



**SOPREMA®**

PVC ROOFING GUIDE

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## ABOUT THIS PVC ROOFING GUIDE

This PVC Roofing Guide contains excerpts from the PVC Technical Manual and the General Requirements. It is intended to provide contractors with a quick reference.

In order to keep the size of this “pocket” guide relatively small, a number of decisions were made about what information to include and what information to exclude. If there is a discrepancy between the PVC Technical Manual and/or the General Requirements and this guide, the PVC Technical Manual and the General Requirements will control.

If this guide does not provide you with the information you require, please consult the PVC Technical Manual and/or the General Requirements or contact SOPREMA's Technical Department at (330) 334-0066.

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4.3a PVC ACCESSORIES



# 1.0 GENERAL

## 1.1 CHEMICAL RESISTANCE

- Inadvertent exposure to foreign materials, debris and other contaminants should be addressed by proper removal and cleaning.
- The following roofing materials are incompatible with SENTINEL PVC:
  - Asphalt-based roofing and flashing products
  - Coal tar pitch
  - Un-faced extruded and expanded polystyrene.
- These incompatible materials must be eliminated or separated from direct contact with bare PVC membranes and flashings.
- Contact SOPREMA for additional information.

## 1.2 PVC CLEANING PROCEDURES

### 1.2.1 HOUSEHOLD CLEANER

General:

- Follow all safety and environmental regulations and requirements regarding the use of household cleaners.

- SENTINEL PVC roofing may be cleaned using common household cleaners such as Simple Green, Formula 409, Spic and Span or other mild household cleaners.
- Pre-rinse the area using a garden hose.
- Follow the household cleaner instructions; dilute the cleaner using clean water as required. Do not pour undiluted cleaner directly onto roof surface.
- Clean the area using a cloth, sponge, soft bristle brushes or push brooms.
- Where necessary, use a general purpose scrubbing pad and cleaner to remove stubborn contaminants. Do not use sharp metal tools or wire brushes.
- Rinse the area using a garden hose directed downward to prevent water from entering equipment, walls, windows or roof flashings.
- Repeat cleaning as necessary.
- Contact SOPREMA for additional information

### 1.2.2 SOLVENT CLEANER

General:

- Follow all safety and environmental

regulations and requirements regarding the use of cleaners.

- PVC membranes may be cleaned using solvents such as methylethylketone (MEK).
- Do not pour solvent directly onto roof surface.
- Clean the area using a damp cloth soaked in solvent.
- Where necessary, use a general purpose scrubbing pad and solvent to remove contaminants. Do not use sharp tools or wire brushes.
- Allow the solvent to evaporate, or wipe the surface using a dry cloth where necessary.
- Repeat cleaning as necessary.
- Contact SOPREMA for additional information.

## **1.3 HOT AIR WELDING PROCEDURES**

### **1.3.1 AUTOMATIC WELDING**

General:

- Automatic hot air welding equipment is required to achieve consistent watertight membrane seam welds.
- Refer to hot air welding equipment manufacturer's published operating instructions and follow all applicable requirements and recommendations.

### Preparation:

- Ensure a safe and consistent power supply is available and maintained for the welding equipment throughout the installation.
- Before welding roofing seams, ensure the area within the seams is dry, clean and free of debris or contaminants.
- Clean the PVC surfaces as necessary.
- Conduct test welds before the roofing installation to ensure equipment settings consistently achieve satisfactory welded seams. Repeat test welds when the welder has been turned off or re-started, and as environmental conditions change significantly as temperature and humidity effect the quality of welds.
  - Use clean, dry PVC cut into strips as necessary to create sample side laps to weld and test.
  - Set the welding equipment temperature and speed settings, adjust as necessary, to achieve satisfactory welded seams. Allow welded sample to cool.
  - Cut the welded sample in 1 to 2 in wide test strips.
  - Peel the test strips apart at the welds.
  - A satisfactory weld is achieved when the PVC consistently and uniformly delaminates

from the reinforcing fabric and minimum welded width of 1-1/2 in.

#### Application:

- Position and align the automatic welder at the lap. Ensure the press wheel is positioned over the edge of the lap being welded and the seam plates are not located within the welding area.
- Set the temperature and speed settings as determined from sample test welds.
- Insert the welding shoe 2 in within the lap to ensure a minimum 1-1/2 in continuous weld is always produced.
- When the weld is complete and the welding shoe is disengaged, examine the welding shoe for residue.
- Ensure the welding nozzle remains clean. Remove residue accumulations from the nozzle using a wire brush.

