
- c. Elongation at Break: 800%
- d. Tear Strength: 16 lbs/ft
- e. Hydrostatic resistance: 170 psi
- f. Puncture Resistance: 45 lbs/ft
- g. Perm rating: .031 perms

- C. Soprema Drainage and/or water retention layer (choose one of the following)

1. **Sopradrain Eco-Vent** – Drainage composite consisting of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric heat fused to one side.

Properties Core

- a. Compressive Strength: 30,000 psf
- b. Thickness: 0.45 in
- c. Flow rate: 9.2 gal/min/ft

Fabric Properties

- a. Flow: 120.0 gal/min/sf
- b. Puncture Strength: 70 lbs.
- c. Apparent Opening Size (AOS): 70 US sieve
- d. Grab Strength: 120.0 lbs.

2. **Sopradrain Eco-2** – Drainage composite consisting of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric heat fused to one side and bonded to the other. This second fabric eliminates the need for a protection fabric.

Properties Core

- a. Compressive Strength: 30,000 psf
- b. Thickness: 0.45 in
- c. Flow rate: 7.7 gal/min/ft

Fabric Properties (Black)

- a. Flow: 120.0 gal/min/sf
- b. Puncture Strength: 70 lbs.
- c. Apparent Opening Size (AOS): 70 US sieve
- d. Grab Strength: 120.0 lbs.

Fabric Properties (grey)

- a. Flow: 185.0 gal/min/sf
- b. Puncture Strength: 35.0 lbs
- c. Apparent Opening Size (AOS): .357 mm
- d. Grab Strength: 125.0 lbs.

3. **Sopradrain Eco-Vent WR** – This is a multi-function composite consisting of 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments and a specially formulated water retention fabric bonded to one side. The absorbent mat is designed to hold 10 to 12 times its units weight of water.

Drainage Core Properties

- a. Thickness: 0.60 in
- b. Flow rate: 6.9 gal/min/ft
- c. Compression Strength: 30,000 PSF

Water Retention Fabric Properties

- a. Weight: 20 oz/sq yd
- b. Puncture Strength: 70 lbs
- c. Grab Strength: 135.0 lbs

4. **Sopradrain Eco-2 WR** – This is a multi-function composite consisting of 40% post-industrial recycled polypropylene drainage core of fused, entangled filaments and a specially formulated water retention fabric bonded to one side and a protection fabric bonded to the other. The absorbent mat is designed to hold 10 to 12 times its units weight of water. The fabric eliminates the need for a separate protection layer.

Drain Core Properties

- a. Thickness: 0.60 in
- b. Flow rate: 6.9 gal/min/ft
- c. Compression Strength – 30,000 PSF

Water Retention Fabric Properties

- a. Weight: 20 oz/sq yd
- b. Puncture Strength: 70 lbs.
- c. Grab Strength: 135.0 lbs

5. **Soprema LT Aggredrain** – Is made of rotary-Kiln expandable clay aggregate or expandable shale. The Aggredrain closely emulates PH and drainage tendencies of natural soils and complies with the ASTM D-0330 and FLL standards.

Properties

- a. Specific gravity: 1.35
- b. Dry unit weight: 35-38 pcf
- c. Saturated surface weight: 46-48 pcf
- d. Absorption: 25-30%

D. Water Retention/Capillary Water Management System (choose one if necessary)

1. **Soprema Mositure Retention Mat** – Made from 100% recycled materials 35% polypropylene and 65% polyester. Contains no organic material and will not decompose. Designed to hold moisture in the garden roof assembly.

MRM14 (6'x150') Properties

- a. Water retention: .123 gal/sf
- b. Roll weight: 84 lbs
- c. Thickness: .087 in
- d. Bursting Strength: 261 lbs
- e. Puncture resistance: 101 lbs
- f. Elongation: Warp 122%; Fill 96%
- g. Breaking strength: Warp 186 lbs; Fill 219 lbs

MRM30 (6'x75') Properties

- a. Water retention: .201 gal/sf
- b. Roll weight: 110 lbs.
- c. Thickness: .397 in
- d. Bursting strength: 776 lbs
- e. Puncture resistance: 275 lbs
- f. Elongation: Warp: 153%; Fill 131%
- g. Breaking strength: 282 lbs; Fill 435 lbs

2. **Aquamatt Jardin** – a capillary mat specifically designed for green roof irrigation and water retention. It is a lamination of four materials that perform specific functions. The top surface root barrier prevents roof penetration and permits the passage of water into the growing medium through capillary absorption. The integrated system provides watering with lines spaced at 2'. The non-woven geotextile acts as a reservoir that retains and distributes moisture constantly and evenly throughout the entire area. The bottom layer is a watertight 6 mil black, UV treated polyethylene film, which forms a capillary break at every 10'.

Properties

- a. Roll dimensions: 11'x100' or 7'x100'
- b. Roll weight: 170 lbs. or 108 lbs
- c. Capillary rise: 5 inch
- d. Water Retention: 2.5 gal/sq yd
- e. Transmissivity: 4.14 in/min

D. Extruded Polystyrene Insulation (if necessary)

1. **Dow Styrofoam**
- a. Insulation shall meet ASTM C-578, Type VI or VII.
  - b. Minimum compressive strength, ASTM D-1621, 60 psi (variance by type of product). Provide 60 psi insulation under garden system.
  - c. Maximum water absorption by volume per ASTM C-272, 0.1%
  - d. Water vapor permeance for 1" product per ASTM E-96, 1.0 perm (max.) (63 ng/Pa/s/m<sup>2</sup>)

- e. Insulation shall have an R value of 5.0°F ft<sup>2</sup> h/Btu/in. (0.88 K m<sup>2</sup>/W) of thickness when tested at 75°F (23.9°C) mean temperature in accordance with ASTM C-518
- f. Product shall be free of CFC's

E. Filter Fabric

1. **Soprema Filter Fabric** – is a virgin non-recycled polypropelene, staple fiber, needle-punched and non-woven geotextile. Additionally, the fibers in the fabric are needled to filter fabric for a stable network that retains dimensional stability relative to one another. Soprema Filter Fabric offers resistance to UV degradation and to biological and chemical environments typically found in soil. System Filter is to be used as a separation between drainage layers and medias with green roof systems.

Fabric Properties

- a. Flow: 150 gal/min/sq ft.
- b. Tensile: 90 lbs.
- c. Elongation: 50%
- d. Mullen Burst: 185 psi
- e. Puncture Strenght: 55 lbs
- f. Trapezoidal Tear: 40 lb (130 N)
- g. Apparent Opening Size (AOS): 70 US Sieve#

E. Soil

1. **Soprema Soil Mixtures** - Custom growing media mix capable of supporting vigorous growth of the specified vegetation, complying with the following specification.
2. Extensive soil mix shall be used when soil depth is < 6” with plant varieties to be selected by Landscape architect
3. Semi-Intensive soil mix shall be used when soil depth is > 6” with plant varieties to be selected by landscape architect
4. Intensive soil mix shall be used in Shallow Intensive/Lawn Green Roof applications in which soil depth would typically be < 8”.

F. Wind Erosion Control Mat (if necessary)

1. **Soprema Wind Erosion System** – designed to control the erosion of a new green roof system until the planting have grown in enough to prevent erosion
  - a. Erosion blanket is made of naturally biodegradeable coconut coir material and will biodegrade in 1 to 2 years. The blankets are 120 ft x 6 ft.
  - b. Erosion blanket anchors are made of recycled polyethelene or biodegradeable cornstarch, which allows them to biodedegrade with the blanket.
  - c. Erosion control Disk is a 30 mil steel disk which holds the blanket in place

G. Sedum mats (if necessary)

1. **Soprema Vegetatative mats** – consist of different varieties of sedum grown into holding mat at a nursery then delivered to the jobsite and installed like sod giving a look of instant green. Please contact local Soprema representative for sedum species available.
  - a. Nylon entanglement vegetative mat is a textile base of lightweight fleece sewn to PA/PP entanglements bound of geotextile fabric filled with a planting substrate

- and pre-cultivated with an even layer of low-profile, drought-tolerant vegetation. Available in both lightweight and heavy duty matting
- b. Coconut Coir vegetative mat is a coconut fiber blanket with a layer of planting substrate and filled with a layer of low-profile, drought-tolerant vegetation. Rolls are 4 ft x 6 ft

H. Plugs and Cuttings (if necessary)

1. **Plugs and Sedum Cuttings** - shall be planted and maintained in accordance with Architects written specifications by an approved installer.
2. Cutting and plugs vary by region please contact your local area rep for specific blends that are available.

2.02 Accessories (choose all that apply)

- A. **Soprema Edge Restraints** – Designed to meet or exceed drainage capacity of all manufactured green roof drainage panels. Made from .100 thick Aluminum 5052 sheet (stainless steel also available). These edge restraints are available in either straight or flexible edging. The Flexible edging has a V-shaped notches cut into it to allow for shaping to arcs and circles.

Edges come with 12 slots per foot, effective slot mean diameter .375 in. area per slot .11 sq in. Factory Flow = .0119 CFS/5.4 GPM. This equates to 1.7 GPM per linear foot (assuming 1" head to match the drainage course)

Edge restraints come in a various sizes from 3.5" to 8.5" heights with the return leg varying by height of edge restraint. Standard color is Aluminum unfinished, color options are available please consult your local Soprema Representative.

Edge Restraints come with clips and bolts for attachment. Corner pieces are also available.

- C. **Soprema Inspection Chambers:** Designed to fit over most standard drains and to keep out large debris and contaminants; to promote positive drainage in the garden roof system. 304 BB 18 gauge stainless steel. They have a removable top for easy inspection of the drain after installation.

Slot dimensions are 3/16-inch x 3-15/16-inch, with a flow rate of 110 gallons per minute. They are available in 11"x11"x5/8" or 18"x18"x5/8"

- D. **Soprema Extensions for Edge Restraints and Inspection Chambers:** Extension pieces to be used when the garden roof area is higher than the standard heights. Made of the same materials as the edge restraints and inspection chambers.

- D. **Pavers:** Wausau Concrete Pavers, varies by design please contact your local Soprema representative for options.

- F. **Stone Ballast:** As shown on the plans, or if not indicated on the plans use well screened and washed stone gravel meeting ASTM D-448-80, gradations #57, 2, 4 or 5

## PART III EXECUTION

### 3.01 INSPECTION

- A. The Green Roof/Waterproofing Contractor shall examine all surfaces to receive the garden roof system to verify it is acceptable and proper for the installation of the garden roof.
- B. The Roof/Waterproofing Contractor shall not proceed with the installation of the garden roof system until all roof defects have been corrected. A water test may be required before placement of any overburden.

### 3.02 PREPARATION

- A. Substrate cleaning
  - 1. Thoroughly sweep the substrate which is to receive the extensive green roof system.

### 3.03 INSTALLATION

- A. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- B. Water Test
  - 1. All roof areas or portions thereof shall be water tested by means of flood testing water at a minimum depth of 2" for a period of 48 hours to check the integrity of the membrane installation.
  - 2. Verify that the structure can support the dead load weight of a water test before testing.
    - a. If leaks should occur the water must be drained completely and the membrane installation replaced and the roof system area dried out, seal membrane and retest.

### 3.03 EXTRUDED INSULATION INSTALLATION (if required)

- A. Insulation Placement
  - 1. Install one or more layers of rigid insulation to required thickness and/or R-value. Stagger all joints, cut and fit to within 3/4 inch (19 mm) of all projections, perimeter walls and penetrations. Insulation is to be loose laid and tightly butted with joints not greater than 3/8 inch (9.5 mm).

2. Multi-layer insulation applications require the bottom layer of insulation to be the thickest layer and shall be a minimum of 2" thick (50.8 mm). All layers shall be loose laid with the joints of the second layer staggered and offset from all joints of the preceding layer. Each successive layer shall be offset from the underlying layer(s).

Vertical insulation applications shall be spot adhered to the protection layer with appropriate adhesive or additional hot rubberized asphalt membrane.

### 3.04 GARDEN ROOF COMPONENTS INSTALLATION

#### A. Root Barrier Installation (RB20/RB30)

1. Unroll the specified root barrier over the entire surface, around all edges and upstands (vertical surfaces); overlapping all seams a minimum 4" (four inches). Seal all side and end laps with specified adhesive in a continuous and unbroken  $\frac{3}{4}$ " (three-quarter inch) ribbon strip.
2. Install Drainage layer RB20 or RB30 below the drainage layer always.

#### B. Air layer/Drainage / Water Retention Installation (Eco-Vent, Eco-2, Eco-vent WR or Eco-2 WR)

1. Install the specified drainage / water retention course over waterproofing or insulation layers with the black filter fabric or water retention mat facing up (product dependent).
2. Properly position drainage course, carefully cutting and fitting panels to fit the surface. Typically drainage mats will be run over the full length of the roofing system and turned up walls to provide protection for flashing sheets. Cut and snugly fit the drainage course at all perimeters, curbs and penetrations, following the membrane manufacturer's installation procedures. Cut holes to expose all drain areas
3. Drainage mat must be positioned so the 3" overlap, laps over the next sheet. It is recommend to adhere this overlap with adhesive to hold it in place for the install of the soil. This can be accomplished with a one part urethane adhesive or a butyl tape.
4. Drainage mats should be covered with soil as soon as possible to avoid any deterioration to the filter fabric or retention mats.

#### C. Root Barrier Installation (Micro-fab)

1. Unroll the specified root barrier over the entire surface, around all edges and upstands (vertical surfaces); overlapping all seams a minimum 4" (four inches). Seal all side and end laps with specified adhesive in a continuous and unbroken  $\frac{3}{4}$ " (three-quarter inch) ribbon strip.
2. Micro-fab root barrier can be installed above the Drainage layer.

#### D. Edge Restraints and Extensions

1. Installed on top of Drainage, water retention or root barrier course, so the perforated edge is vertical with a horizontal leg positioned in area that is to receive the soil and vegetation.
2. Metal edge restraints shall be fastened together using clips and corner pieces. These will be secured with bolts and washers.
3. Edge restraints may need to be cut to size depending on design.
4. Extension pieces are secured using bolts and washers and will need to have holes drilled on site hold the two pieces in place

#### E. Inspection Chambers and Extensions



1. Inspection chambers are fit over existing drains
  2. Extensions can be used to extend the Inspection Chamber up to the soil level, these are secured with bolts and washers and must have holes drilled on site for securement.
- F. Water Retention layer (Soprema Mositure Retention Mat, if necessary)
1. Loose laid in areas to receive soil, above the drainage or root barrier layer.
- G. Aggregate Drainage System (Aggredrain LT, if chosen instead of drain mat)
1. Installation of Aggredrain LT will be installed to the desired depth called out in the specification. Aggredrain LT must be covered with filter fabric if installed in planting areas.
  2. Bags are opened and spread over air layer to specified height
- H. Capillary Water Management system (Aquamats Jardin, if necessary)
1. Please call manufacture for written installation instruction for this capillary water management system.
- I. Filter Fabric
1. Filter Fabric shall be laid over the drainage layer, lapping adjacent rolls a minimum of 6 inches (150 mm). Enough material shall be left to be drawn up above the anticipated soil level. Any excess shall be trimmed down to the level of the soil..
- J. Garden roof soil (extensive, semi-intensive and intensive)
1. Soil shall be placed carefully to avoid damage or displacement of other materials such as walls, paving, drainage components, filter fabric, and roofing membrane.
  2. Garden roof soil shall be placed to within 1 inch greater than final grade or to a depth of no greater than 4 inches and compacted as described in below. For final grades less than 4 inches only one round of compaction shall be performed and remaining soil loosely placed such that top of soil exceeds final grade by 1 inch (see 3.08.D. below). For final grades greater than 4 inches, place soil at no greater than 4 inches and repeat procedure until soil has been compacted within 1 inch of final grade.
  3. Compaction shall be performed with a 75 lb. landscape roller to achieve a 50 – 60 % compaction as determined by ASTM D1557.
  4. After compaction remaining soil shall be placed at 1 inch greater than final grade and thoroughly watered or jetted over entire area. Low settled areas shall be filled with additional soil and re-wet to achieve uniform prescribed final grade.
- K. Stone ballast or pavers
1. Installed at all roof perimeters, building walls, penetrations, and access hatches and as required for flashing vegetation barriers, proper wind design, fire breaks, and as walkway/maintenance paths.
  2. Ballast design shall be in accordance with Dow Chemical Company TechNote 508 Ballast Design Guide for IRMA Roofs, and other applicable codes or wind design guides.
- L. Wind Erosion System (if necessary)

1. Once soil is installed bury anchors bottom of the anchors 3' OC in the field and 2' OC near the edges.
2. Install Bio-degradable mat, so that it is secured through the shaft of the anchor pieces
3. Once mat is completely installed, place metal disc over the anchors to secure the mat in place

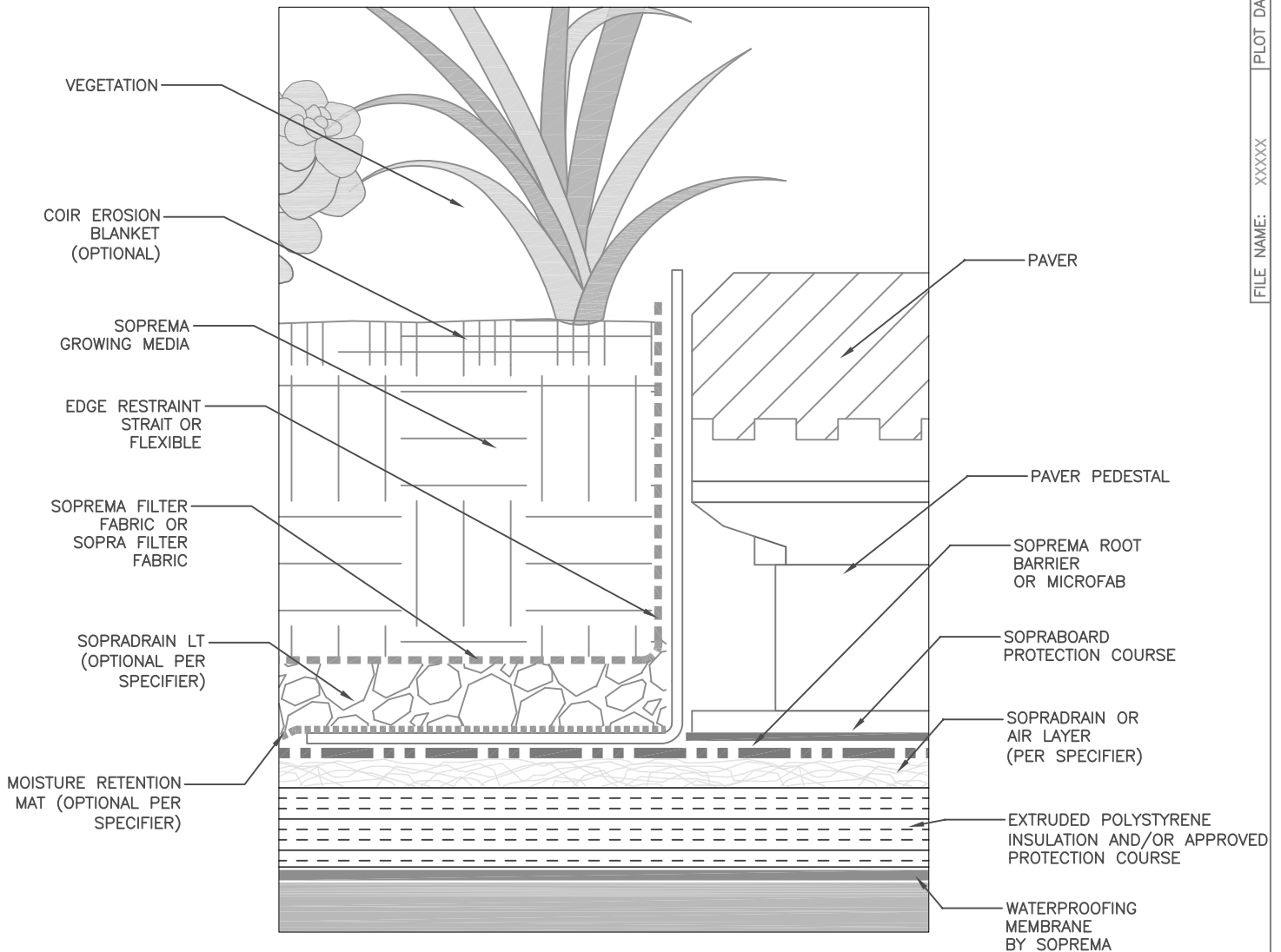
M. VEGETATION INSTALLATION

1. Install the vegetation by Vegetate Mat, Plugs or Cuttings in accordance with design drawings.
2. Sowing seed for grass or meadow flower plantings must be done so as to achieve the maximum uniformity possible over the entire surface of the medium at the density specified by the seed provider. Once sown, the surface of the medium is gently raked (as with the backside of a leaf rake) to lightly bury the seed; the surface is then gently rolled with a garden roller.
3. Rolls of sod or vegetative mat are laid out in a staggered pattern, snugly butted side-to-side and end-to-end; do not stretch the rolls. The surface is then gently rolled with a garden roller.
4. In all instances, all plantings must be thoroughly watered to the point of saturation immediately after planting.

3.05 CLEANING


- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from extensive green roof installation operation.
- B. Repair or replace garden roof system that is vandalized until final acceptance is granted.

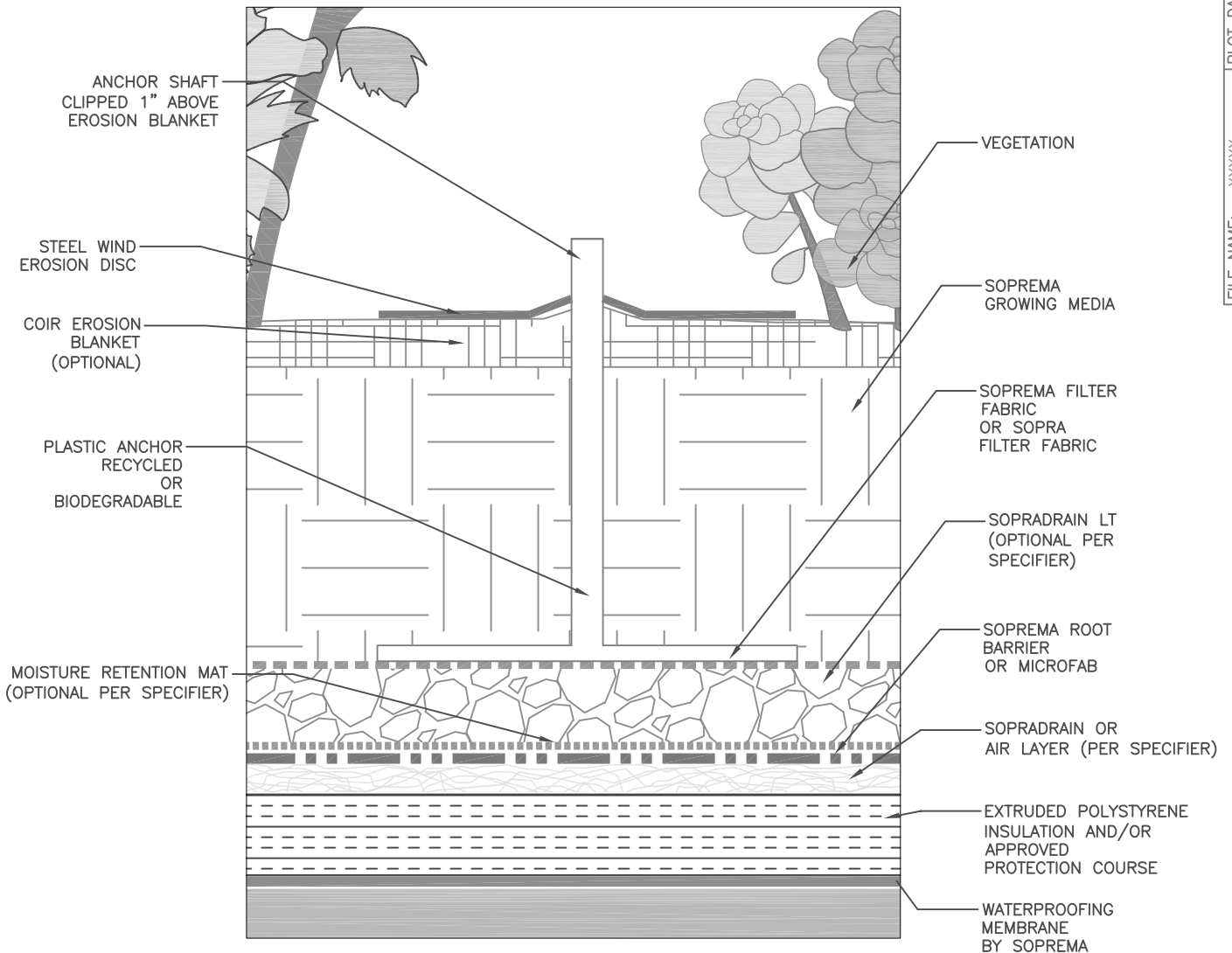
**END OF SECTION**



#### NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER..
2. FOR SINGLE SOURCE WARRANTY THE PAVER SYSTEM MUST BE APPROVED BY SOPREMA
3. A MINIMUM OF 12"-18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
4. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
5. ROOT BARRIER LOCATION MAY VARY.
6. EXTRUDED POLYSTYRENE INSULATION MAY BE USED IN LIEU OF A PROTECTION COURSE UNDER THE PAVER ASSEMBLY.
7. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

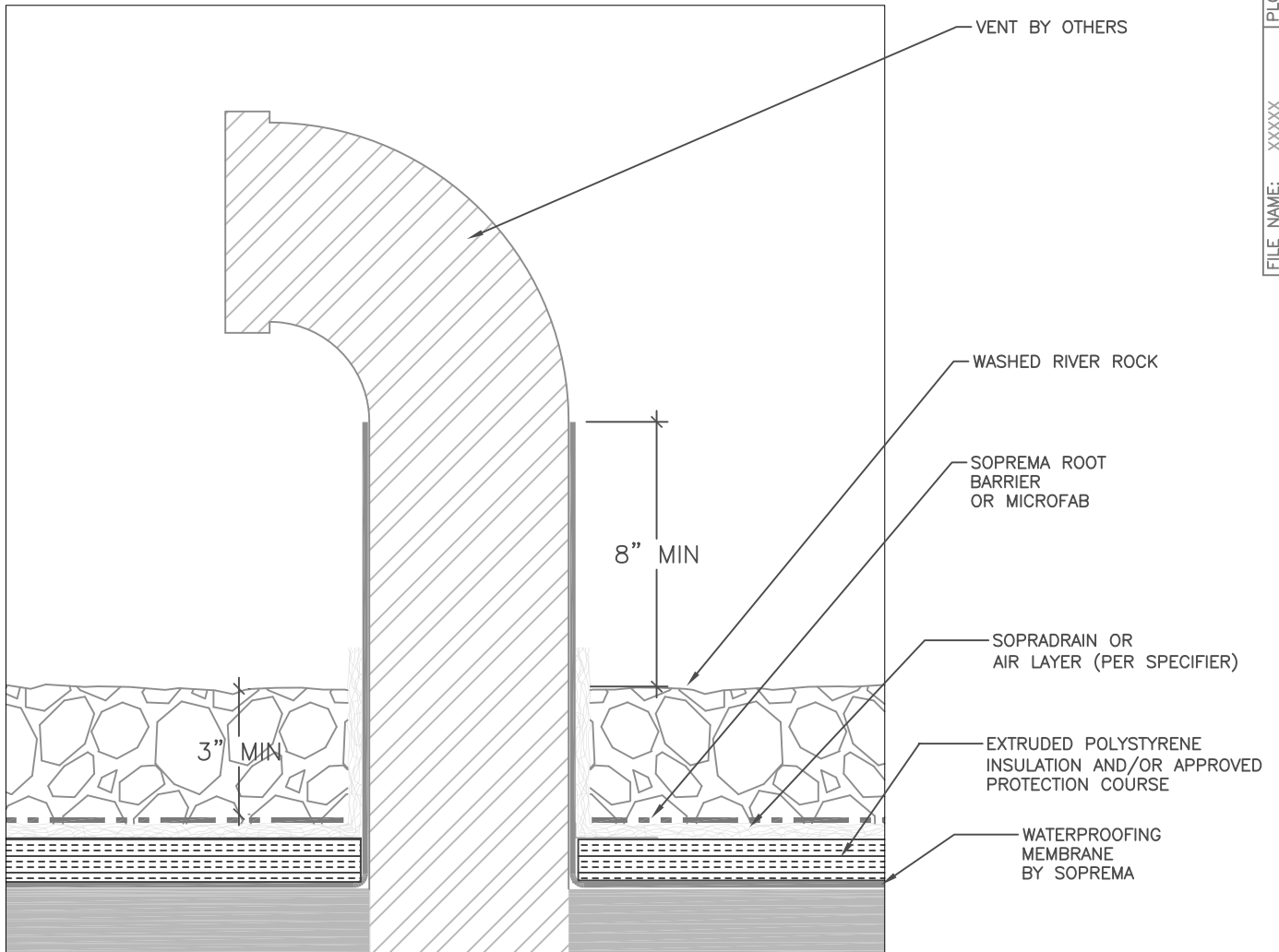
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|--|-----|--|---------------|
|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|  |     |  |               |
| TITLE  |     |  |               |
| TYPICAL EDGE RESTRAINT DETAIL AT PAVERS  |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| 6"=1'  | BB  | TM   | 07/22/2011    |
| DRAWING NUMBER   |     |  | REV           |
| SNA-G-01   |     |  |               |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER..
2. A MINIMUM OF 12"-18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
3. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
4. ROOT BARRIER LOCATION MAY VARY.
5. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

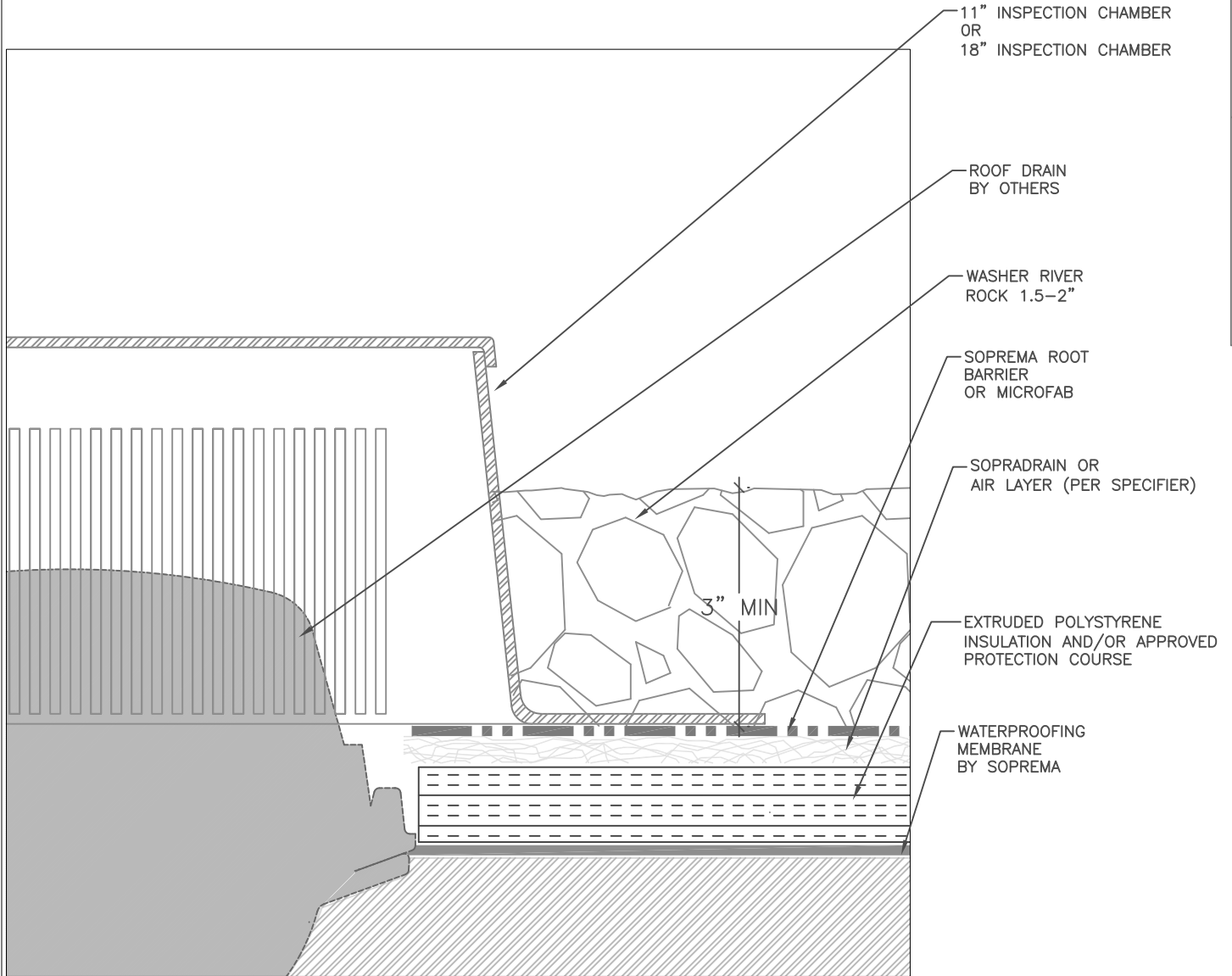
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|  |     | 310 QUADRAL DRIVE     |               |
|  |     | WADSWORTH, OHIO 44281 |               |
|  |     | (330) 334-0066        |               |
| TITLE  |     |                       |               |
| WIND EROSION ANCHOR  |     |                       |               |
| SCALE  | DWN | CHK                   | APPROVAL DATE |
| 6"=1'  | BB  | TM                    | 07/22/2011    |
| DRAWING NUMBER   |     |                       | REV           |
| SNA-G-02   |     |                       |               |



**NOTES:**

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER..
2. A MINIMUM OF 12"–18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
3. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
4. ROOT BARRIER LOCATION MAY VARY.
5. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

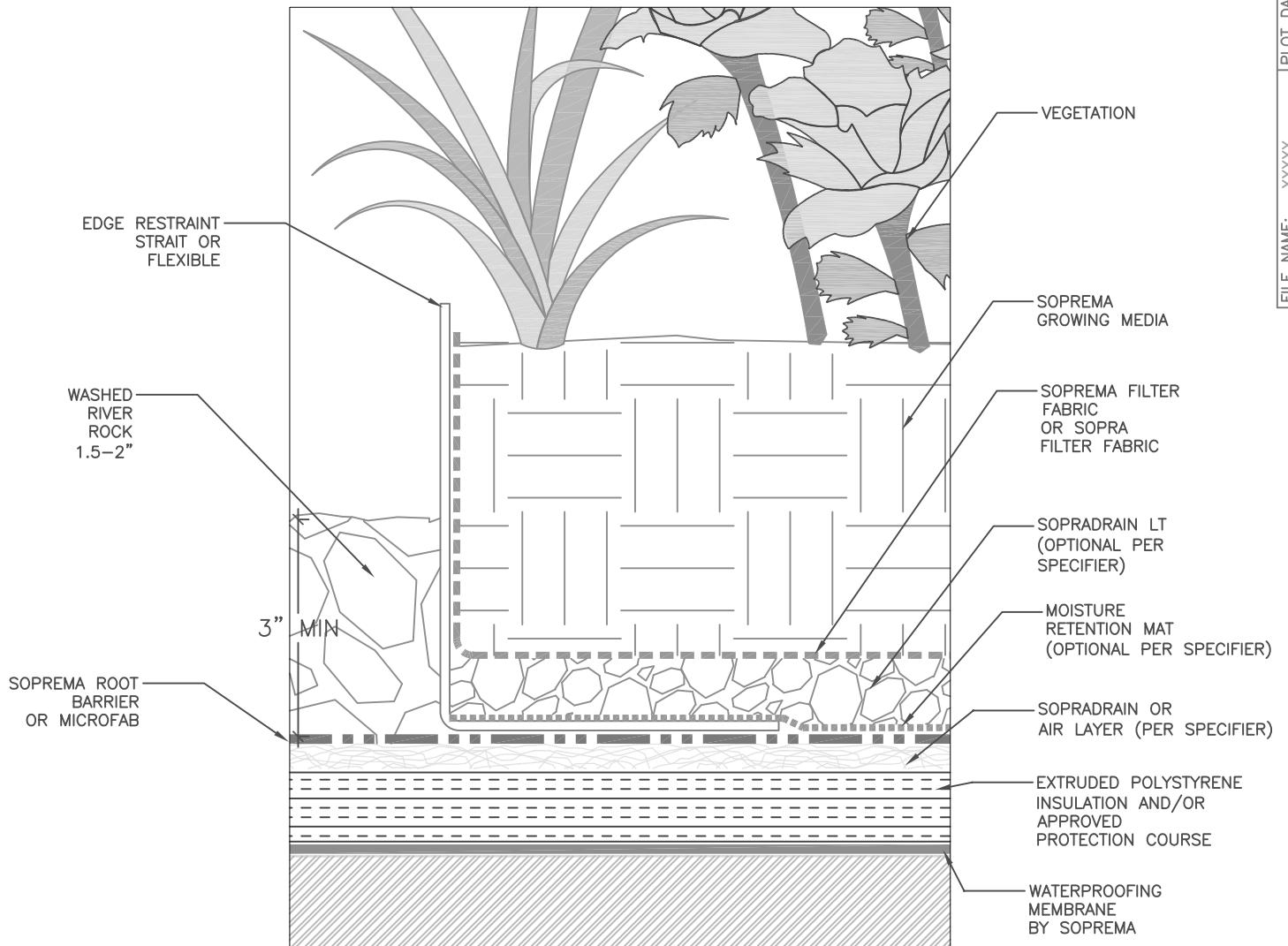
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|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|  |     |  |               |
| TITLE  |     |  |               |
| TYPICAL VENT PENETRATION DETAIL  |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| 3"=1'  | BB  | TM   | 07/22/2011    |
| DRAWING NUMBER   |     |  | REV           |
| SNA-G-03   |     |  |               |



NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER.
2. A MINIMUM OF 12"–18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
3. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
4. ROOT BARRIER LOCATION MAY VARY.
5. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

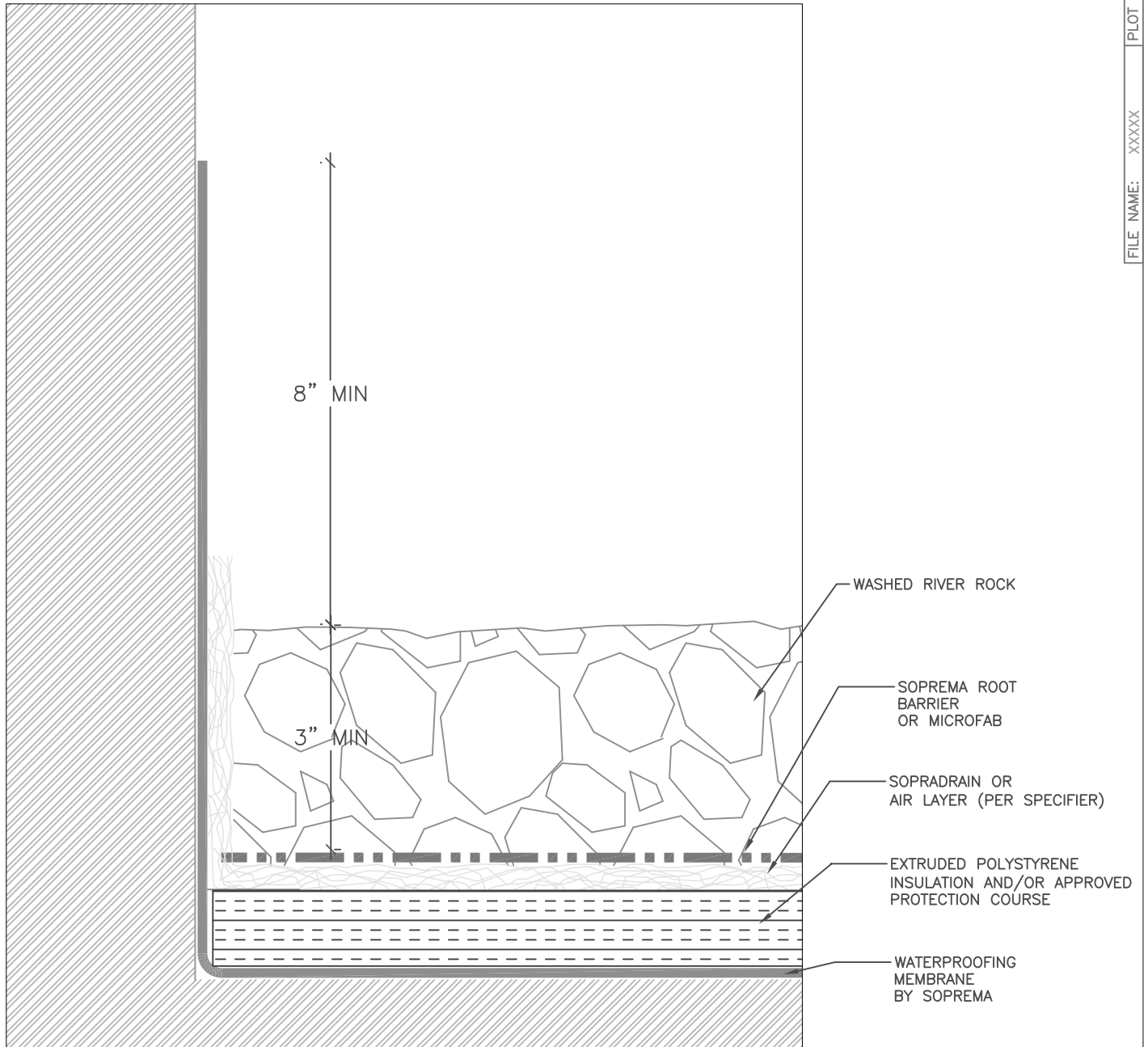
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|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|  |     |  |               |
| TITLE  |     |  |               |
| TYPICAL DRAIN INSPECTION CHAMBER   |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| 6"=1'  | BB  | TM   | 07/22/2011    |
| DRAWING NUMBER   |     |  | REV           |
| SNA-G-04   |     |  |               |



#### NOTES:


1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER.
2. A MINIMUM OF 12"-18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
3. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
4. ROOT BARRIER LOCATION MAY VARY.
5. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

|  |        |  |                          |
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|  |        | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |                          |
|  |        |  |                          |
| TITLE TYPICAL EDGE RESTRAINT DETAIL - BALLAST  |        |  |                          |
| SCALE 6"=1'  | DWN BB | CHK TM   | APPROVAL DATE 07/22/2011 |
| DRAWING NUMBER SNA-G-05  |        |  | REV                      |



NOTES:

1. DETAIL TO BE USED IN CONJUNCTION WITH SOPREMA/ NRCA GENERAL REQUIREMENTS AND APPROVED DETAILS AND PER SPECIFIER..
2. A MINIMUM OF 12"–18" VEGETATION FREE ZONE AROUND ALL PENETRATIONS, DRAINS AND PERIMETER WALLS IS REQUIRED.
3. THE USE OF A MOISTURE RETENTION MAT MAY BE OPTIONAL DEPENDING ON THE SELECTED DRAINAGE OPTION.
4. ROOT BARRIER LOCATION MAY VARY.
5. OPTIONAL DRAINAGE LAYER UNDER THE EXTRUDED POLYSTYRENE INSULATION NOT SHOWN FOR CLARITY (PER SPECIFIER).

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|--|-----|--|---------------|
|  |     | 310 QUADRAL DRIVE<br>WADSWORTH, OHIO 44281<br>(330) 334-0066 |               |
|  |     |  |               |
| TITLE  |     |  |               |
| TYPICAL PERIMETER WALL DETAIL  |     |  |               |
| SCALE  | DWN | CHK  | APPROVAL DATE |
| 6"=1'  | BB  | TM   | 07/22/2011    |
| DRAWING NUMBER   |     |  | REV           |
| SNA-G-06   |     |  |               |







# SOPREMA VEGETATIVE MAT CFB

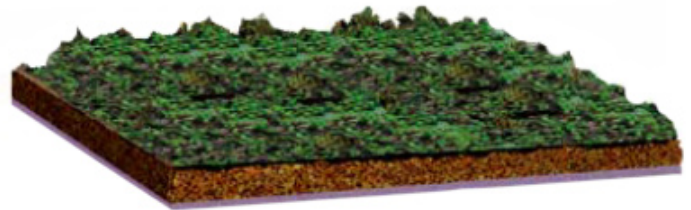
VEGETATIVE MAT CFB

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Vegetative Mat is a textile based vegetative mat of light weight fleece sewn to PA/PP entanglements bound to coconut fiber blanket, filled with a planting substrate, and pre-cultivated with an even layer of low-profile, drought-tolerant vegetation.

The Soprema Vegetative mat CFB is intended for use with mild sloping applications.



| PHYSICAL PROPERTIES |                           |
|---------------------|---------------------------|
| PROPERTIES          | Vegetative Mat            |
| Mat Type            | Coconut Fiber Mat         |
| Size                | 4-feet wide x 6-feet long |

| SEDUM SPECIES |   |
|---------------|---|
| USDA ZONE     | SPECIES   |
| 4-8           | Sedum Album Coral Carpet - On Every Mat                   |
| 4-9           | Sedum Acre Gold Moss - On Every Mat                       |
| 3-8           | Sedum Sexangulare - On Every Mat                          |
| 4-9           | Sedum Reflexum Blue Spruce - On Every Mat                 |
| 3-9           | Sedum x Immergrunchen - On Selected Mats                  |
| 3-9           | Sedum Floriferum Weihestephaner Gold - On Selected Mats   |
| 4-9           | Sedum Kamtschaticum - On Selected Mats                    |
| 6-9           | Sedum Rupestre Angelina - On Every Mat                    |
| 4-9           | Sedum Spurium Tricolor - On Selected Mats                 |
| 3-8           | Sedum Spurium John Creech - On Every Mat*                 |
| 5-9           | Sedum Hispanicum Purple Form - On Selected Mats           |
| 5-9           | Sedum Divergens - On Selected Mats                        |
| 3-9           | Sedum Spurium Red Carpet and/or Fludaglut - On Every Mat* |

\*Light Shade Tolerant

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA INSPECTION CHAMBER

INSPECTION CHAMBER (11" x 11" x 4.75")

Order No. \*

INSPECTION CHAMBER (18" x 18" x 4.75")

Order No. \*

## DESCRIPTION & APPLICATION

The Soprema Inspection Chamber is designed to fit over most standard roof drains. It is designed to keep away large debris and contaminants and to promote proper drainage through the entire green roof system profile.

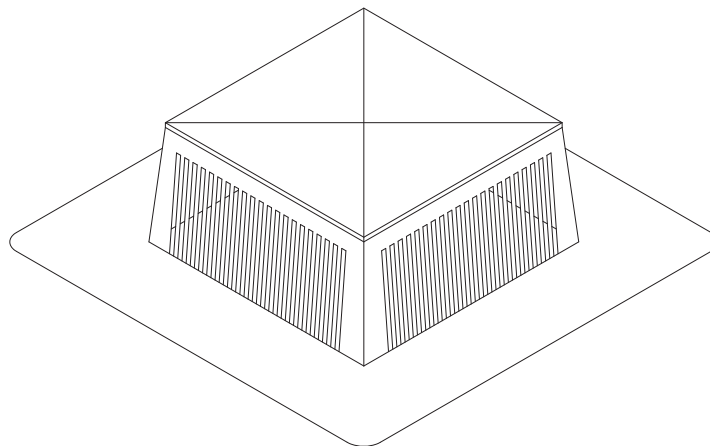
The Soprema Inspection chamber is available in two (2) sizes in order to accommodate larger drains or alternative drain fields. For green roof assemblies requiring a deeper inspection chamber, extensions are available.

Custom chambers are available for overflow and intensive roof installations.

\*Can be installed with ballast or unballasted surround.

**Materials** - 304 BB 18 gauge stainless steel

**Slot Dimensions** - 3/16-inch (width) x 3-15/16" (height)



| Dimensions                    |        |                  |                                      |                    |           |             |           |                    |  |
|-------------------------------|--------|------------------|--------------------------------------|--------------------|-----------|-------------|-----------|--------------------|--|
| Components                    |        | Lid Size         |                                      | Chamber Size       |           | Flange Size |           | Extensions         |  |
| Standard Chamber              |        | 11" x 11" x 5/8" |                                      | 11" x 11" x 4 3/4" |           | 17" x 17"   |           | 1", 3", and 8 1/2" |  |
| Large Chamber                 |        | 18" x 18" x 5/8" |                                      | 18" x 18" x 4 3/4" |           | 27" x 27"   |           | 1", 3", and 8 1/2" |  |
| Inspection Chamber Flow Rates |        |                  |                                      |                    |           |             |           |                    |  |
| Chamber Volume                |        |                  | Time for Inspection Chamber to Empty |                    |           |             | Flow Rate |                    |  |
| Ft³                           | Gallon | Trial 1, Sec.    | Trial 2, Sec.                        | Trial 3, Sec.      | Avg., Sec | Ft³/Min     |           | Gal./Min           |  |
| 0.93                          | 7.04   | 4.68             | 3.6                                  | 3.24               | 3.84      | 14.68       |           | 110                |  |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



## SOPREMA INSPECTION CHAMBER EXTENSION

### DESCRIPTION & INSTALLATION

The Soprema Inspection Chamber Extensions are designed and manufactured in 20 gauge stainless steel in the same square dimensions of the chamber box but with heights of 1", 3" and 8.5" to accommodate variable heights due to sloped roofing or tapered insulation beneath the roof membrane. This allows the green roof designer more flexibility with plantings around the green roof drain plumbing.

A combination of extensions can be used to closely approximate the media depth and still provide facility managers necessary access to drains for periodic maintenance.

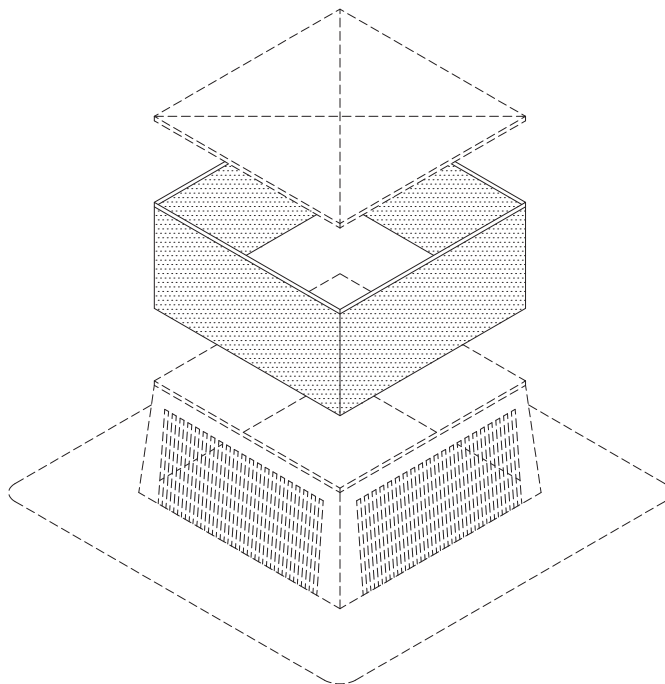
#### INSTALLATION:

Inspection chambers are placed over drains before media or drainage. Typically, they are placed when edge retention is installed. The flange of the drain chamber can be taped in place, if conditions demand.

Option 1: The area around the drain is then either boxed out with edge retention in a plant free perimeter ready to be filled with ballast stone.

Option 2: The drain panels can be cut to the sides of the box of the chamber, lying on the chamber flange. In this case, the drain panel would overlap the flange edge of the chamber. Then system filter is placed up the sides of the chamber box and overlapped into the box, to be held in place by the chamber cover during media placement.

The media can be held back with plywood during construction, if the estimator has left out the extensions. Extensions can be placed later, during planting. Covers for both Inspection Chambers, the 11" and the larger 18" model, will fit over their respective extensions.



| Dimensions       |                  |                    |             |                    |
|------------------|------------------|--------------------|-------------|--------------------|
| Components       | Lid Size         | Chamber Size       | Flange Size | Extensions         |
| Standard Chamber | 11" x 11" x 5/8" | 11" x 11" x 4 3/4" | 17" x 17"   | 1", 3", and 8 1/2" |
| Large Chamber    | 18" x 18" x 5/8" | 18" x 18" x 4 3/4" | 27" x 27"   | 1", 3", and 8 1/2" |

### WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA VEGETATIVE MAT

VEGETATIVE MAT

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Vegetative Mat is a textile based vegetative mat of light weight fleece sewn to PA/PP entanglements bound to geotextile fabric, filled with a planting substrate, and pre-cultivated with an even layer of low-profile, drought-tolerant vegetation.

The Soprema Vegetative mat is available in light and heavier matting. The selection of the heavier matting will depend on the system design and regional availability.



| PHYSICAL PROPERTIES |   |
|---------------------|---|
| PROPERTIES          | Vegetative Mat  |
| Light-Duty Mat      | ± 4.5 lb/ft <sup>2</sup> Saturated (without Drainage Substrate and Media) |
| Heavy-Duty Mat      | ± 7.0 lb/ft <sup>2</sup> Saturated (without Drainage Substrate and Media) |

| SEDUM SPECIES |   |
|---------------|---|
| USDA ZONE     | SPECIES   |
| 4-8           | Sedum Album Coral Carpet - On Every Mat                   |
| 4-9           | Sedum Acre Gold Moss - On Every Mat                       |
| 3-8           | Sedum Sexangulare - On Every Mat                          |
| 4-9           | Sedum Reflexum Blue Spruce - On Every Mat                 |
| 3-9           | Sedum x Immergrunchen - On Selected Mats                  |
| 3-9           | Sedum Floriferum Weihenstephaner Gold - On Selected Mats  |
| 4-9           | Sedum Kamtschaticum - On Selected Mats                    |
| 3-9           | Sedum Spurium Red Carpet and/or Fludaglut - On Every Mat* |
|               | *Light Shade Tolerant                                     |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# SOPREMA WIND EROSION SYSTEM

EROSION BLANKET

Order No. \*

EROSION BLANKET ANCHORS

Order No. \*

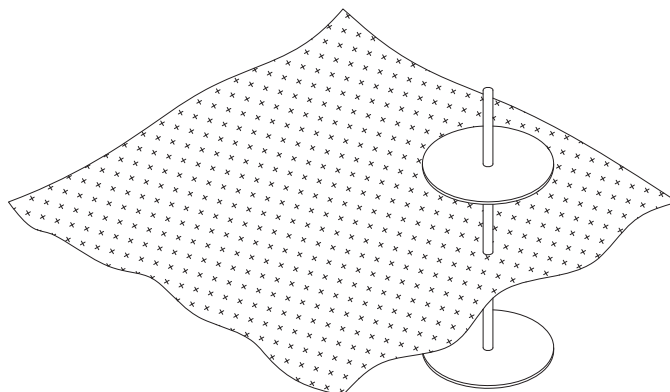
## DESCRIPTION & APPLICATION

The Soprema Wind Erosion System is designed to control the erosion of a new green roof system until the plantings have grown enough to prevent erosion.

The erosion blanket is made of a naturally biodegradable coconut coir material and will biodegrade in 1 to 2 years, which is enough time for the plant material to establish itself.

The erosion blanket anchor are made of recycled polyethylene or biodegradable cornstarch allowing the anchor to be biodegrade with the blanket. The anchor accepts the included 30-mil steel disk which holds the blanket in place.

Anchors are installed at 3-feet on center increments throughout the field of the installation and 2-feet on center at the edges and corners of the installation.



| Descriptions      |                           |                     |           |        |
|-------------------|---------------------------|---------------------|-----------|--------|
| Components        | Material                  | Thickness           | Length    | Width  |
| Erosion Blanket   | Coconut Coir              | 10-inch (As a Roll) | 120-feet  | 6-feet |
| Metal Disk        | Steel                     | 30-mil              | 5-inch    | 5-inch |
| Anchor - Base     | Recycled Polyethelyene    | 1/4-inch            | 5-inch    | 5-inch |
| Anchor - Shaft    | Recycled Polyethelyene    | 3/8-inch Diameter   | 12-inches | -      |
| BioAnchor - Base  | Biodegradable Corn Starch | 1/4-inch            | 5-inch    | 5-inch |
| BioAnchor - Shaft | Biodegradable Corn Starch | 1/4-inch Diameter   | 12-inches | -      |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA AGGREDRAIN

AGGREDRAIN

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Aggredrain is made of rotary-kiln expandable clay aggregate and/or expandable shale. The Aggredrain closely emulates PH and drainage tendencies of natural soils and complies with ASTM D-0330 and FLL standards.

**Installation:**

The Soprema Aggredrain should be distributed at a one (1) inch minimum depth over a Soprema supplied protection fabric and covered by a separation fabric.



| Uniformity of Grading (% Passage) |                    |
|-----------------------------------|--------------------|
| Sieve Size                        | Average            |
| 1/2"                              | 92%                |
| 3/8"                              | 60%                |
| #4                                | 14%                |
| #8                                | 4%                 |
| Tested Properties                 |                    |
| Properties                        | Soprema Aggredrain |
| Specific Gravity (SSD)            | 1.35               |
| Dry Unit Weight                   | 35-38 pcf          |
| Saturated Surface Dry Weight      | 46-48 pcf          |
| Absorption                        | 25-30%             |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA FILTER FABRIC

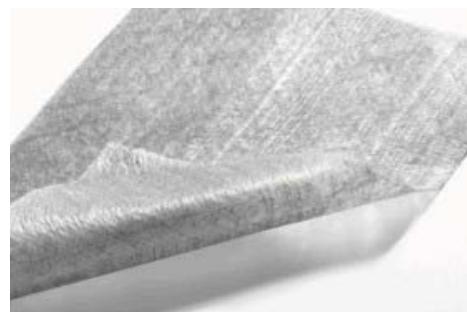
FILTER FABRIC

Order No. \*

## DESCRIPTION & APPLICATION

The Soprema Filter Fabric is designed to separate the growing medium from the drainage system used in vegetative green roof assemblies.

Soprema Filter Fabric is a virgin non-recycled polypropylene, staple fiber, needle-punched and non-woven geotextile. Additionally, the fibers in the fabric are 'needled' to filter fabric for a stable network that retains dimensional stability relative to one another. The Soprema Filter Fabric offers resistance to UV degradation and to biological and chemical environments typically found in soil.



### AVAILABLE SIZES

| Roll Size    | Coverage     | Roll Weight |
|--------------|--------------|-------------|
| 6' x 200'    | 1200 Sq. Ft. | 35          |
| 6.25' x 360' | 2250 Sq. Ft. | 60          |
| 12.5' x 360  | 4500 Sq. Ft. | 120         |

### PROPERTIES

| Property                               | Soprema Filter Fabric | Test Method |
|--|-----------------------|-------------|
| Grab Tensile Strength (lbs)            | 90                    | ASTM D-4623 |
| Elongation @ Break (%)                 | 50                    | ASTM D-4623 |
| Trapezoid Tear Resistance (lbs)        | 40                    | ASTM D-4533 |
| Puncture Resistance (lbs)              | 55                    | ASTM D-4833 |
| Mullen Burst (psi)                     | 185                   | ASTM D-3786 |
| UV Stability (% at 500 hrs)            | 70                    | ASTM D-4355 |
| Permittivity (seconds)                 | 1.5                   | ASTM D-4491 |
| Water Flow Rate (gpm/ft <sup>2</sup> ) | 150                   | ASTM D-4491 |
| Permeability (cm/sec)                  | 0.20                  | ASTM D-4491 |
| A.O.S. (US Sieve #)                    | 70 US                 | ASTM D-4751 |
| A.O.S. (mm)                            | 0.212                 | ASTM D-4751 |
| Weight (lbs/ft <sup>2</sup> )          | 0.024                 | ASTM D-5261 |
| Thickness (inches)                     | 0.050                 | ASTM D-5199 |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA MOISTURE RETENTION MAT

MOISTURE RETENTION MAT

Order No. \*

## DESCRIPTION & APPLICATION

The Soprema Moisture Retention Mat is designed to hold moisture above your waterproofing and root barrier layers and to assist in protecting your waterproofing membrane system. The high retentive qualities of this fabric provides a slow, evaporative release of moisture for green roof plants from deep in the green roof system.

Soprema Filter Fabric is manufactured from 100% recycled materials (35% polypropylene and 65% polyester). Soprema Moisture Retention Matting contains no organic materials and will not decompose. It is available in 3/16-inch or 3/8-inch thicknesses (for maximum moisture retention in precipitation zones of 20-inches or less).



### AVAILABLE SIZES

| Thickness | Roll Size | Coverage    | Roll Weight |
|-----------|-----------|-------------|-------------|
| 3/16"     | 6' x 150' | 900 Sq. Ft. | 84 lbs      |
| 3/8"      | 6' x 75'  | 450 Sq. Ft. | 110 lbs     |

### PROPERTIES

| Property                             | 3/16-inch | 3/8-inch  | Test Method |
|--------------------------------------|-----------|-----------|-------------|
| Thickness (inches)                   | .187      | .396      | ASTM D-5199 |
| Weight (g/m <sup>2</sup> )           | 325.8     | 960.2     | ASTM D-5261 |
| Breaking Strength, lbs (Warp x Fill) | 186 x 219 | 282 x 435 | ASTM D-4623 |
| Elongation, % (Warp x Fill)          | 122 x 96  | 153 x 131 | ASTM D-4623 |
| Bursting Strength (lbs)              | 261       | 776       | ASTM D-3786 |
| Puncture Resistance (lbs)            | 101       | 275       | ASTM D-4833 |
| Water Retention (gallons/sq. ft.)    | .123      | .201      | -           |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# SOPREMA ROOT BARRIER

ROOT BARRIER

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Root Barrier is a high tear and puncture resistant virgin-blended linear polyethylene sheet that is designed to protect the waterproofing/roofing assembly from vegetative system's root growth.

The Soprema Root Barrier is coated in Carbon Black to offer a degree of UV protection. The Soprema Root Barrier is flexible enough to conform to a variety of surfaces without tearing or stretching. Double-sided and single-sided butyl tape is available to create a waterproofing seal.



### AVAILABLE SIZES

|                       |                           |
|-----------------------|---------------------------|
| Root Barrier - 20-mil | 508 Sq. Ft. & 762 Sq. Ft. |
| Root Barrier - 30-mil | 508 Sq. Ft. & 762 Sq. Ft. |

### PROPERTIES

| Soprema Root Barrier           | 20-Mil | 30-Mil | Test Method |
|--------------------------------|--------|--------|-------------|
| Tensile Strength @ Break (lbs) | 75     | 142    | ASTM D-6693 |
| Elongation @ Break (%)         | 800    | 800    | ASTM D-6693 |
| Tear Resistance (lbf)          | 11     | 16     | ASTM D-1004 |
| Hydrostatic Resistance (psi)   | 100    | 170    | ASTM D-751  |
| Puncture Resistance (lbf)      | 30     | 45     | ASTM D-4833 |
| Volatile Loss (%)              | <1     | <1     | ASTM D-1203 |
| Dimensional Stability (%)      | <2     | <2     | ASTM D-1204 |
| Perm Rating (US Perms)         | .041   | .031   | ASTM E-96   |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA EDGE RESTRAINT

EDGE RESTRAINT (4.5" x 4.5" x 96")

Order No. E115

## DESCRIPTION & APPLICATION

Soprema Edge Restraint is manufactured specifically for Green Roof construction.

All components are slotted to meet or exceed drainage capacity of all manufactured green roof drainage panels manufactured. Our slot design promotes efficient storm water flow during heavy rainfall.

**Slot Specifications:** 12 slots per foot, effective slot mean diameter .375 in, area per slot .11 sq in. Factory flow = 0.0119 CFS/ 5.4 GPM. The design flow is equal to 1.7 GPM per lineal foot (assuming 1" head to match standard or typical drainage course at full volume).

**Available Dimension -** The Soprema Edge Restraint is manufactured with a 4.5-inch verticle slotted edge and a 4.5-inch horizontal support base. It is manufactured at a standard 90° edge angle and is available in 96-inch lengths.

**Materials -** Aluminum, unfinished, .100 thickness 5052 sheet

Corners and connection materials are manufactured in materials matching the required edge restraint. Corners, clips and connections bolts are included.

Available as straight or flexible edging. Flexible edging has V-shaped notches cut into it to allow for shaping to arcs or circles.

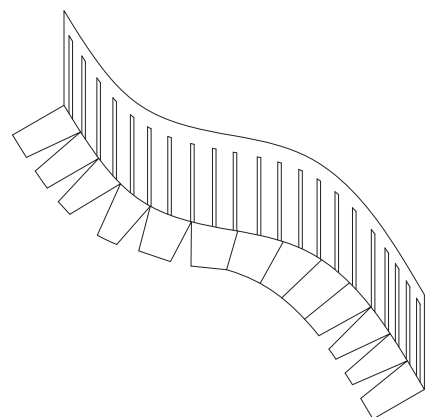
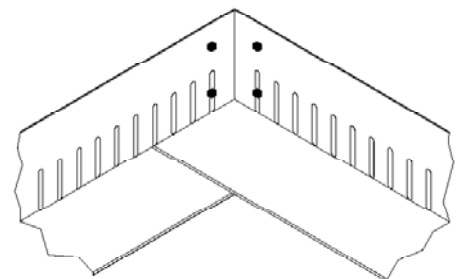
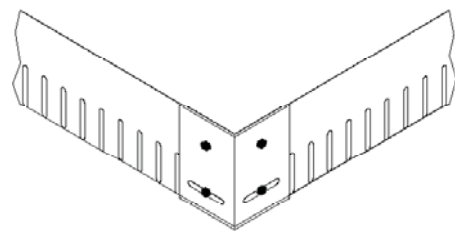
**Colors -** Aluminum edge is offered in powder coating or is anodized to match building trim and flashing. Please consult your local sales representative for availability, details and pricing.

**Installation Instructions:** Edge Restraint is placed on perimeter of planted area and secured with connection accessories. Adhesive approved by roofing membrane manufacturer can be used to secure unconnected lengths or during install on sloped green roof implementations. Roof deck attachments should be flashed in with approved roof membrane flashing by an approved roofing contractor. (Edge restraint and be ordered with perforations for roof decking attachments to eliminate warping of the restraint under pressure) Green Roof edge restraint can be used as paving edging to border unplanted areas providing a clean containment area for vegetation.

See published Specifications and Approved Details.

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.







# SOPREMA ADHESIVE TAPES

Soprema VaporBond Tape

Soprema Butyl Seal Tape

Order No. \*

Order No. \*

## DESCRIPTION & APPLICATION

### Soprema VaporBond Tape:

The Soprema VaporBond Tape is a white, single-sided tape that combines a heavy-duty, weather-resistant polyethylene backing with an aggressive rubber adhesive. The Soprema VaporBond Tape offers excellent seaming capabilities as well as an 'easy tear' feature designed to reduce installation time. Typical applications for this product include vapor retarders, covers and liners.



### Butyl Seal Tape:

The Soprema Butyl Seal tape is a double-sided reinforced aggressive black butyl rubber tape used to join panels of polyethylene and polypropylene together by overlapping the edges and applying the Butyl Seal tape in between. It is also used to adhere to concrete walls and footings when the substrates are properly prepared. Soprema Butyl Tape is non-hardening and will remain flexible.



| PROPERTIES                         |   |                         |
|------------------------------------|---|-------------------------|
|                                    | VaporBond Tape                          | Butyl Seal Tape         |
| Backing                            | 7.5-mil Polyethylene                    | Coated Release Paper    |
| Adhesive                           | 1.5-mil Rubber-based Pressure Sensitive | 1mm Black Butyl Rubber  |
| Color                              | White                                   | Black                   |
| Type                               | Single Sided                            | Double Sided            |
| Size                               | 4" x 210'                               | 2" x 50'                |
| Rolls Per Case                     | 12                                      | 20                      |
| Weight Per Case                    | 45 lbs.                                 | 55 lbs                  |
| Adhesion Values                    | 30 oz/in. (to steel)                    | 107.5 oz/in. (to steel) |
| Service Temperature                | -40° F to 180° F                        | 30° F to 100° F         |
| Minimum Application Temperature    | 50° F                                   | 35° F                   |
| Ideal Storage - Temp. / Humidity % | 70° F / 40-50%                          | 70° F / 40-50%          |

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPRADRAIN ECO-VENT

Sopradrain Eco-Vent

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT** is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. **SOPRADRAIN ECO-VENT** can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption.

- |                       |  |
|-----------------------|--|
| Features and Benefits | <ul style="list-style-type: none"><li>• Excellent durability</li><li>• Protects waterproofing during and after installation of overburden/backfill</li><li>• Conforms to irregular surfaces and corners</li><li>• Waffle design creates open flow path - even during backfill</li><li>• Provides continuous flow even under high loads</li><li>• Long rolls reduce installation costs by reducing butt seams and eliminating interlocking</li><li>• Recycled content polymer contributes towards LEED points</li><li>• Increased flow rates over same thickness nylon and HDPE drains</li><li>• 3" fabric overlap flap on both sides</li></ul> |
|-----------------------|--|

## RECOMMENDED APPLICATIONS

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Foundation walls</li><li>• Green roofs</li><li>• Plaza decks</li><li>• Retaining walls</li></ul> | <ul style="list-style-type: none"><li>• Beneath slabs</li><li>• Earth sheltered homes</li><li>• Underground parking</li><li>• Exterior planters</li></ul> |
|--|---|

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 57.0 lbs              | 25.8 kg             |





### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 22.5 gal/min/ft | 15.5 gal/min/ft | 9.2 gal/min/ft |
| 500 psf   | 22.0 gal/min/ft | 15.2 gal/min/ft | 8.7 gal/min/ft |
| 1000 psf  | 20.7 gal/min/ft | 14.3 gal/min/ft | 8.4 gal/min/ft |
| 2000 psf  | 19.0 gal/min/ft | 13.1 gal/min/ft | 8.3 gal/min/ft |
| 3000 psf  | 16.0 gal/min/ft | 11.0 gal/min/ft | 6.4 gal/min/ft |
| 3600 psf  | 13.0 gal/min/ft | 8.7 gal/min/ft  | 5.4 gal/min/ft |
| 5000 psf  | 8.05 gal/min/ft | 5.4 gal/min/ft  | 3.1 gal/min/ft |
| 8000 psf  | 3.2 gal/min/ft  | 2.0 gal/min/ft  | 1.1 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-VENT/<br>Plate (Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN ECO-2

Sopradrain ECO-2

Order No. \*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

Sopradrain ECO-2 is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design of other Soprema products. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. Sopradrain ECO-2 can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption. The second fabric eliminates the need for protection board and provides additional protection for the waterproofing membrane.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after backfill
- Second fabric eliminates need for protection board
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during backfill
- Provides continuous flow even under high loads
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer contributes towards LEED points
- Increased flow rates over same thickness nylon and HDPE drains
- 3" fabric overlap flap on both sides

## RECOMMENDED APPLICATIONS

- Foundation walls
- Green roofs
- Plaza decks
- Retaining walls
- Beneath slabs
- Earth sheltered homes
- Underground parking
- Exterior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 64.2 lbs              | 29.1 kg             |



### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 20.2 gal/min/ft | 13.6 gal/min/ft | 7.7 gal/min/ft |
| 500 psf   | 18.1 gal/min/ft | 12.4 gal/min/ft | 7.3 gal/min/ft |
| 1000 psf  | 17.9 gal/min/ft | 12.2 gal/min/ft | 7.2 gal/min/ft |
| 2000 psf  | 16.8 gal/min/ft | 11.2 gal/min/ft | 7.0 gal/min/ft |
| 3000 psf  | 12.9 gal/min/ft | 7.9 gal/min/ft  | 4.9 gal/min/ft |
| 3600 psf  | 8.6 gal/min/ft  | 4.7 gal/min/ft  | 2.8 gal/min/ft |
| 5000 psf  | 3.8 gal/min/ft  | 2.5 gal/min/ft  | 1.3 gal/min/ft |
| 8000 psf  | 1.7 gal/min/ft  | 1.0 gal/min/ft  | 0.5 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-2/Plate<br>(Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN ECO-VENT WR

Sopradrain Eco-Vent WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments and a specially formulated water retention fabric bonded to one side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent mat. The absorbent mat is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-VENT WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |



## TECHNICAL DATA

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

### Polymer Properties

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.



# SOPRADRAIN ECO-2 WR

Sopradrain Eco-2 WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-2 WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments, a protective geotextile fabric on the underside and a specially formulated water retention fabric bonded to the top side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent matte. The absorbent matte is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-2 WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |

**TECHNICAL DATA**

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

**Polymer Properties**

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.



# MICROFAB

ROOT BARRIER

Order No. \*

\*Contact Customer Service for order number and availability.

## DESCRIPTION

MICROFAB is a coated, woven and micro-perforated polyethylene fabric that is used as a root barrier for applications in planters and on SOPRANATURE roof gardens.

MICROFAB is used as a root barrier above any approved SOPRADRAIN (drainboard), SOPRADRAIN WR (water-retention mat) or to complete the root protection when using AQUAMAT JARDIN, at borders, edges and details.

## FEATURES & BENEFITS

- Physical root barrier, prevents any type of chemical from leaching to roof drains
- Conforms to irregular surfaces and changes in plane
- Perforations in the fabric allow the flow of air and water but do not allow the penetration of plant roots

## PACKAGING

MICROFAB is packaged in rolls of 300 feet (91.5 m) in length by 11 feet (3.35 m) and 3 feet (.914 m) in width. The weight per roll is 105 pounds (47.6 kg) for 11 feet wide roll and 30 pounds (13.6 kg) for the 3 feet wide roll.

## PHYSICAL PROPERTIES

| PROPERTY                    | TEST METHOD | TEST VALUE   |
|-----------------------------|-------------|--------------|
| Thickness (mils)            | --          | 18 (0.46 mm) |
| Tensile Strength (lbf)      | ASTM D 4632 | 45 (200 N)   |
| Elongation at break %       | ASTM D 4632 | 15           |
| Tear Strength (lbf)         | ASTM D 4533 | 6.7 (30 N)   |
| Mullen Burst Strength (psi) | ASTM D 3786 | 70 (485 kPa) |
| Permeability (cm/s)         | ASTM D 4491 | 1.5 x 10     |







# AQUAMAT JARDIN

AQUAMAT JARDIN

Order No. E401\*

\*Above order number is for 11' x 100' roll. Order number for 7' x 100' roll is E402.

## DESCRIPTION

AQUAMAT JARDIN is a capillary mat specially designed for green roof irrigation and water retention in green roof assemblies. AQUAMAT JARDIN is a lamination of four materials that perform specific functions as follows:

- The top surface root barrier prevents roof penetration and permits the passage of water into the growing medium through capillary absorption.
- The integrated irrigation system provides watering with lines spaced at two (2') feet (60 cm).
- The non-woven geotextile acts as a reservoir that retains and distributes moisture constantly and evenly throughout the entire area.
- The bottom layer is a watertight 6 mil black, UV treated polyethylene film, which forms a capillary break at every ten (10) feet (3.05 m).

## FEATURES & BENEFITS

- Provides an easy water capillary rise on a thickness of eight (8") inches of growing medium on slopes up to 3%.
- Uses less than 60% of the water required by conventional overhead irrigation.
- Supplies water to the plants constantly and equally resulting in accelerated growth and stronger roof systems. Also reduces plant water stress.
- Lightweight at only 0.15 pounds per square foot (750 g/m<sup>2</sup>).
- Very effective water retention capacity of 2.5 gal/yd<sup>2</sup> (11.6 l/m<sup>2</sup>).

## PHYSICAL PROPERTIES

| PROPERTY                           | TEST METHOD      | TEST VALUE                  |                            |
|------------------------------------|------------------|-----------------------------|----------------------------|
| Roll Dimensions (feet)             | NA               | 11 x 100<br>(3.35 x 30.5 m) | 7 x 100<br>(2.13 x 30.5 m) |
| Roll Surface (ft²)                 | NA               | 1100 (102 m²)               | 700 (65 m²)                |
| Roll Weight (lbs.)                 | NA               | 170 (77 kg)                 | 108 (49 kg)                |
| Thickness (mils)                   | ASTM D 5199      | 4 (6.3 mm)                  |                            |
| Capillary rise (inches)            | SAGEOS GX 009-02 | 5 (125 mm)                  |                            |
| Water retention capacity (gal/yd²) | SAGEOS GX 009-02 | 2.5 gal (11.6 l/m²)         |                            |
| Transmissivity (in/min)            | SAGEOS GX 009-02 | 4.14 (10.5 cm/min)          |                            |
| All values are nominal             |                  |                             |                            |





# SOPREMA INTENSIVE GREEN ROOF MEDIA

INTENSIVE GREEN ROOF MEDIA

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Intensive Green Roof Media is an engineered growing media specifically designed for green roof applications. It is extremely light-weight and will aid in minimizing roof loads. Additionally, its low compaction rate and resistance to frost and fire balances water retention and the need to drain excessive water from the system. The roof media is a vital element of any green roof system and must be adjusted for regional conditions.

The Soprema Intensive Green Roof Media complies with all related ASTM and German FLL standards.



## TECHNICAL DATA

|   | Units                   | Intensive Media | FLL* Guideline<br>M.C. Extensive | Test Method    |
|---|-------------------------|-----------------|----------------------------------|----------------|
| Particle size less than 0.063 mm          | Mass %                  | 10.7            | ≤ 20                             | ASTM D-422-63  |
| Bulk Density (dry weight)                 | g/cm <sup>3</sup> (pcf) | .072 (44.8)     | -                                | ASTM E-2397-05 |
| Bulk Density (at max. water capacity)     | g/cm <sup>3</sup> (pcf) | 1.20 (75.7)     | -                                | ASTM E-2397-05 |
| Total Pore Volume                         | Mass %                  | 60.1            | -                                | ASTM C-29      |
| Maximum Water Capacity                    | % Volume                | 49.5            | ≥ 45                             | ASTM E-2399-05 |
| Air-Filled Porosity (max. water capacity) | % Volume                | 10.6            | ≥ 10                             | ASTM E-2396-05 |
| Permeability                              | cm/s (in/min)           | 0.03 (0.615)    | ≥ 0.0005 (0.012)                 | **             |
| PH (water)                                |                         | 8.0             | 5.5 - 8.0                        | **             |
| Soluble Salts (1:2 soil:water ratio)      | mmhos/cm (g/l)          | 0.87 (1.3)      | - (≤ 2.5)                        | **             |
| Organic Matter                            | Mass %                  | 6.4             | ≤ 12                             | ASTM E-2974-87 |
| Phosphorus                                | mg/l                    | 193             | ≤ 200                            | **             |
| Potassium                                 | mg/l                    | 698             | ≤ 700                            | **             |
| Magnesium                                 | mg/l                    | 477             | ≤ 160                            | **             |
| Nitrate and Ammonium                      | mg/l                    | 103             | ≤ 80                             | **             |
| Calcium                                   | mg/l                    | 2511            | -                                | **             |

\* FLL REFERS TO "Guidelines for the Planning, Execution and Upkeep of Green-Roof Sites, release 2002", Published by FLL, Bonn, Germany

\*\* Methods of Soil Analysis, Pt. 3 Chemical Analysis, SSA Book Series 4, Soil Science of American Society

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA SEMI-INTENSIVE GREEN ROOF MEDIA

SEMI-INTENSIVE GREEN ROOF MEDIA

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Semi-Intensive Green Roof Media is an engineered growing media specifically designed for green roof applications. It is extremely light-weight and will aid in minimizing roof loads. Additionally, its low compaction rate and resistance to frost and fire balances water retention and the need to drain excessive water from the system. The roof media is a vital element of any green roof system and must be adjusted for regional conditions.

The Soprema Semi-Intensive Green Roof Media complies with all related ASTM and German FLL standards.



## TECHNICAL DATA

|   | Units                   | Semi-Intensive Media | FLL* Guideline M.C. Extensive | Test Method    |
|---|-------------------------|----------------------|-------------------------------|----------------|
| Particle size less than 0.063 mm          | Mass %                  | 7.1                  |                               | ASTM D-422-63  |
| Bulk Density (dry weight)                 | g/cm <sup>3</sup> (pcf) | .070 (43.8)          |                               | ASTM E-2397-05 |
| Bulk Density (at max. water capacity)     | g/cm <sup>3</sup> (pcf) | 1.15 (71.9)          |                               | ASTM E-2397-05 |
| Total Pore Volume                         | Mass %                  | 60.6                 |                               | ASTM C-29      |
| Maximum Water Capacity                    | % Volume                | 45.5                 |                               | ASTM E-2399-05 |
| Air-Filled Porosity (max. water capacity) | % Volume                | 15.6                 |                               | ASTM E-2396-05 |
| Permeability                              | mm/min                  | 29.9                 |                               | **             |
| PH (water)                                |                         | 7.8                  |                               | **             |
| Soluble Salts (1:2 soil:water ratio)      | mmhos/cm (g/l)          | 1.21 (1.8)           |                               | **             |
| Organic Matter                            | Mass %                  | 5.9                  |                               | ASTM E-2974-87 |
| Phosphorus                                | mg/l                    | 73                   |                               | **             |
| Potassium                                 | mg/l                    | 357                  |                               | **             |
| Magnesium                                 | mg/l                    | 276                  |                               | **             |
| Nitrate and Ammonium                      | mg/l                    | 56                   |                               | **             |
| Calcium                                   | mg/l                    | 1496                 | -                             | **             |

\* FLL REFERS TO "Guidelines for the Planning, Execution and Upkeep of Green-Roof Sites, release 2002", Published by FLL, Bonn, Germany

\*\* Methods of Soil Analysis, Pt. 3 Chemical Analysis, SSA Book Series 4, Soil Science of American Society

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.





# SOPREMA EXTENSIVE GREEN ROOF MEDIA

EXTENSIVE GREEN ROOF MEDIA

Order No. \*

## DESCRIPTION & APPLICATION

Soprema Extensive Green Roof Media is an engineered growing media specifically designed for green roof applications. It is extremely light-weight and will aid in minimizing roof loads. Additionally, its low compaction rate and resistance to frost and fire balances water retention and the need to drain excessive water from the system. The roof media is a vital element of any green roof system and must be adjusted for regional conditions.

The Soprema Extensive Green Roof Media complies with all related ASTM and German FLL standards.



## TECHNICAL DATA

|   | Units                   | Extensive Media | FLL* Guideline<br>M.C. Extensive | Test Method    |
|---|-------------------------|-----------------|----------------------------------|----------------|
| Particle size less than 0.063 mm          | Mass %                  | .5              | ≤ 15                             | ASTM D-422-63  |
| Bulk Density (dry weight)                 | g/cm <sup>3</sup> (pcf) | .070 (43.6)     | -                                | ASTM E-2397-05 |
| Bulk Density (at max. water capacity)     | g/cm <sup>3</sup> (pcf) | 1.06 (66.4)     | -                                | ASTM E-2397-05 |
| Total Pore Volume                         | Mass %                  | 56.4            | -                                | ASTM C-29      |
| Maximum Water Capacity                    | % Volume                | 36.6            | ≥ 36                             | ASTM E-2399-05 |
| Air-Filled Porosity (max. water capacity) | % Volume                | 19.8            | ≥ 10                             | ASTM E-2396-05 |
| Permeability                              | cm/s (in/min)           | 0.08 (1.8)      | ≥ 0.001 (-)                      | **             |
| PH (water)                                |                         | 6.7             | 6.5 - 8                          | **             |
| Soluble Salts (1:5 soil:water ratio)      | mmhos/cm (g/l)          | 0.19 (0.6)      | - (≤ 3.5)                        | **             |
| Organic Matter                            | Mass %                  | 5.0             | ≤ 8                              | ASTM E-2974-87 |
| Phosphorus                                | mg/l                    | 93              | ≤ 200                            | **             |
| Potassium                                 | mg/l                    | 362             | ≤ 700                            | **             |
| Magnesium                                 | mg/l                    | 312             | ≤ 160                            | **             |
| Nitrate and Ammonium                      | mg/l                    | 101             | ≤ 80                             | **             |
| Calcium                                   | mg/l                    | 1716            | -                                | **             |

\* FLL REFERS TO "Guidelines for the Planning, Execution and Upkeep of Green-Roof Sites, release 2002", Published by FLL, Bonn, Germany

\*\* Methods of Soil Analysis, Pt. 3 Chemical Analysis, SSA Book Series 4, Soil Science of American Society

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.



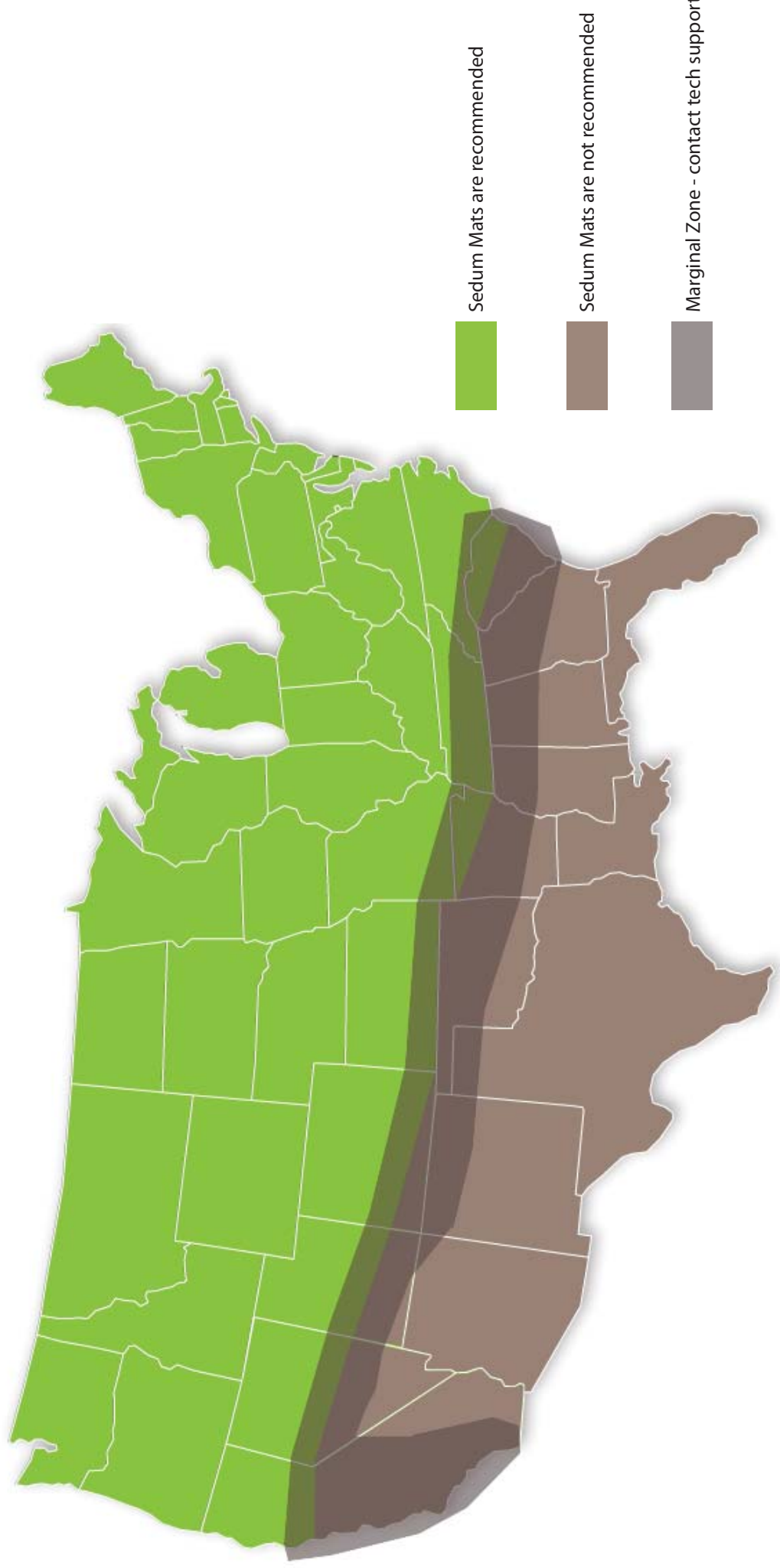




**SOPREMA**<sup>®</sup>

*The Building Envelope Company*

# Vegetated Mat Hardiness Map



Note: Sedum mats contain live vegetation. Certain sites may require irrigation in order to ensure survival. Please contact tech support for site specific questions.





# SOPRADRAIN

**SOPREMA** offers a complete line of high-resistance drainage panels intended to greatly simplify the waterproofing needs of building, civil engineering and green roofing. When used in conjunction with SOPREMA's waterproofing products, the SOPRADRAIN line of products provides first-rate protection against water and humidity.

## ADVANTAGES

VERTICAL AND HORIZONTAL DRAINAGE SOLUTIONS

SIMPLE AND RAPID INSTALLATION

COLD WEATHER INSTALLATION

COMPATIBLE WITH ICF FOUNDATIONS  
AND ALL SOPREMA MEMBRANES

NO WAITING TIME BEFORE EMBANKMENT

NO PRIMER OR SPECIAL TOOLS NEEDED

CAN CONTRIBUTE TO LEED CREDITS

SUPPLEMENTAL WARRANTY WHEN USED  
WITH SOPREMA WATERPROOFING MEMBRANES

REDUCED THICKNESS ALLOWS MORE PRECISE DETAILS

LIGHTWEIGHT PANELS FOR REDUCED STRUCTURAL LOAD

## DRAINAGE SOLUTIONS

10-G



SOPRADRAIN 10-G is a high-density drainage panel with a non-woven, factory-laminated geo-textile. Made for several different waterproofing applications, this panel can be installed with as much confidence on foundation walls as on green roofs.

15-G



SOPRADRAIN 15-G is used on waterproofing membranes for vertical and horizontal drainage in commercial applications. This high-density drainage panel is combined with a non-woven, factory-laminated geo-textile which is resistant to most chemical agents.

18-G



SOPRADRAIN 18-G is composed of a core and filter both made of high-density polypropylene. This panel provides optimal performance due to the great strength of its woven polypropylene filter, which can be installed beneath concrete and soil in high traffic areas like plaza decks and parking areas.

GEO-M



SOPRADRAIN GEO-M is a drainage and filtration material for green roofs with slopes of greater than 5%. It's made of a textile drainage core, a non-woven geo-textile and a factory-laminated root barrier membrane. It allows installation of drainage and root barrier in one simple step.

# ECO SERIE

**SOPRADRAIN ECO** drainage panels are characterised by their ecological sensitivity, being made of recycled materials. When the ECO SERIES is used in conjunction with other products made of recycled materials or in a green roofing system, SOPRADRAIN ECO drainage panels can contribute to earning up 9 **LEED** certification credits.

## ECO-5



SOPRADRAIN ECO-5 drainage panel is made of a core of recycled (over 60%) polyethylene onto which a geo-textile is factory laminated. This panel can be installed over the membrane to help drain various waterproofing applications, including green roofing and roof gardens such as SOPRANATURE.

## ECO-VENT



SOPRADRAIN ECO-VENT high-density drainage panel is made of recycled (over 40%) polypropylene onto which a geo-textile is factory laminated. It can be installed on inverted roofs, walls and foundations, floor slabs, underground parking decks and green roofing systems. Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and a great capacity for filtration and air exchange.

## ECO-VENT WR



SOPRADRAIN ECO-VENT WR high-density drainage panel is made of recycled (over 40%) polypropylene laminated with a synthetic hydrophilic absorbent mat that is highly resistant to puncture and tear. It is especially designed for SOPRANATURE green roofing systems and flower boxes (interior and exterior). Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and superior water retention.

## ECO-2



SOPRADRAIN ECO-2 high-density drainage panel is made of recycled (over 40%) polypropylene onto which a geo-textile is factory laminated on each side, eliminating the need for a protection panel. It can be installed on conventional roofs, walls and foundations, floor slabs, underground parking decks and green roofing systems. Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and a great capacity for filtration and air exchange.

## ECO-2 WR



SOPRADRAIN ECO-2 WR high-density drainage panel is made of recycled (over 40%) polypropylene laminated on one side with a synthetic hydrophilic absorbent mat that is highly resistant to puncture and tear, and on the other side with a geo-textile, eliminating the need for a protection panel. It is especially designed for SOPRANATURE green roofing systems and flower boxes (interior and exterior). Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and superior water retention.

## SOPRADRAIN ECO-5

**Description:** **SOPRADRAIN ECO-5** is a drainage panel consisting of a polyethylene core with a factory-laminated geotextile for installation over waterproofing membranes. To provide drainage for most waterproofing applications, including green roofs and rooftop gardens such as **SOPRANATURE**

This product, because it exceeds 60 % post-consumer recycled content, can help contribute up to 2 LEED® credits when used in conjunction with other recycled content products in a LEED® project. **SOPRADRAIN ECO-5** can contribute towards additional LEED® credits when used with a green roof by reducing stormwater runoff (credit 6.1), heat islands (credit 7.2), and energy consumption.

**Advantages:** **Reduced structural loading:** **SOPRADRAIN ECO-5** weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Reduced thickness:** **SOPRADRAIN ECO-5** is only 8 mm thick compared to 10 cm for gravel drainage, allowing better clearance at doors and a reduction in heights of upstands and curbs.

Recycled content polymer can contribute towards LEED® credits such as MR 4.1 and MR 4.2.

Can contribute to over 9 LEED® credits.\*<sup>1</sup>

## Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN ECO-5            |
|---|--|-----------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 20 m (6 x 65.6 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 36.6 (394 ft <sup>2</sup> ) |
| Thickness (mm)                              | -  | 8 (0.3 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 250 (5200 psf)              |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 109 (8.8 gal/min·ft)        |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN ECO-5                   |
|---|-------------|------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                               |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 2460 (60 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 580 (130 lbf)                      |
| Grab Elongation (%)                     | ASTM D 4632 | 60                                 |
| Puncture Resistance (N)                 | ASTM D 4833 | 182 (41 lbf)                       |

(All values are nominal)

\*<sup>1</sup> For more information on LEED®, visit [www.cagbc.org](http://www.cagbc.org) or contact your Soprema representative at 1-877-MAMMOUTH.

1.877.MAMMOUTH  
[www.soprema.ca](http://www.soprema.ca)

**NOTE:** SOPREMA INC. may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.



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## SOPRADRAIN 10-G

**Description:** *SOPRADRAIN 10-G* is a high-strength drainage panel consisting of a polypropylene core with a factory-laminated geotextile for installation over waterproof membranes to provide drainage, including green roofing and rooftop gardens such as *SOPRANATURE*.

**Advantages:** **Reduced structural loading:** *SOPRADRAIN 10-G* weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Reduced thickness:** *SOPRADRAIN 10-G* is only 1 cm thick compared to 10 cm for gravel drainage, allowing better clearance at doors and a reduction in heights of upstands and curbs.

## Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 10-G              |
|---|--|------------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 15.25 m (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )  |
| Thickness (mm)                              | -  | 10 (0.4 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 550 (11 000 psf)             |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 223 (18 gal/min·ft)          |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 10-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 5690 (140 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 450 (100 lbf)                       |
| Grab Elongation (%)                     | ASTM D 4632 | 50                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 300 (65 lbf)                        |

(All values are nominal)

**NOTE:** **SOPREMA INC.** may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.





## SOPRADRAIN 15-G

**Description:** *SOPRADRAIN 15-G* is a high-strength drainage panel consisting of a polypropylene core with a factory-laminated geotextile for installation over waterproofing membranes in most vertical and horizontal commercial drainage applications.

**Advantages:** **Reduced structural loading:** *SOPRADRAIN 15-G* weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Chemical resistance:** *SOPRADRAIN 15-G* is made with polypropylene. It will not deteriorate and is extremely resistant to chemical attack.

### Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 15-G                                      |
|---|--|--|
| Roll Dimensions (m)                         | -  | 1.22 x 15.25 (4 x 50 ft)<br>1.83 x 15.25 (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )                          |
| Thickness (mm)                              | -  | 10 (0.4 in)  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 718 (15 000 psf)                                     |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 223 (18 gal/min·ft)                                  |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 15-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 5690 (140 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 450 (100 lbf)                       |
| Grab Elongation (%)                     | ASTM D 4632 | 50                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 300 (65 lbf)                        |

(All values are nominal)

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## SOPRADRAIN 18-G

**Description:** ***SOPRADRAIN 18-G*** is a high-strength drainage panel consisting of a polypropylene core with a woven heavy-duty polypropylene filter fabric that offers optimum performance under concrete and soil in high loading areas such as plaza decks and parking structures.

**Advantages:** **Reduced structural loading:** ***SOPRADRAIN 18-G*** weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Highest strength core and filter fabric:** ***SOPRADRAIN 18-G*** has the highest compressive strength of all our drainage boards, and also the strongest filter fabric to resist deformation during placement of heavy overburden or concrete.

### Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 18-G              |
|---|--|------------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 15.25 m (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )  |
| Thickness (mm)                              | -  | 10 (0.4 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 862 (18 000 psf)             |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 334 (27 gal/min·ft)          |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 18-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.42                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 4074 (100 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 1620 (365 lbf)                      |
| Grab Elongation (%)                     | ASTM D 4632 | 24                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 440 (100 lbf)                       |

(All values are nominal)

**NOTE:** **SOPREMA INC.** may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.





# SOPRADRAIN ECO-VENT

Sopradrain Eco-Vent

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT** is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. **SOPRADRAIN ECO-VENT** can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption.

- |                       |  |
|-----------------------|--|
| Features and Benefits | <ul style="list-style-type: none"><li>• Excellent durability</li><li>• Protects waterproofing during and after installation of overburden/backfill</li><li>• Conforms to irregular surfaces and corners</li><li>• Waffle design creates open flow path - even during backfill</li><li>• Provides continuous flow even under high loads</li><li>• Long rolls reduce installation costs by reducing butt seams and eliminating interlocking</li><li>• Recycled content polymer contributes towards LEED points</li><li>• Increased flow rates over same thickness nylon and HDPE drains</li><li>• 3" fabric overlap flap on both sides</li></ul> |
|-----------------------|--|

## RECOMMENDED APPLICATIONS

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Foundation walls</li><li>• Green roofs</li><li>• Plaza decks</li><li>• Retaining walls</li></ul> | <ul style="list-style-type: none"><li>• Beneath slabs</li><li>• Earth sheltered homes</li><li>• Underground parking</li><li>• Exterior planters</li></ul> |
|--|---|

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 57.0 lbs              | 25.8 kg             |



### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 22.5 gal/min/ft | 15.5 gal/min/ft | 9.2 gal/min/ft |
| 500 psf   | 22.0 gal/min/ft | 15.2 gal/min/ft | 8.7 gal/min/ft |
| 1000 psf  | 20.7 gal/min/ft | 14.3 gal/min/ft | 8.4 gal/min/ft |
| 2000 psf  | 19.0 gal/min/ft | 13.1 gal/min/ft | 8.3 gal/min/ft |
| 3000 psf  | 16.0 gal/min/ft | 11.0 gal/min/ft | 6.4 gal/min/ft |
| 3600 psf  | 13.0 gal/min/ft | 8.7 gal/min/ft  | 5.4 gal/min/ft |
| 5000 psf  | 8.05 gal/min/ft | 5.4 gal/min/ft  | 3.1 gal/min/ft |
| 8000 psf  | 3.2 gal/min/ft  | 2.0 gal/min/ft  | 1.1 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-VENT/<br>Plate (Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN ECO-2

Sopradrain ECO-2

Order No. \*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

Sopradrain ECO-2 is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design of other Soprema products. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. Sopradrain ECO-2 can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption. The second fabric eliminates the need for protection board and provides additional protection for the waterproofing membrane.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after backfill
- Second fabric eliminates need for protection board
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during backfill
- Provides continuous flow even under high loads
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer contributes towards LEED points
- Increased flow rates over same thickness nylon and HDPE drains
- 3" fabric overlap flap on both sides

## RECOMMENDED APPLICATIONS

- Foundation walls
- Green roofs
- Plaza decks
- Retaining walls
- Beneath slabs
- Earth sheltered homes
- Underground parking
- Exterior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 64.2 lbs              | 29.1 kg             |





### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 20.2 gal/min/ft | 13.6 gal/min/ft | 7.7 gal/min/ft |
| 500 psf   | 18.1 gal/min/ft | 12.4 gal/min/ft | 7.3 gal/min/ft |
| 1000 psf  | 17.9 gal/min/ft | 12.2 gal/min/ft | 7.2 gal/min/ft |
| 2000 psf  | 16.8 gal/min/ft | 11.2 gal/min/ft | 7.0 gal/min/ft |
| 3000 psf  | 12.9 gal/min/ft | 7.9 gal/min/ft  | 4.9 gal/min/ft |
| 3600 psf  | 8.6 gal/min/ft  | 4.7 gal/min/ft  | 2.8 gal/min/ft |
| 5000 psf  | 3.8 gal/min/ft  | 2.5 gal/min/ft  | 1.3 gal/min/ft |
| 8000 psf  | 1.7 gal/min/ft  | 1.0 gal/min/ft  | 0.5 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-2/Plate<br>(Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN

**SOPREMA** offers a complete line of high-resistance drainage panels intended to greatly simplify the waterproofing needs of building, civil engineering and green roofing. When used in conjunction with SOPREMA's waterproofing products, the SOPRADRAIN line of products provides first-rate protection against water and humidity.

## ADVANTAGES

VERTICAL AND HORIZONTAL DRAINAGE SOLUTIONS

SIMPLE AND RAPID INSTALLATION

COLD WEATHER INSTALLATION

COMPATIBLE WITH ICF FOUNDATIONS  
AND ALL SOPREMA MEMBRANES

NO WAITING TIME BEFORE EMBANKMENT

NO PRIMER OR SPECIAL TOOLS NEEDED

CAN CONTRIBUTE TO LEED CREDITS

SUPPLEMENTAL WARRANTY WHEN USED  
WITH SOPREMA WATERPROOFING MEMBRANES

REDUCED THICKNESS ALLOWS MORE PRECISE DETAILS

LIGHTWEIGHT PANELS FOR REDUCED STRUCTURAL LOAD

## DRAINAGE SOLUTIONS

10-G



SOPRADRAIN 10-G is a high-density drainage panel with a non-woven, factory-laminated geo-textile. Made for several different waterproofing applications, this panel can be installed with as much confidence on foundation walls as on green roofs.

15-G



SOPRADRAIN 15-G is used on waterproofing membranes for vertical and horizontal drainage in commercial applications. This high-density drainage panel is combined with a non-woven, factory-laminated geo-textile which is resistant to most chemical agents.

18-G



SOPRADRAIN 18-G is composed of a core and filter both made of high-density polypropylene. This panel provides optimal performance due to the great strength of its woven polypropylene filter, which can be installed beneath concrete and soil in high traffic areas like plaza decks and parking areas.

GEO-M



SOPRADRAIN GEO-M is a drainage and filtration material for green roofs with slopes of greater than 5%. It's made of a textile drainage core, a non-woven geo-textile and a factory-laminated root barrier membrane. It allows installation of drainage and root barrier in one simple step.

# ECO SERIE

**SOPRADRAIN ECO** drainage panels are characterised by their ecological sensitivity, being made of recycled materials. When the ECO SERIES is used in conjunction with other products made of recycled materials or in a green roofing system, SOPRADRAIN ECO drainage panels can contribute to earning up 9 **LEED** certification credits.

## ECO-5



SOPRADRAIN ECO-5 drainage panel is made of a core of recycled (over 60%) polyethylene onto which a geo-textile is factory laminated. This panel can be installed over the membrane to help drain various waterproofing applications, including green roofing and roof gardens such as SOPRANATURE.

## ECO-VENT



SOPRADRAIN ECO-VENT high-density drainage panel is made of recycled (over 40%) polypropylene onto which a geo-textile is factory laminated. It can be installed on inverted roofs, walls and foundations, floor slabs, underground parking decks and green roofing systems. Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and a great capacity for filtration and air exchange.

## ECO-VENT WR



SOPRADRAIN ECO-VENT WR high-density drainage panel is made of recycled (over 40%) polypropylene laminated with a synthetic hydrophilic absorbent mat that is highly resistant to puncture and tear. It is especially designed for SOPRANATURE green roofing systems and flower boxes (interior and exterior). Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and superior water retention.

## ECO-2



SOPRADRAIN ECO-2 high-density drainage panel is made of recycled (over 40%) polypropylene onto which a geo-textile is factory laminated on each side, eliminating the need for a protection panel. It can be installed on conventional roofs, walls and foundations, floor slabs, underground parking decks and green roofing systems. Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and a great capacity for filtration and air exchange.

## ECO-2 WR



SOPRADRAIN ECO-2 WR high-density drainage panel is made of recycled (over 40%) polypropylene laminated on one side with a synthetic hydrophilic absorbent mat that is highly resistant to puncture and tear, and on the other side with a geo-textile, eliminating the need for a protection panel. It is especially designed for SOPRANATURE green roofing systems and flower boxes (interior and exterior). Its tangled strands are fused and moulded into a waffled pattern. This composition ensures excellent flexibility and superior water retention.

## SOPRADRAIN ECO-5

**Description:** **SOPRADRAIN ECO-5** is a drainage panel consisting of a polyethylene core with a factory-laminated geotextile for installation over waterproofing membranes. To provide drainage for most waterproofing applications, including green roofs and rooftop gardens such as **SOPRANATURE**

This product, because it exceeds 60 % post-consumer recycled content, can help contribute up to 2 LEED® credits when used in conjunction with other recycled content products in a LEED® project. **SOPRADRAIN ECO-5** can contribute towards additional LEED® credits when used with a green roof by reducing stormwater runoff (credit 6.1), heat islands (credit 7.2), and energy consumption.

**Advantages:** **Reduced structural loading:** **SOPRADRAIN ECO-5** weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Reduced thickness:** **SOPRADRAIN ECO-5** is only 8 mm thick compared to 10 cm for gravel drainage, allowing better clearance at doors and a reduction in heights of upstands and curbs.

Recycled content polymer can contribute towards LEED® credits such as MR 4.1 and MR 4.2.

Can contribute to over 9 LEED® credits.\*<sup>1</sup>

## Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN ECO-5            |
|---|--|-----------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 20 m (6 x 65.6 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 36.6 (394 ft <sup>2</sup> ) |
| Thickness (mm)                              | -  | 8 (0.3 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 250 (5200 psf)              |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 109 (8.8 gal/min·ft)        |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN ECO-5                   |
|---|-------------|------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                               |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 2460 (60 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 580 (130 lbf)                      |
| Grab Elongation (%)                     | ASTM D 4632 | 60                                 |
| Puncture Resistance (N)                 | ASTM D 4833 | 182 (41 lbf)                       |

(All values are nominal)

\*<sup>1</sup> For more information on LEED®, visit [www.cagbc.org](http://www.cagbc.org) or contact your Soprema representative at 1-877-MAMMOUTH.

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■ Toronto ☎ 905-265-8088 ■ Vancouver ☎ 604-522-3944 ■ Winnipeg ☎ 204-694-2849

## SOPRADRAIN 10-G

**Description:** *SOPRADRAIN 10-G* is a high-strength drainage panel consisting of a polypropylene core with a factory-laminated geotextile for installation over waterproof membranes to provide drainage, including green roofing and rooftop gardens such as *SOPRANATURE*.

**Advantages:** **Reduced structural loading:** *SOPRADRAIN 10-G* weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Reduced thickness:** *SOPRADRAIN 10-G* is only 1 cm thick compared to 10 cm for gravel drainage, allowing better clearance at doors and a reduction in heights of upstands and curbs.

### Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 10-G              |
|---|--|------------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 15.25 m (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )  |
| Thickness (mm)                              | -  | 10 (0.4 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 550 (11 000 psf)             |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 223 (18 gal/min·ft)          |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 10-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 5690 (140 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 450 (100 lbf)                       |
| Grab Elongation (%)                     | ASTM D 4632 | 50                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 300 (65 lbf)                        |

(All values are nominal)

**NOTE:** **SOPREMA INC.** may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.



## SOPRADRAIN 15-G

**Description:** *SOPRADRAIN 15-G* is a high-strength drainage panel consisting of a polypropylene core with a factory-laminated geotextile for installation over waterproofing membranes in most vertical and horizontal commercial drainage applications.

**Advantages:** **Reduced structural loading:** *SOPRADRAIN 15-G* weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Chemical resistance:** *SOPRADRAIN 15-G* is made with polypropylene. It will not deteriorate and is extremely resistant to chemical attack.

### Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 15-G                                      |
|---|--|--|
| Roll Dimensions (m)                         | -  | 1.22 x 15.25 (4 x 50 ft)<br>1.83 x 15.25 (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )                          |
| Thickness (mm)                              | -  | 10 (0.4 in)  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 718 (15 000 psf)                                     |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 223 (18 gal/min·ft)                                  |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 15-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.21                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 5690 (140 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 450 (100 lbf)                       |
| Grab Elongation (%)                     | ASTM D 4632 | 50                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 300 (65 lbf)                        |

(All values are nominal)

1.877.MAMMOUTH  
[www.soprema.ca](http://www.soprema.ca)

**NOTE:** SOPREMA INC. may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.





■ Calgary ☎ 403-248-8837 ■ Edmonton ☎ 780-435-2800 ■ London ☎ 519-672-5561 ■ Moncton ☎ 506-384-6101  
■ Montreal ☎ 450-655-6676 ■ Ottawa ☎ 613-741-4591 ■ Quebec ☎ 418-681-8788 ■ Saskatoon ☎ 306-651-2647  
■ Toronto ☎ 905-265-8088 ■ Vancouver ☎ 604-522-3944 ■ Winnipeg ☎ 204-694-2849

## SOPRADRAIN 18-G

**Description:** *SOPRADRAIN 18-G* is a high-strength drainage panel consisting of a polypropylene core with a woven heavy-duty polypropylene filter fabric that offers optimum performance under concrete and soil in high loading areas such as plaza decks and parking structures.

**Advantages:** **Reduced structural loading:** *SOPRADRAIN 18-G* weighs less than 1 kg/m<sup>2</sup> compared to 145 kg/m<sup>2</sup> for a 10 cm drainage layer of gravel.

**Highest strength core and filter fabric:** *SOPRADRAIN 18-G* has the highest compressive strength of all our drainage boards, and also the strongest filter fabric to resist deformation during placement of heavy overburden or concrete.

### Properties:

| Drainage Core                               | Standards                                | SOPRADRAIN 18-G              |
|---|--|------------------------------|
| Roll Dimensions (m)                         | -  | 1.83 m x 15.25 m (6 x 50 ft) |
| Gross Coverage (m <sup>2</sup> )            | -  | 27.9 (300 ft <sup>2</sup> )  |
| Thickness (mm)                              | -  | 10 (0.4 in)                  |
| Compressive Strength (kPa)                  | ASTM D 1621                              | 862 (18 000 psf)             |
| Maximum <i>In-Plane</i> Flow Rate (l/min·m) | ASTM D 4716<br>(Hydraulic gradient of 1) | 334 (27 gal/min·ft)          |

(All values are nominal)

| Geotextile Properties                   | Standards   | SOPRADRAIN 18-G                     |
|---|-------------|-------------------------------------|
| Apparent Opening Size (mm)              | ASTM D 4751 | 0.42                                |
| Water Flow Rate (l/min·m <sup>2</sup> ) | ASTM D 4491 | 4074 (100 gal/min·ft <sup>2</sup> ) |
| Grab Tensile (N)                        | ASTM D 4632 | 1620 (365 lbf)                      |
| Grab Elongation (%)                     | ASTM D 4632 | 24                                  |
| Puncture Resistance (N)                 | ASTM D 4833 | 440 (100 lbf)                       |

(All values are nominal)

**NOTE:** **SOPREMA INC.** may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.





# SOPRADRAIN ECO-VENT

Sopradrain Eco-Vent

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT** is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. **SOPRADRAIN ECO-VENT** can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of overburden/backfill
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during backfill
- Provides continuous flow even under high loads
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer contributes towards LEED points
- Increased flow rates over same thickness nylon and HDPE drains
- 3" fabric overlap flap on both sides

## RECOMMENDED APPLICATIONS

- Foundation walls
- Green roofs
- Plaza decks
- Retaining walls
- Beneath slabs
- Earth sheltered homes
- Underground parking
- Exterior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 57.0 lbs              | 25.8 kg             |



### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 22.5 gal/min/ft | 15.5 gal/min/ft | 9.2 gal/min/ft |
| 500 psf   | 22.0 gal/min/ft | 15.2 gal/min/ft | 8.7 gal/min/ft |
| 1000 psf  | 20.7 gal/min/ft | 14.3 gal/min/ft | 8.4 gal/min/ft |
| 2000 psf  | 19.0 gal/min/ft | 13.1 gal/min/ft | 8.3 gal/min/ft |
| 3000 psf  | 16.0 gal/min/ft | 11.0 gal/min/ft | 6.4 gal/min/ft |
| 3600 psf  | 13.0 gal/min/ft | 8.7 gal/min/ft  | 5.4 gal/min/ft |
| 5000 psf  | 8.05 gal/min/ft | 5.4 gal/min/ft  | 3.1 gal/min/ft |
| 8000 psf  | 3.2 gal/min/ft  | 2.0 gal/min/ft  | 1.1 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-VENT/<br>Plate (Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN ECO-2

Sopradrain ECO-2

Order No. \*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

Sopradrain ECO-2 is one of a new generation of environmentally conscious Soprema products. This drainage composite consists of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one side. The entangled filaments are molded into a square waffle pattern that maintains the flexible design of other Soprema products. This product, because it exceeds 40% post-industrial recycled content, can help contribute up to 2 LEED points when used in conjunction with other recycled content products. Sopradrain ECO-2 can contribute towards additional LEED points when used with a green roof by reducing storm water runoff, heat islands and energy consumption. The second fabric eliminates the need for protection board and provides additional protection for the waterproofing membrane.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after backfill
- Second fabric eliminates need for protection board
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during backfill
- Provides continuous flow even under high loads
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer contributes towards LEED points
- Increased flow rates over same thickness nylon and HDPE drains
- 3" fabric overlap flap on both sides

## RECOMMENDED APPLICATIONS

- Foundation walls
- Green roofs
- Plaza decks
- Retaining walls
- Beneath slabs
- Earth sheltered homes
- Underground parking
- Exterior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS         | METRIC UNITS        |
|--------------------|-----------------------|---------------------|
| Core Width         | 39.0 in               | 99.1 cm             |
| Length             | 100.0 ft              | 30.5 m              |
| Area               | 36.0 yd <sup>2</sup>  | 30.1 m <sup>2</sup> |
| Area               | 324.0 ft <sup>2</sup> | 30.1 m <sup>2</sup> |
| Roll Diameter      | 27.0 in               | 68.6 cm             |
| Gross Roll Weight  | 64.2 lbs              | 29.1 kg             |



### TECHNICAL DATA

| PHYSICAL PROPERTIES   | TEST METHOD | ENGLISH UNITS                 | METRIC UNITS              |
|---|-------------|-------------------------------|---------------------------|
| <b>Core Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Thickness   | --          | 0.45 in                       | 11.43 mm                  |
| Core Weight   | --          | 16 oz/ yd <sup>2</sup>        | 542.6 g/ m <sup>2</sup>   |
| Compressive Stregnth*   | ASTM D 1621 | >30,000 psf                   | 1436 kPa                  |
| <b>Fabric Properties</b>  |             |                               |                           |
| Material  | --          | Polypropylene                 | --                        |
| Color   | --          | Black                         | --                        |
| Weight  | ASTM D 5261 | 4.5 oz/yd <sup>2</sup>        | 152.6 g/m <sup>2</sup>    |
| Grab Strength   | ASTM D 4632 | 120.0 lbs                     | 0.54 kN                   |
| Grab Elongation   | ASTM D 4632 | 50%                           | 50%                       |
| Trapeziodal Tear  | ASTM D 4533 | 50.0 lbs                      | 0.22 kN                   |
| Puncture Strength   | ASTM D 4833 | 70.0 lbs                      | 0.31 kN                   |
| Apparent Opening Size   | ASTM D 4751 | 70 US Sieve                   | 0.212 mm                  |
| Flow Rate   | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup> | 4887 l/sec/m <sup>2</sup> |
| Permittivity  | ASTM D 4491 | 1.8 sec <sup>-1</sup>         | 1.8 sec <sup>-1</sup>     |
| (All values are nominal)  |             |                               |                           |
| *Tested per ASTM D 1621 modified and ASTM D 4716.   |             |                               |                           |
| *Failure defined as reaching yield point or no continued measurable flow under stated load. |             |                               |                           |

| FLOW RATES  |                 |                 |                |
|---|-----------------|-----------------|----------------|
| Pressure  | 1.0 Gradient    | 0.5 Gradient    | 0.2 Gradient   |
| 250 psf   | 20.2 gal/min/ft | 13.6 gal/min/ft | 7.7 gal/min/ft |
| 500 psf   | 18.1 gal/min/ft | 12.4 gal/min/ft | 7.3 gal/min/ft |
| 1000 psf  | 17.9 gal/min/ft | 12.2 gal/min/ft | 7.2 gal/min/ft |
| 2000 psf  | 16.8 gal/min/ft | 11.2 gal/min/ft | 7.0 gal/min/ft |
| 3000 psf  | 12.9 gal/min/ft | 7.9 gal/min/ft  | 4.9 gal/min/ft |
| 3600 psf  | 8.6 gal/min/ft  | 4.7 gal/min/ft  | 2.8 gal/min/ft |
| 5000 psf  | 3.8 gal/min/ft  | 2.5 gal/min/ft  | 1.3 gal/min/ft |
| 8000 psf  | 1.7 gal/min/ft  | 1.0 gal/min/ft  | 0.5 gal/min/ft |
| Typical flow vs. pressure for vertical applications (ASTM D 4716) Sample configuration: Plate/SOPRADRAIN ECO-2/Plate<br>(Values are average of machine direction and cross machine direction test results.) |                 |                 |                |



# SOPRADRAIN ECO-VENT WR

Sopradrain Eco-Vent WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments and a specially formulated water retention fabric bonded to one side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent mat. The absorbent mat is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-VENT WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |





## TECHNICAL DATA

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

### Polymer Properties

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.



# SOPRADRAIN ECO-2 WR

Sopradrain Eco-2 WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-2 WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments, a protective geotextile fabric on the underside and a specially formulated water retention fabric bonded to the top side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent matte. The absorbent matte is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-2 WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |

**TECHNICAL DATA**

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

**Polymer Properties**

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.

# 1 PRODUCT NAME

## STYROFOAM Highload 40, 60 and 100 Insulation

# 2 Manufacturer

Dow Chemical Canada Inc.  
Building Materials  
1086 Modeland Rd.  
Sarnia, ON N7T 7K7  
English: 1-800-268-4840  
French: 1-800-363-6210  
www.dowbuildingmaterials.com

# 3 Product Description

STYROFOAM<sup>®</sup> Highload extruded polystyrene insulation is a closed-cell foam insulation. Available in compressive strengths of 40, 60 or 100 psi, STYROFOAM Highload insulation features superior moisture resistance and R-value (RSI)\*\* retention. All three STYROFOAM Highload insulation products resist compressive creep and fatigue, delivering long-term compressive strength. Like all STYROFOAM insulation products, STYROFOAM Highload 40, 60 and 100 are durable, versatile and reusable – making

them the preferred choices for a variety of high-load applications.

### BASIC USE

STYROFOAM Highload insulation is ideal for use in low-temperature (freezer floor) applications, highways, airport runways, bridge abutments, parking decks, utility lines, ice rinks and plaza decks. It is the responsibility of the designer to select the proper STYROFOAM Highload insulation product based on the dead and live loads expected in the application.

### SIZES

Thickness:

2" or 3" (51 mm or 76 mm)

Width and length:

2' x 8' (610 mm x 2,438 mm)

Edge treatment:

square edge

Not all products are available in all parts of the country. Other product sizes are available by custom order. Consult your Dow representative for information.

# 4 Technical Data

## APPLICABLE STANDARDS

ASTM International

- ASTM C518 – Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C177 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
- ASTM D696 – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics between -30°C and 30°C with a Vitreous Silica Dilatometer

TABLE 1

| Physical Properties of STYROFOAM Highload 40, 60 and 100 Insulation  |   |   |   |
|--|---|---|---|
| Property and Test Method   | Value   |   |   |
|  | Highload 40   | Highload 60   | Highload 100  |
| Thermal Resistance <sup>(1)</sup> , per in. (25.4mm) ASTM C518, C177, @ 75°F (24°C) mean temp., ft <sup>2</sup> ·h·°F/Btu (m <sup>2</sup> ·°C/W) min., R-value (RSI) | 5.0 (.88)   | 5.0 (.88)   | 5.0 (.88)   |
| Compressive Strength, ASTM D1621, psi (kPa) min. <sup>(2)</sup>  | 40 (275)  | 60 (415)  | 100 (690)   |
| Water Absorption, ASTM D2842, % by volume, max.  | 0.7   | 0.7   | 0.7   |
| Water Vapour Permeance <sup>(3)</sup> , ASTM E96, perms (ng/Pa·s·m <sup>2</sup> )  | 0.6 (35)  | 0.6 (35)  | 0.6 (35)  |
| Maximum Use Temperature °F (°C)  | 165 (74)  | 165 (74)  | 165 (74)  |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in °F (mm/m°C)  | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) |
| Flexural Strength, ASTM C203, min., psi (kPa)  | 70 (480)  | 85 (585)  | 85 (585)  |
| Compressive Modulus (typical), ASTM D1621, psi (kPa)   | 1400 (9650)   | 2200 (15170)  | 3700 (25510)  |
| Complies with CAN/ULC S701, Type   | 4   | 4   | 4   |
| Edge Treatment   | SE  | SE  | SE  |

<sup>(1)</sup>For 1" (25.4 mm) material

<sup>(2)</sup>Vertical compressive strength is measured at 5% deformation or at yield, whichever occurs first. Since STYROFOAM insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3-1 is suggested. For dynamic loads, 5-1 is suggested.

<sup>(3)</sup>Water vapour permeance varies with product type and thickness. Values are based on the desiccant method and they apply to insulation 1" or greater in thickness.

TABLE 2

| Chemical Resistance of STYROFOAM Highload 40, 60 and 100 Insulation |           |   |           |
|---|-----------|---|-----------|
| Acid, inorganic   | Good      | Gases, carbon dioxide (CO <sub>2</sub> )    | Excellent |
| Acid, organic   | Good      | Gases, dioxide (O <sub>2</sub> )            | Excellent |
| Alcohol   | Excellent | Gases, nitrous hydroxide (NH <sub>3</sub> ) | Good      |
| Asphalts, water-based   | Excellent | Gases, sulfur dioxide (SO <sub>2</sub> )    | Good      |
| Bases (caustics)  | Excellent | Mineral oil USP                             | Excellent |
| Bleach  | Good      | Paints, alcohol-based                       | Good      |
| Brines and other salts  | Excellent | Paints, water-based                         | Excellent |
| Cements and mortar  | Excellent | Water                                       | Excellent |

- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation

### PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM Highload 40, 60 and 100 insulation products exhibit the physical properties as indicated in Table 1.

For chemical resistance properties of STYROFOAM Highload 40, 60 and 100 insulation products, see Table 2.

### ENVIRONMENTAL DATA

STYROFOAM extruded polystyrene insulation is manufactured with HCFC blowing agents which have 94 percent less ozone depletion potential than standard CFC blowing agents.

## 5 Installation

STYROFOAM Highload 40, 60 and 100 insulation boards are easy to handle and install. They can be cut with a utility knife or any sharp blade. Contact a local Dow representative or access the literature library at [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com) for more specific instructions.

## 6 Availability

STYROFOAM Highload 40, 60 and 100 insulation products are distributed through an extensive network. For more information, contact your local Dow representative or call:

- English: 1-800-232-2436
- French: 1-800-565-1255

## 7 Warranty

Not applicable.

## 8 Maintenance

Not applicable.

## 9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM Highload 40, 60 and 100 insulation products. Technical personnel are available at Dow sales offices to assist with any insulation project.

## 10 Filing Systems

- [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com)

### IN CANADA:

- For Technical Information (English): 1-800-268-4840; (French): 1-800-363-6210
- For Sales Information (English): 1-800-232-2436; (French): 1-800-565-1255

### DOW CHEMICAL CANADA INC.

• Building Materials • 1086 Modeland Rd. • Sarnia, ON N7T 7K7 • [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com)

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COMBUSTIBLE: Protect from high heat sources. For more information, consult MSDS and/or call Dow at 1-800-268-4840. In an emergency, call 1-519-339-3711. Local building codes may require a protective or thermal barrier. Contact your local building inspector for more information.



Living.  
Improved daily.



# 1 PRODUCT NAME

## STYROFOAM™ ROOFMATE™ Extruded Polystyrene Insulation

## 2 Manufacturer

The Dow Chemical Company  
Building Solutions  
200 Larkin  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465  
www.dowstyrofoam.com/architect

Dow Chemical Canada Inc.  
Building Solutions  
250 – 6th Ave. SW, Suite 2200  
Calgary, AB T2P 3H7  
1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)  
www.dowstyrofoam.ca/4architects

## 3 Product Description

### BASIC USE

STYROFOAM™ ROOFMATE™ extruded polystyrene insulation is designed for installation above waterproofing or roofing membranes in protected membrane roof (PMR) applications.

STYROFOAM ROOFMATE insulation helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

### SIZES

#### IN THE U.S.:

##### Butt Edge

##### Width and length:

2' x 8'

##### Thickness:

1", 1-1/2", 2", 2-1/2", 3",  
3-1/2", 4"

#### IN CANADA:

##### Butt Edge

##### Width and length:

2' x 4' (600 mm x 1,200 mm)

##### Thickness:

1" (25 mm)

##### Shiplap Edge

##### Width and length:

2' x 4' (600 mm x 1,200 mm)

##### Thickness:

1-1/2" (40 mm), 2" (50 mm),  
2-1/2" (65 mm), 3" (75 mm),  
4" (100 mm)

Custom thicknesses are also available. Not all products are available in all parts of the United States and Canada. Contact your local Dow representative for details.

## 4 Technical Data

### APPLICABLE STANDARDS

STYROFOAM™ ROOFMATE™ insulation meets ASTM C578-01, Type VI – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics

### U.S. PROPERTY CHART

TABLE 1

| Physical Properties of STYROFOAM™ ROOFMATE™ Insulation   |                        |
|--|------------------------|
| Property and Test Method   | Value                  |
| Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, R-value <sup>(1)</sup> , min. | 5.0                    |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.  | 40                     |
| Water Absorption, ASTM C272, % by volume, max.   | 0.1                    |
| Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.  | 1.1                    |
| Maximum Use Temperature, °F  | 165                    |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F   | 3.5 x 10 <sup>-5</sup> |
| Flexural Strength, ASTM C203, psi, min.  | 60                     |
| Dimensional Stability, ASTM D2126, % linear change, max.   | 2.0                    |
| Surface Burning Characteristics <sup>(4)</sup> , ASTM E84,<br>Flame spread<br>Smoke developed                      | 5<br>165               |

(1) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

(2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first. Adequate design safety factors should be used to prevent long-term creep. Contact Dow for design recommendations.

(3) Based on 1" thickness.

(4) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.



CANADA PROPERTY CHART

TABLE 2

| Physical Properties of STYROFOAM™ ROOFMATE™ Insulation   |   |
|--|---|
| Property and Test Method   | Value   |
| Thermal Resistance per inch (25 mm), ASTM C518 @ 75°F (24°C) mean temp., ft <sup>2</sup> •h•°F/Btu (m <sup>2</sup> •°C/W), R-value (RSI) <sup>(1)</sup> , min. | 5.0 (.88)   |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi (kPa), min.  | 35 (240)  |
| Water Absorption, ASTM D2842, % by volume, max.  | <0.7  |
| Water Vapour Permeance <sup>(3)</sup> , ASTM E96, perm (ng/Pa•s•m <sup>2</sup> ), max.   | 0.8 (46)  |
| Maximum Use Temperature, °F (°C)   | 165 (74)  |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)   | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-5</sup> ) |
| Flexural Strength, ASTM C203, psi (kPa), min.  | 60 (415)  |
| Dimensional Stability, ASTM D2126, at 158°F (70°C) ambient humidity, % linear change, max.   | 1.5   |

(1) R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power.  
 (2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first.  
 (3) Based on 1" (25 mm) thickness.

- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- D696 – Standard Test Method for Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- CAN/ULC S701, Type 4 – Standard for Thermal Insulation, Polystyrene Boards

### CODE COMPLIANCES

STYROFOAM™ ROOFMATE™ insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES NER-699
- ICBO-ES ER-2257
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of FM Approval Guide
- National Building Code of Canada
- CCMC – Evaluation Listing #04888-L

Contact your local sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

### PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM™ ROOFMATE™ insulation exhibits physical properties as indicated in Tables 1 and 2 when tested as represented.

For chemical resistance properties of STYROFOAM ROOFMATE insulation, see Table 3.

### ENVIRONMENTAL DATA

STYROFOAM™ ROOFMATE™ insulation is manufactured with HCFC blowing agents, which have 94 percent less ozone depletion potential than standard CFC blowing agents.

STYROFOAM extruded polystyrene insulation products are reusable in many applications.

TABLE 3

| Chemical Resistance <sup>(1)</sup> of STYROFOAM™ ROOFMATE™ Insulation |                 |
|---|-----------------|
| Acid, inorganic, weak   | Excellent       |
| Acid, inorganic, strong   | Excellent       |
| Acid, organic, weak   | Excellent       |
| Acid, organic, strong   | Good            |
| Bases   | Excellent       |
| Alcohols, including isopropyl alcohol                                 | Excellent       |
| Methyl ethyl ketone   | Not recommended |
| Polyglycols, including propylene glycol                               | Excellent       |
| Hydrocarbons  | Not recommended |
| Salts   | Excellent       |
| Insecticides  | Not recommended |
| Kerosene  | Poor            |
| Mineral oil USP   | Excellent       |
| Naphtha (VMP)   | Not recommended |
| Turpentine  | Not recommended |
| Beer  | Good            |
| Gasoline  | Not recommended |
| Fruit juices  | Good            |

(1) Explanation of ratings:  
 Excellent = The plastic was unaffected for the duration of the test.  
 Good = A very slight clouding or discoloration of the plastic.  
 Poor = Considerable change in plastic during exposure, possible etching, discoloration, dimensional or weight changes.  
 Not recommended = Severe attack of the plastic. Became soft and unusable after a few hours of exposure.

NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

### FIRE PROTECTION

STYROFOAM™ ROOFMATE™ insulation is combustible; protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

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## 5 Installation

STYROFOAM™ ROOFMATE™ insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. Because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system. Contact a local Dow representative for more specific instructions.

## 6 Availability

STYROFOAM™ ROOFMATE™ insulation is distributed through an extensive network of roofing distributors. For product availability or for the name of your local Dow sales representative, call:  
1-800-232-2436 (English)  
1-800-565-1255 (French)

## 7 Warranty

In the United States, 10-, 15- and 20-year thermal warranties are available.

## 8 Maintenance

Not applicable.

## 9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM™ ROOFMATE™ insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call:

1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)

## 10 Filing Systems

- [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)
- [www.sweets.com](http://www.sweets.com)



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**IN THE U.S.:**

- For Technical Information: **1-866-583-BLUE (2583)**
- For Sales Information: **1-800-232-2436**

**THE DOW CHEMICAL COMPANY**

- Building Solutions • 200 Larkin • Midland, MI 48674
- [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)**

**IN CANADA:**

- For Technical Information: **1-866-583-BLUE (2583)** (English); **1-800-363-6210** (French)
- For Sales Information: **1-800-232-2436** (English); **1-800-565-1255** (French)

**DOW CHEMICAL CANADA INC.**

- Building Solutions • Suite 2200 • 250 – 6th Ave. SW • Calgary, AB T2P 3H7
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)**

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.





## STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION

### 1. PRODUCT NAME

STYROFOAM™ Brand  
PLAZAMATE™ Extruded  
Polystyrene Foam Insulation

### 2. MANUFACTURER

The Dow Chemical Company  
Dow Building Solutions  
200 Larkin  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465  
[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

### 3. PRODUCT DESCRIPTION

#### BASIC USE

STYROFOAM™ Brand  
PLAZAMATE™ Extruded  
Polystyrene Foam Insulation is designed for installation above waterproofing membranes in plaza deck applications.

STYROFOAM™ Brand  
PLAZAMATE™ Insulation helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

### 4. TECHNICAL DATA

#### APPLICABLE STANDARDS

STYROFOAM™ Brand  
PLAZAMATE™ Insulation meets ASTM C578, Type VII – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation.

Applicable standards include:

- C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics

- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- D696 – Standard Test Method for Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block- Type Thermal Insulation
- D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

#### CODE COMPLIANCES

STYROFOAM™ Brand  
PLAZAMATE™ Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR-699
- ICBO-ES ESR-2257
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of FM Approval Guide

### PHYSICAL PROPERTIES

STYROFOAM™ Brand  
PLAZAMATE™ Insulation exhibits physical properties as indicated in Table 2 when tested as represented.

### ENVIRONMENTAL DATA

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand PLAZAMATE™ Extruded Polystyrene Foam Insulation is reusable in many applications.

### FIRE PROTECTION

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

### 5. INSTALLATION

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. Because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system. Contact a local Dow representative or access the literature library at [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com) for more specific instructions.

**TABLE 1: SIZES, R-VALUES AND EDGE TREATMENTS FOR STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

| NOMINAL BOARD THICKNESS <sup>(1)</sup> , IN. | R-VALUE <sup>(2)</sup> | BOARD SIZE, IN. | EDGE TREATMENT |
|--|------------------------|-----------------|----------------|
| 1.5  | 7.5                    | 24 x 96         | Square Edge    |
| 2.0  | 10.0                   | 24 x 96         | Square Edge    |
| 3.0  | 15.0                   | 24 x 96         | Square Edge    |

(1) Not all product sizes are available in all regions.

(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft<sup>2</sup>•h•°F/Btu. R-value determined by ASTM C518.

**TABLE 2: PHYSICAL PROPERTIES OF STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

| PROPERTY AND TEST METHOD  | VALUE                  |
|---|------------------------|
| Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, min., R-value <sup>(1)</sup> , min.            | 5.0                    |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.   | 60                     |
| Water Absorption, ASTM C272, % by volume, max.  | 0.3                    |
| Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.   | 0.8                    |
| Maximum Use Temperature, °F   | 165                    |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F  | 3.5 x 10 <sup>-5</sup> |
| Flexural Strength, ASTM C203, psi, min.   | 75                     |
| Dimensional Stability, ASTM D2126, % linear change, max.  | 2.0                    |
| Surface Burning Characteristics <sup>(4)</sup> , ASTM E84,<br>Flame Spread <sup>(3)</sup> , ASTM E84<br>Smoke Development, ASTM E84 | 15<br>165              |

(1) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

(2) Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first. Since STYROFOAM™ Extruded Polystyrene Foam Insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep and fatigue deformation.

(3) Based on 1" thickness.

(4) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

## 6. AVAILABILITY

STYROFOAM™ Brand PLAZAMATE™ Insulation is distributed through an extensive network of roofing distributors. For product availability or for the name of your local Dow sales representative, call 1-800-232-2436.

## 7. WARRANTY

10-, 15- and 20-year thermal warranties are available as described at [www.dowpmr.com](http://www.dowpmr.com) (click on literature and MSDS).

## 8. MAINTENANCE

Not applicable.

## 9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand PLAZAMATE™ Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call 1-866-583-BLUE (2583).

## 10. FILING SYSTEMS

- [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)
- [www.sweets.com](http://www.sweets.com)

**[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)**

**Technical Information**  
1-866-583-BLUE (2583)  
**Sales Information**  
1-800-232-2436

**IN THE U.S.**  
THE DOW CHEMICAL COMPANY  
200 Larkin  
Midland, MI 48674

Dow has manufactured STYROFOAM™ Brand Extruded Polystyrene Foam Insulation for use in construction and specialty applications for more than 60 years. Its dense closed-cell structure gives STYROFOAM™ Brand Extruded Polystyrene Foam Insulation excellent moisture resistance, long-term thermal performance and compressive strength. STYROFOAM™ Brand Extruded Polystyrene Foam Insulation is reusable in many applications.

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CAUTION: This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

**WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.**

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.





# HIGH VELOCITY<sup>®</sup> INSULATION ADHESIVE III

HIGH VELOCITY INSULATION ADHESIVE III (17B)

Order No. A176\*

\*This order number is for one case of four (dual set) cartridges.  
Contact Customer Service for information on bulk packaging sizes.

## DESCRIPTION & APPLICATION

High Velocity Insulation Adhesive-III (HVIA-III) is highly elastomeric one-step (two part), VOC compliant, all-purpose foamable adhesive that contains no solvents and sets in minutes. HVIA-III is packaged in four (4) fifteen hundred milliliter (1500 ML) component caulk gun cartridges (dual set) per case. This static-mixing tip Application Method decreases material waste and provides a coverage rate of between four hundred and six hundred (400 - 600) square feet (37 - 56 m<sup>2</sup>) per carton (See limitations below). In high production applications, a multi-port two-component static-mixing tip adhesive applicator is used to insure proper application and wetting of the substrate/board before the adhesive ribbons can skin over.

HVIA-III is applied directly to the properly prepared, dry (not damp), clean substrate which is defined as, but is not limited too: free of dirt; dust; debris; oils; loose and/or embedded gravel; unadhered coatings; deteriorated existing membrane; any other contaminants that may result in a surface that is not sound or is un-even and affects the adhesion of the HVIA-III and adhesive to the substrate and insulation board.

The HVIA-III ribbon size is one-half (½") inch (13 mm) or the amount of adhesive and ribbon size necessary to provide positive contact between the substrate and the Approved thermal insulation or cover board (rigid board). On-site applicator must make job-specific application determinations to ensure Soprema acceptable bonded boards.

The FM Approvals Field Roof Area pattern is twelve (12") inches (305 mm) o.c. FM Approvals Perimeter and Corner Patterns depend upon the individual project building velocity pressures as determined by the most current ASCE Design Calculation Document. Contact Soprema for these Patterns and for Approved insulation adhesive patterns for Warranty Wind Rider Projects.

## APPROVED INSULATIONS\* & DECK SUBSTRATES

- Sopraboard, one-eighth (1/8") inch (3.2 mm) minimum
- High Density Wood Fiber Board (HDWFB) coated six sides, one-half (½") inch (13 mm) minimum
- HDWFB, one-half (½") inch (13 mm) minimum
- Polyisocyanurate, one and one-half (1 ½") inch (38 mm) minimum
- Polystyrene, one (1") inch (25 mm) minimum
- Plywood, one-half (½") inch (13 mm) minimum, wood plank, three-quarter (¾") inch (19 mm) minimum or structural use panels, seven-sixteenth (7/16") inch (11 mm) minimum
- ASTM C 1177 or C 1278 gypsum board, one-quarter (¼") inch (6.4 mm) minimum
- Vapor retarders, Sopralene 180 SP 3.5mm (heat welded only); Elastophene HD, Elastophene 180 Sanded, Sopralene 180 Sanded, Soprabase, Modified Sopra G, hot mopped or adhered with Soprema cold adhesive to properly prepared, clean, dry and primed (where required) substrates or these membranes and base sheets are mechanically fastened to acceptable substrates prior to the application of the cold applied roof assembly. Contact Soprema for special installation requirements; see published Specifications and Approved Details.



# HIGH VELOCITY INSULATION ADHESIVE III PAGE 2

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## APPROVED INSULATIONS\* & DECK SUBSTRATES

\*NOTE: When insulation and cover boards are thicker than three-quarter ( $\frac{3}{4}$ ") inch (19 mm), the board size is maximum four feet by four feet (4' x 4') feet (1.2m x 1.2m). Cover boards one-half ( $\frac{1}{2}$ ) inch (13 mm) or less can be installed in four feet by eight (4' x 8') feet (2.4m x 1.2m) dimensions.

### STRUCTURAL DECKS:

1. FM Approvals Listed Structural Deck types including concrete, gypsum, cementitious wood fiber and wood.
2. FM Approvals Listed Steel Deck types require a mechanically fastened and approved thermal barrier prior to using the HVIA material to adhere the next layer of insulation or cover board.

Contact Soprema for special installation requirements. See published Specifications and Approved Details.

NOTE: DO NOT PRIME SUBSTRATES WITH ASPHALTIC PRIMERS. HIGH VELOCITY INSULATION ADHESIVE PRIMER MAY BE REQUIRED WHEN A SUBSTRATE IS HIGHLY ABSORBENT.

## LIMITATIONS DURING APPLICATIONS

Coverage rates may change and require greater amounts of adhesive when uneven or irregular substrates are encountered. Eliminate uneven surfaces to ensure positive contact between the insulation board and substrate. As adhesive is applied, place insulation board into wet adhesive. Do not allow the adhesive to rise or skin over before installing the board. Apply continuous and immediate pressure across the entire roof insulation board surface to ensure full contact with the ribbon adhesive and substrate surface. Weight may be needed on the board surface until the adhesive ribbons are cured. Foot traffic should be avoided over the insulation boards as it can break the curing process bond between the freshly applied ribbon adhesive and the deck substrate surfaces and/or additional insulation layer surfaces(s). The length of time (Set time) until the adhesive provides sufficient bond to support foot traffic will vary depending on environmental conditions such as ambient temperature, humidity, wind, clouds, sun, etc. Moisture cured adhesive has a slow set-time in conditions with low ambient moisture content such as arid or cold climates while the adhesive cures quickly in warm, moist conditions. However typical set-time will vary from thirty (30) minutes to several hours. Do not apply to a wet or damp surface.

STORAGE: Keep temperature of contents between 65°F - 85°F (18°C – 29°C) 24 hours prior to use. Do not store in direct sunlight or high temperatures 90°F (32°C) and higher.

Shelf life is eight (8) months from the date of manufacture when unopened and properly stored.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations.

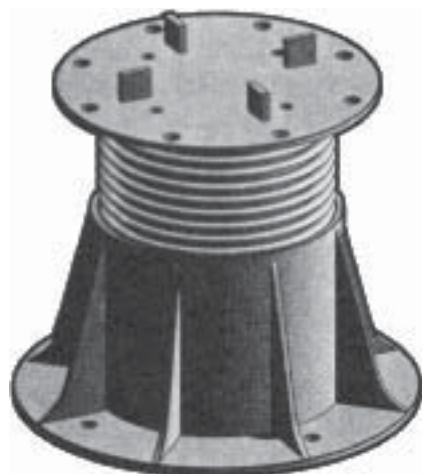
## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.

# Plaza Paver Accessories



*The Building  
Envelope  
Company*



## ScrewJack Pedestal

Available in 4 sizes

B1: 1 - 1/4" - 2"

B2: 2" - 3"

B3: 3" - 4 3/4"

B4: 4 3/4" - 7 3/4"

B4 Shown



## C4 ScrewJack Coupler

Available in 1 size, adds 2 1/2" - 4 1/4" to a B3 or B4 pedestal. Up to 4 couplers can be added to a ScrewJack Pedestal.



## B11 Shim

For use with ScrewJack Pedestals.  
Adds 1/16" to height.



## LD4 Base Leveler

Built-in 0" - 1/4" ft slope compensation.  
Can be stacked as many as 6 high for a max. slope compensation of 1 1/2".

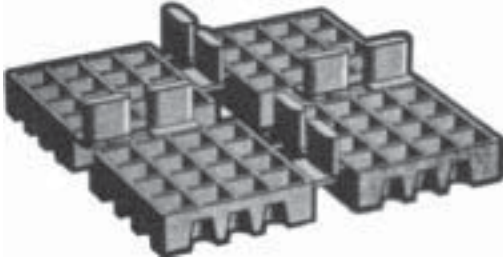
Eliminates tilt of ScrewJacks over sloped substrate



# Plaza Paver Accessories

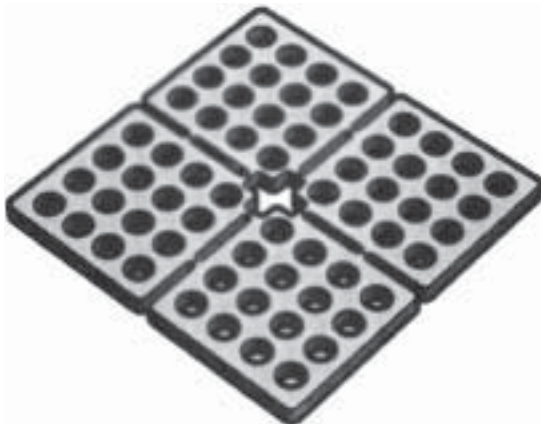


*The Building  
Envelope  
Company*



## Pave-El Pedestal

Available in 4 sizes: 4x, 5x, 6x, 7x  
Can be stacked as high as the base width.



## Pave-El Shim

Available in 4 sizes: 4x, 5x, 6x, 7x  
Adds 1/8" to height



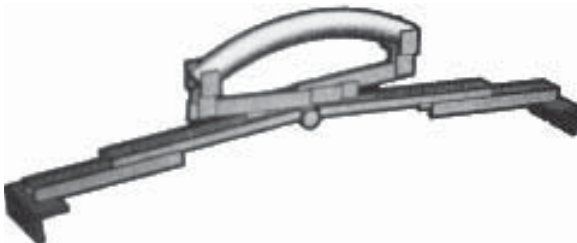
## PS9 Pedestal

Fixed height paver support



## Spacer Tab

Establishes 1/8" spacing of plaza pavers.



## SlabGrabber

Adjustable from 15" to 24"



# SOPRADRAIN ECO-VENT WR

Sopradrain Eco-Vent WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-VENT WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments and a specially formulated water retention fabric bonded to one side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent mat. The absorbent mat is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-VENT WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |





## TECHNICAL DATA

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

### Polymer Properties

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.



# SOPRADRAIN ECO-2 WR

Sopradrain Eco-2 WR

Order No.\*

\*Contact Customer Service for Order Number and Availability

## DESCRIPTION

**SOPRADRAIN ECO-2 WR** is one of a new generation of environmentally conscious Soprema products specifically designed for **SOPRANATURE** garden roofs. This multi-function composite consists of a 50% post-industrial recycled polypropylene drainage core of fused, entangled filaments, a protective geotextile fabric on the underside and a specially formulated water retention fabric bonded to the top side. The composite water retention fabric consists of a 8 oz/yd<sup>2</sup>- 100% post consumer recycled non-woven polyester fabric mechanically bonded to a 12 oz/yd<sup>2</sup> layer of synthetic hydrophilic (water) absorbent matte. The absorbent matte is designed to hold 10 to 12 times its unit weight of water. It is a very strong, durable composite that is extremely resistant to puncture and tearing. The composite is inert to biological degradation and naturally encountered chemicals, alkalis and acids. This product can help contribute up to 2 LEED points when used in conjunction with other recycled content products. As part of a **SOPRANATURE** garden roof, **SOPRADRAIN ECO-2 WR** can contribute towards additional LEED points by reducing storm water runoff, heat islands and energy consumption.

### Features and Benefits

- Excellent durability
- Protects waterproofing during and after installation of growing media
- Conforms to irregular surfaces and corners
- Waffle design creates open flow path - even during installation of growing media
- Long rolls reduce installation costs by reducing butt seams and eliminating interlocking
- Recycled content polymer in core and fabric contributes towards LEED points
- Provides superior water holding capacity
- Reduces runoff volume in garden roof applications
- 3" fabric overlap flap

## RECOMMENDED APPLICATIONS

- SOPRANATURE garden roof systems (Extensive, Semi-intensive or Intensive)
- Exterior planters
- Interior planters

## PACKAGING

| PRODUCT PROPERTIES | ENGLISH UNITS        | METRIC UNITS        |
|--------------------|----------------------|---------------------|
| Core Width         | 39.0 in              | 99.1 cm             |
| Length             | 61.5 ft              | 18.6 m              |
| Area               | 22.2 yd <sup>2</sup> | 18.6 m <sup>2</sup> |
| Area               | 200 ft <sup>2</sup>  | 18.6 m <sup>2</sup> |
| Roll Diameter      | 27.0 in              | 68.6 cm             |
| Gross Roll Weight  | 58.0 lbs             | 26.4 kg             |

**TECHNICAL DATA**

| PHYSICAL PROPERTIES                | TEST METHOD | TYPICAL VALUE                      |
|------------------------------------|-------------|------------------------------------|
| <b>Core Properties</b>             |             |                                    |
| Material                           | --          | Recycled Polypropylene             |
| Thickness                          | --          | 0.60 in                            |
| Core Weight                        | --          | 16 oz/ yd <sup>2</sup>             |
| Flow Rate*                         | ASTM D 4716 | 6.9 gal/min/ft                     |
| Compressive Stregnth* <sup>1</sup> | ASTM D 1621 | >30,000 psf                        |
| <b>Fabric Properties</b>           |             |                                    |
| Material                           | --          | Polypropylene / Recycled Polyester |
| Color                              | --          | Light Green                        |
| Weight                             | ASTM D 5261 | 20.0 oz/yd <sup>2</sup>            |
| Grab Strength                      | ASTM D 4632 | 135.0 lbs                          |
| Grab Elongation                    | ASTM D 4632 | 70%                                |
| Puncture Strength                  | ASTM D 4833 | 70.0 lbs                           |
| Mullen Burst Strength              | ASTM D 3786 | 300 psig                           |
| Flow Rate                          | ASTM D 4491 | 120.0 gal/min/ft <sup>2</sup>      |
| Permittivity                       | ASTM D 4491 | 1.8 sec <sup>-1</sup>              |

(All values are nominal)

\*Tested at Gradient of 0.1 (23.0 gal/min/ft when tested at Gradient of 1.0)

\*<sup>1</sup> Tested per ASTM D 1621 modified and ASTM D 4716. Failure defined as reaching yield point or no continued measurable flow under stated load.

**Polymer Properties**

Polypropylene has excellent resistance to organic solvents, degreasing agents, acids and alkalines. It provides superior tensile strength to that of high density polyethylene. It has a low moisture absorption rate, is resistant to staining and is extremely lightweight.

# 1 PRODUCT NAME

## STYROFOAM Highload 40, 60 and 100 Insulation

# 2 Manufacturer

Dow Chemical Canada Inc.  
Building Materials  
1086 Modeland Rd.  
Sarnia, ON N7T 7K7  
English: 1-800-268-4840  
French: 1-800-363-6210  
www.dowbuildingmaterials.com

# 3 Product Description

STYROFOAM® Highload extruded polystyrene insulation is a closed-cell foam insulation. Available in compressive strengths of 40, 60 or 100 psi, STYROFOAM Highload insulation features superior moisture resistance and R-value (RSI)\*\* retention. All three STYROFOAM Highload insulation products resist compressive creep and fatigue, delivering long-term compressive strength. Like all STYROFOAM insulation products, STYROFOAM Highload 40, 60 and 100 are durable, versatile and reusable – making

them the preferred choices for a variety of high-load applications.

### BASIC USE

STYROFOAM Highload insulation is ideal for use in low-temperature (freezer floor) applications, highways, airport runways, bridge abutments, parking decks, utility lines, ice rinks and plaza decks. It is the responsibility of the designer to select the proper STYROFOAM Highload insulation product based on the dead and live loads expected in the application.

### SIZES

Thickness:

2" or 3" (51 mm or 76 mm)

Width and length:

2' x 8' (610 mm x 2,438 mm)

Edge treatment:

square edge

Not all products are available in all parts of the country. Other product sizes are available by custom order. Consult your Dow representative for information.

# 4 Technical Data

## APPLICABLE STANDARDS

ASTM International

- ASTM C518 – Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C177 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
- ASTM D696 – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics between -30°C and 30°C with a Vitreous Silica Dilatometer

TABLE 1

| Physical Properties of STYROFOAM Highload 40, 60 and 100 Insulation  |   |   |   |
|--|---|---|---|
| Property and Test Method   | Value   |   |   |
|  | Highload 40   | Highload 60   | Highload 100  |
| Thermal Resistance <sup>(1)</sup> , per in. (25.4mm) ASTM C518, C177, @ 75°F (24°C) mean temp., ft <sup>2</sup> ·h·°F/Btu (m <sup>2</sup> ·°C/W) min., R-value (RSI) | 5.0 (.88)   | 5.0 (.88)   | 5.0 (.88)   |
| Compressive Strength, ASTM D1621, psi (kPa) min. <sup>(2)</sup>  | 40 (275)  | 60 (415)  | 100 (690)   |
| Water Absorption, ASTM D2842, % by volume, max.  | 0.7   | 0.7   | 0.7   |
| Water Vapour Permeance <sup>(3)</sup> , ASTM E96, perms (ng/Pa·s·m <sup>2</sup> )  | 0.6 (35)  | 0.6 (35)  | 0.6 (35)  |
| Maximum Use Temperature °F (°C)  | 165 (74)  | 165 (74)  | 165 (74)  |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in °F (mm/m°C)  | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-2</sup> ) |
| Flexural Strength, ASTM C203, min., psi (kPa)  | 70 (480)  | 85 (585)  | 85 (585)  |
| Compressive Modulus (typical), ASTM D1621, psi (kPa)   | 1400 (9650)   | 2200 (15170)  | 3700 (25510)  |
| Complies with CAN/ULC S701, Type   | 4   | 4   | 4   |
| Edge Treatment   | SE  | SE  | SE  |

<sup>(1)</sup>For 1" (25.4 mm) material

<sup>(2)</sup>Vertical compressive strength is measured at 5% deformation or at yield, whichever occurs first. Since STYROFOAM insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3-1 is suggested. For dynamic loads, 5-1 is suggested.

<sup>(3)</sup>Water vapour permeance varies with product type and thickness. Values are based on the desiccant method and they apply to insulation 1" or greater in thickness.

TABLE 2

| Chemical Resistance of STYROFOAM Highload 40, 60 and 100 Insulation |           |   |           |
|---|-----------|---|-----------|
| Acid, inorganic   | Good      | Gases, carbon dioxide (CO <sub>2</sub> )    | Excellent |
| Acid, organic   | Good      | Gases, dioxide (O <sub>2</sub> )            | Excellent |
| Alcohol   | Excellent | Gases, nitrous hydroxide (NH <sub>3</sub> ) | Good      |
| Asphalts, water-based   | Excellent | Gases, sulfur dioxide (SO <sub>2</sub> )    | Good      |
| Bases (caustics)  | Excellent | Mineral oil USP                             | Excellent |
| Bleach  | Good      | Paints, alcohol-based                       | Good      |
| Brines and other salts  | Excellent | Paints, water-based                         | Excellent |
| Cements and mortar  | Excellent | Water                                       | Excellent |

- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation

### PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM Highload 40, 60 and 100 insulation products exhibit the physical properties as indicated in Table 1.

For chemical resistance properties of STYROFOAM Highload 40, 60 and 100 insulation products, see Table 2.

### ENVIRONMENTAL DATA

STYROFOAM extruded polystyrene insulation is manufactured with HCFC blowing agents which have 94 percent less ozone depletion potential than standard CFC blowing agents.

## 5 Installation

STYROFOAM Highload 40, 60 and 100 insulation boards are easy to handle and install. They can be cut with a utility knife or any sharp blade. Contact a local Dow representative or access the literature library at [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com) for more specific instructions.

## 6 Availability

STYROFOAM Highload 40, 60 and 100 insulation products are distributed through an extensive network. For more information, contact your local Dow representative or call:

- English: 1-800-232-2436
- French: 1-800-565-1255

## 7 Warranty

Not applicable.

## 8 Maintenance

Not applicable.

## 9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM Highload 40, 60 and 100 insulation products. Technical personnel are available at Dow sales offices to assist with any insulation project.

## 10 Filing Systems

- [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com)

### IN CANADA:

- For Technical Information (English): 1-800-268-4840; (French): 1-800-363-6210
- For Sales Information (English): 1-800-232-2436; (French): 1-800-565-1255

### DOW CHEMICAL CANADA INC.

• Building Materials • 1086 Modeland Rd. • Sarnia, ON N7T 7K7 • [www.dowbuildingmaterials.com](http://www.dowbuildingmaterials.com)

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**COMBUSTIBLE:** Protect from high heat sources. For more information, consult MSDS and/or call Dow at 1-800-268-4840. In an emergency, call 1-519-339-3711. Local building codes may require a protective or thermal barrier. Contact your local building inspector for more information.



Living.  
Improved daily.



# 1 PRODUCT NAME

## STYROFOAM™ ROOFMATE™ Extruded Polystyrene Insulation

## 2 Manufacturer

The Dow Chemical Company  
Building Solutions  
200 Larkin  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465  
www.dowstyrofoam.com/architect

Dow Chemical Canada Inc.  
Building Solutions  
250 – 6th Ave. SW, Suite 2200  
Calgary, AB T2P 3H7  
1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)  
www.dowstyrofoam.ca/4architects

## 3 Product Description

### BASIC USE

STYROFOAM™ ROOFMATE™ extruded polystyrene insulation is designed for installation above waterproofing or roofing membranes in protected membrane roof (PMR) applications.

STYROFOAM ROOFMATE insulation helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

### SIZES

#### IN THE U.S.:

##### Butt Edge

##### Width and length:

2' x 8'

##### Thickness:

1", 1-1/2", 2", 2-1/2", 3",  
3-1/2", 4"

#### IN CANADA:

##### Butt Edge

##### Width and length:

2' x 4' (600 mm x 1,200 mm)

##### Thickness:

1" (25 mm)

##### Shiplap Edge

##### Width and length:

2' x 4' (600 mm x 1,200 mm)

##### Thickness:

1-1/2" (40 mm), 2" (50 mm),  
2-1/2" (65 mm), 3" (75 mm),  
4" (100 mm)

Custom thicknesses are also available. Not all products are available in all parts of the United States and Canada. Contact your local Dow representative for details.

## 4 Technical Data

### APPLICABLE STANDARDS

STYROFOAM™ ROOFMATE™ insulation meets ASTM C578-01, Type VI – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics

### U.S. PROPERTY CHART

TABLE 1

| Physical Properties of STYROFOAM™ ROOFMATE™ Insulation   |                        |
|--|------------------------|
| Property and Test Method   | Value                  |
| Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, R-value <sup>(1)</sup> , min. | 5.0                    |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.  | 40                     |
| Water Absorption, ASTM C272, % by volume, max.   | 0.1                    |
| Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.  | 1.1                    |
| Maximum Use Temperature, °F  | 165                    |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F   | 3.5 x 10 <sup>-5</sup> |
| Flexural Strength, ASTM C203, psi, min.  | 60                     |
| Dimensional Stability, ASTM D2126, % linear change, max.   | 2.0                    |
| Surface Burning Characteristics <sup>(4)</sup> , ASTM E84,<br>Flame spread<br>Smoke developed                      | 5<br>165               |

(1) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

(2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first. Adequate design safety factors should be used to prevent long-term creep. Contact Dow for design recommendations.

(3) Based on 1" thickness.

(4) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.



CANADA PROPERTY CHART

TABLE 2

| Physical Properties of STYROFOAM™ ROOFMATE™ Insulation   |   |
|--|---|
| Property and Test Method   | Value   |
| Thermal Resistance per inch (25 mm), ASTM C518 @ 75°F (24°C) mean temp., ft <sup>2</sup> •h•°F/Btu (m <sup>2</sup> •°C/W), R-value (RSI) <sup>(1)</sup> , min. | 5.0 (.88)   |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi (kPa), min.  | 35 (240)  |
| Water Absorption, ASTM D2842, % by volume, max.  | <0.7  |
| Water Vapour Permeance <sup>(3)</sup> , ASTM E96, perm (ng/Pa•s•m <sup>2</sup> ), max.   | 0.8 (46)  |
| Maximum Use Temperature, °F (°C)   | 165 (74)  |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)   | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-5</sup> ) |
| Flexural Strength, ASTM C203, psi (kPa), min.  | 60 (415)  |
| Dimensional Stability, ASTM D2126, at 158°F (70°C) ambient humidity, % linear change, max.   | 1.5   |

(1) R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power.  
 (2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first.  
 (3) Based on 1" (25 mm) thickness.

- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- D696 – Standard Test Method for Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- CAN/ULC S701, Type 4 – Standard for Thermal Insulation, Polystyrene Boards

### CODE COMPLIANCES

STYROFOAM™ ROOFMATE™ insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES NER-699
- ICBO-ES ER-2257
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of FM Approval Guide
- National Building Code of Canada
- CCMC – Evaluation Listing #04888-L

Contact your local sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

### PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM™ ROOFMATE™ insulation exhibits physical properties as indicated in Tables 1 and 2 when tested as represented.

For chemical resistance properties of STYROFOAM ROOFMATE insulation, see Table 3.

### ENVIRONMENTAL DATA

STYROFOAM™ ROOFMATE™ insulation is manufactured with HCFC blowing agents, which have 94 percent less ozone depletion potential than standard CFC blowing agents.

STYROFOAM extruded polystyrene insulation products are reusable in many applications.

TABLE 3

| Chemical Resistance <sup>(1)</sup> of STYROFOAM™ ROOFMATE™ Insulation |                 |
|---|-----------------|
| Acid, inorganic, weak   | Excellent       |
| Acid, inorganic, strong   | Excellent       |
| Acid, organic, weak   | Excellent       |
| Acid, organic, strong   | Good            |
| Bases   | Excellent       |
| Alcohols, including isopropyl alcohol                                 | Excellent       |
| Methyl ethyl ketone   | Not recommended |
| Polyglycols, including propylene glycol                               | Excellent       |
| Hydrocarbons  | Not recommended |
| Salts   | Excellent       |
| Insecticides  | Not recommended |
| Kerosene  | Poor            |
| Mineral oil USP   | Excellent       |
| Naphtha (VMP)   | Not recommended |
| Turpentine  | Not recommended |
| Beer  | Good            |
| Gasoline  | Not recommended |
| Fruit juices  | Good            |

(1) Explanation of ratings:  
 Excellent = The plastic was unaffected for the duration of the test.  
 Good = A very slight clouding or discoloration of the plastic.  
 Poor = Considerable change in plastic during exposure, possible etching, discoloration, dimensional or weight changes.  
 Not recommended = Severe attack of the plastic. Became soft and unusable after a few hours of exposure.

NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

### FIRE PROTECTION

STYROFOAM™ ROOFMATE™ insulation is combustible; protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

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## 5 Installation

STYROFOAM™ ROOFMATE™ insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. Because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system. Contact a local Dow representative for more specific instructions.

## 6 Availability

STYROFOAM™ ROOFMATE™ insulation is distributed through an extensive network of roofing distributors. For product availability or for the name of your local Dow sales representative, call:  
1-800-232-2436 (English)  
1-800-565-1255 (French)

## 7 Warranty

In the United States, 10-, 15- and 20-year thermal warranties are available.

## 8 Maintenance

Not applicable.

## 9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM™ ROOFMATE™ insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call:

1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)

## 10 Filing Systems

- [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)
- [www.sweets.com](http://www.sweets.com)



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**IN THE U.S.:**

- For Technical Information: **1-866-583-BLUE (2583)**
- For Sales Information: **1-800-232-2436**

**THE DOW CHEMICAL COMPANY**

- Building Solutions • 200 Larkin • Midland, MI 48674
- [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)**

**IN CANADA:**

- For Technical Information: **1-866-583-BLUE (2583)** (English); **1-800-363-6210** (French)
- For Sales Information: **1-800-232-2436** (English); **1-800-565-1255** (French)

**DOW CHEMICAL CANADA INC.**

- Building Solutions • Suite 2200 • 250 – 6th Ave. SW • Calgary, AB T2P 3H7
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)**

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.





## STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION

### 1. PRODUCT NAME

STYROFOAM™ Brand  
PLAZAMATE™ Extruded  
Polystyrene Foam Insulation

### 2. MANUFACTURER

The Dow Chemical Company  
Dow Building Solutions  
200 Larkin  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465  
[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

### 3. PRODUCT DESCRIPTION

#### BASIC USE

STYROFOAM™ Brand  
PLAZAMATE™ Extruded  
Polystyrene Foam Insulation is designed for installation above waterproofing membranes in plaza deck applications.

STYROFOAM™ Brand  
PLAZAMATE™ Insulation helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

### 4. TECHNICAL DATA

#### APPLICABLE STANDARDS

STYROFOAM™ Brand  
PLAZAMATE™ Insulation meets ASTM C578, Type VII – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation.

Applicable standards include:

- C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics

- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- D696 – Standard Test Method for Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block- Type Thermal Insulation
- D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

#### CODE COMPLIANCES

STYROFOAM™ Brand  
PLAZAMATE™ Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR-699
- ICBO-ES ESR-2257
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of FM Approval Guide

### PHYSICAL PROPERTIES

STYROFOAM™ Brand  
PLAZAMATE™ Insulation exhibits physical properties as indicated in Table 2 when tested as represented.

### ENVIRONMENTAL DATA

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand PLAZAMATE™ Extruded Polystyrene Foam Insulation is reusable in many applications.

### FIRE PROTECTION

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

### 5. INSTALLATION

STYROFOAM™ Brand  
PLAZAMATE™ Insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. Because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system. Contact a local Dow representative or access the literature library at [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com) for more specific instructions.

**TABLE 1: SIZES, R-VALUES AND EDGE TREATMENTS FOR STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

| NOMINAL BOARD THICKNESS <sup>(1)</sup> , IN. | R-VALUE <sup>(2)</sup> | BOARD SIZE, IN. | EDGE TREATMENT |
|--|------------------------|-----------------|----------------|
| 1.5  | 7.5                    | 24 x 96         | Square Edge    |
| 2.0  | 10.0                   | 24 x 96         | Square Edge    |
| 3.0  | 15.0                   | 24 x 96         | Square Edge    |

(1) Not all product sizes are available in all regions.

(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft<sup>2</sup>•h•°F/Btu. R-value determined by ASTM C518.

**TABLE 2: PHYSICAL PROPERTIES OF STYROFOAM™ BRAND PLAZAMATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

| PROPERTY AND TEST METHOD  | VALUE                  |
|---|------------------------|
| Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, min., R-value <sup>(1)</sup> , min.            | 5.0                    |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.   | 60                     |
| Water Absorption, ASTM C272, % by volume, max.  | 0.3                    |
| Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.   | 0.8                    |
| Maximum Use Temperature, °F   | 165                    |
| Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F  | 3.5 x 10 <sup>-5</sup> |
| Flexural Strength, ASTM C203, psi, min.   | 75                     |
| Dimensional Stability, ASTM D2126, % linear change, max.  | 2.0                    |
| Surface Burning Characteristics <sup>(4)</sup> , ASTM E84,<br>Flame Spread <sup>(3)</sup> , ASTM E84<br>Smoke Development, ASTM E84 | 15<br>165              |

(1) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

(2) Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first. Since STYROFOAM™ Extruded Polystyrene Foam Insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep and fatigue deformation.

(3) Based on 1" thickness.

(4) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

## 6. AVAILABILITY

STYROFOAM™ Brand PLAZAMATE™ Insulation is distributed through an extensive network of roofing distributors. For product availability or for the name of your local Dow sales representative, call 1-800-232-2436.

## 7. WARRANTY

10-, 15- and 20-year thermal warranties are available as described at [www.dowpmr.com](http://www.dowpmr.com) (click on literature and MSDS).

## 8. MAINTENANCE

Not applicable.

## 9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand PLAZAMATE™ Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call 1-866-583-BLUE (2583).

## 10. FILING SYSTEMS

- [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)
- [www.sweets.com](http://www.sweets.com)

**[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)**

**Technical Information**  
1-866-583-BLUE (2583)  
**Sales Information**  
1-800-232-2436

**IN THE U.S.**  
THE DOW CHEMICAL COMPANY  
200 Larkin  
Midland, MI 48674

Dow has manufactured STYROFOAM™ Brand Extruded Polystyrene Foam Insulation for use in construction and specialty applications for more than 60 years. Its dense closed-cell structure gives STYROFOAM™ Brand Extruded Polystyrene Foam Insulation excellent moisture resistance, long-term thermal performance and compressive strength. STYROFOAM™ Brand Extruded Polystyrene Foam Insulation is reusable in many applications.

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. Dow assumes no obligation or liability for the information in this document. NO EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY DOW. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

CAUTION: This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

**WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.**

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.





# HIGH VELOCITY<sup>®</sup> INSULATION ADHESIVE III

HIGH VELOCITY INSULATION ADHESIVE III (17B)

Order No. A176\*

\*This order number is for one case of four (dual set) cartridges.  
Contact Customer Service for information on bulk packaging sizes.

## DESCRIPTION & APPLICATION

High Velocity Insulation Adhesive-III (HVIA-III) is highly elastomeric one-step (two part), VOC compliant, all-purpose foamable adhesive that contains no solvents and sets in minutes. HVIA-III is packaged in four (4) fifteen hundred milliliter (1500 ML) component caulk gun cartridges (dual set) per case. This static-mixing tip Application Method decreases material waste and provides a coverage rate of between four hundred and six hundred (400 - 600) square feet (37 - 56 m<sup>2</sup>) per carton (See limitations below). In high production applications, a multi-port two-component static-mixing tip adhesive applicator is used to insure proper application and wetting of the substrate/board before the adhesive ribbons can skin over.

HVIA-III is applied directly to the properly prepared, dry (not damp), clean substrate which is defined as, but is not limited too: free of dirt; dust; debris; oils; loose and/or embedded gravel; unadhered coatings; deteriorated existing membrane; any other contaminates that may result in a surface that is not sound or is un-even and affects the adhesion of the HVIA-III and adhesive to the substrate and insulation board.

The HVIA-III ribbon size is one-half (½") inch (13 mm) or the amount of adhesive and ribbon size necessary to provide positive contact between the substrate and the Approved thermal insulation or cover board (rigid board). On-site applicator must make job-specific application determinations to ensure Soprema acceptable bonded boards.

The FM Approvals Field Roof Area pattern is twelve (12") inches (305 mm) o.c. FM Approvals Perimeter and Corner Patterns depend upon the individual project building velocity pressures as determined by the most current ASCE Design Calculation Document. Contact Soprema for these Patterns and for Approved insulation adhesive patterns for Warranty Wind Rider Projects.

## APPROVED INSULATIONS\* & DECK SUBSTRATES

- Sopraboard, one-eighth (1/8") inch (3.2 mm) minimum
- High Density Wood Fiber Board (HDWFB) coated six sides, one-half (½") inch (13 mm) minimum
- HDWFB, one-half (½") inch (13 mm) minimum
- Polyisocyanurate, one and one-half (1 ½") inch (38 mm) minimum
- Polystyrene, one (1") inch (25 mm) minimum
- Plywood, one-half (½") inch (13 mm) minimum, wood plank, three-quarter (¾") inch (19 mm) minimum or structural use panels, seven-sixteenth (7/16") inch (11 mm) minimum
- ASTM C 1177 or C 1278 gypsum board, one-quarter (¼") inch (6.4 mm) minimum
- Vapor retarders, Sopralene 180 SP 3.5mm (heat welded only); Elastophene HD, Elastophene 180 Sanded, Sopralene 180 Sanded, Soprabase, Modified Sopra G, hot mopped or adhered with Soprema cold adhesive to properly prepared, clean, dry and primed (where required) substrates or these membranes and base sheets are mechanically fastened to acceptable substrates prior to the application of the cold applied roof assembly. Contact Soprema for special installation requirements; see published Specifications and Approved Details.



# HIGH VELOCITY INSULATION ADHESIVE III PAGE 2

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## APPROVED INSULATIONS\* & DECK SUBSTRATES

\*NOTE: When insulation and cover boards are thicker than three-quarter ( $\frac{3}{4}$ " ) inch (19 mm), the board size is maximum four feet by four feet (4' x 4') feet (1.2m x 1.2m). Cover boards one-half ( $\frac{1}{2}$ ) inch (13 mm) or less can be installed in four feet by eight (4' x 8') feet (2.4m x 1.2m) dimensions.

### STRUCTURAL DECKS:

1. FM Approvals Listed Structural Deck types including concrete, gypsum, cementitious wood fiber and wood.
2. FM Approvals Listed Steel Deck types require a mechanically fastened and approved thermal barrier prior to using the HVIA material to adhere the next layer of insulation or cover board.

Contact Soprema for special installation requirements. See published Specifications and Approved Details.

NOTE: DO NOT PRIME SUBSTRATES WITH ASPHALTIC PRIMERS. HIGH VELOCITY INSULATION ADHESIVE PRIMER MAY BE REQUIRED WHEN A SUBSTRATE IS HIGHLY ABSORBENT.

## LIMITATIONS DURING APPLICATIONS

Coverage rates may change and require greater amounts of adhesive when uneven or irregular substrates are encountered. Eliminate uneven surfaces to ensure positive contact between the insulation board and substrate. As adhesive is applied, place insulation board into wet adhesive. Do not allow the adhesive to rise or skin over before installing the board. Apply continuous and immediate pressure across the entire roof insulation board surface to ensure full contact with the ribbon adhesive and substrate surface. Weight may be needed on the board surface until the adhesive ribbons are cured. Foot traffic should be avoided over the insulation boards as it can break the curing process bond between the freshly applied ribbon adhesive and the deck substrate surfaces and/or additional insulation layer surfaces(s). The length of time (Set time) until the adhesive provides sufficient bond to support foot traffic will vary depending on environmental conditions such as ambient temperature, humidity, wind, clouds, sun, etc. Moisture cured adhesive has a slow set-time in conditions with low ambient moisture content such as arid or cold climates while the adhesive cures quickly in warm, moist conditions. However typical set-time will vary from thirty (30) minutes to several hours. Do not apply to a wet or damp surface.

STORAGE: Keep temperature of contents between 65°F - 85°F (18°C – 29°C) 24 hours prior to use. Do not store in direct sunlight or high temperatures 90°F (32°C) and higher.

Shelf life is eight (8) months from the date of manufacture when unopened and properly stored.

## APPROVALS

See Underwriters Laboratories Inc. File #R11436, FM Approvals, ICC/ES, Miami-Dade County or Florida Building Code Product Approval Listings for current Approved Roof Assembly combinations.

## WARRANTY

Contact your local SOPREMA representative for project warranty offerings.