#### Inspection:

- Carefully probe all seams and t-joints using a rounded-tip probe such as a cotter pin puller. Prevent damage to the membrane during inspection.
- Repair all open seams and damage found during inspection.
- Ensure the membrane is sealed watertight each day.

- When seam weld quality is suspect, inspect laps using destructive examination methods.
  - Cut 2 in wide weld samples across the seam 6 in on either side of the weld (2 in x 12 in wide strip).
  - Cut a minimum of three (3) sample welds in each suspect area.
  - Peel the test strips apart at the welds.
  - A satisfactory weld is achieved when the PVC consistently and uniformly delaminates from the reinforcing fabric.
  - Install a PVC patch, of same membrane thickness over the sample areas ensuring the outer edges of the patch extend a min. of 2 in from all sides of the cut/sample area and hot air welded into place.

### 1.3.2 HAND WELDING

General:

- Hand-held hot air welding equipment should be used where automatic welding equipment is not possible.
- Hand held welding equipment should be used to weld PVC to vinyl coated metal, small detail work, repairs and other work not accessible to automatic welding equipment.
- Refer to hot air welding equipment manufacturer's published operating instructions

and follow all applicable requirements and recommendations.

#### Preparation:

- Ensure an adequate and consistent power supply for welding equipment is provided and maintained at all times.
- Before welding roofing seams, ensure the area within the seams is dry, clean and free of debris and contaminants.
- Clean the PVC surfaces as necessary.
- Conduct test welds during the roofing installation to ensure equipment settings consistently achieve satisfactory welded seams.

#### Application:

- Insert the welding nozzle 2 in or more within the membrane lap and heat both surfaces sufficiently to fuse the lap. A pre-weld of the lap is recommended.
- While still hot, use a silicone roller and apply sufficient pressure to ensure the two membranes are pressed and fused together.
- Consistently weld along the lap to ensure a minimum 1-1/2 in continuous weld is produced.
- Ensure the welding nozzle remains clean. Remove residue accumulations from the nozzle using a wire brush.

### Inspection:

- Carefully probe all seams and t-joints using a rounded-tip probe such as a cotter pin puller. Prevent damage to the membrane during inspection.
- Repair all open seams and damage found during inspection.
- Ensure the membrane is sealed watertight each day.
- When seam weld quality is suspect, inspect laps using destructive examination methods.
  - Cut 2 in wide weld samples across the seam 6 in on either side of the weld (2 in x 12 in wide strip).
  - Cut a minimum of three (3) sample welds in each suspect area.
  - Peel the test strips apart at the welds.
  - A satisfactory weld is achieved when the PVC consistently and uniformly delaminates from the reinforcing fabric.
  - Install a PVC patch, of same membrane thickness over the sample areas ensuring the outer edges of the patch extend a min. of 2 in. from all sides of the cut/sample area and hot air welded into place.

## 2.0 PVC MEMBRANES

### 2.1 GENERAL CONSIDERATIONS

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, dew point temperature, wind, cloud cover and sun that may have an effect on materials and application.
- Follow applicable cold weather installation/storage instructions when installing PVC membranes with ambient temperatures below 40°F (4°C). During extended periods of cold weather, PVC materials should be stored in a warm, heated storage protected area for optimum performance.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Water-based adhesive should not be stored or used when temperatures are below 40°F (4°C).
- Before beginning application, unroll the PVC membrane and allow it to relax.
- At the end of the field sheet where it terminates at roof edges, walls and curbs, fasten the membrane with appropriate fasteners and seam plates.

- Secure the membrane to the deck or vertical surface at the base of the upstand.
- Clean all laps as necessary before welding.
- Hot air weld all laps watertight.
- Carefully probe all seams and t-joints using a rounded-tip probe such as a cotter pin puller. Prevent damage to the membrane during inspection.
- Repair all open seams and damage found during inspection.
- Ensure the membrane is sealed watertight each day.
- When seam weld quality is suspect, inspect laps using destructive examination methods.
  - Cut 2 in wide weld samples across the seam 6 in on either side of the weld (2 in x 12 in wide strip).
  - Cut a minimum of three (3) sample welds in each suspect area.
  - Peel the test strips apart at the welds.
  - A satisfactory weld is achieved when the PVC consistently and uniformly delaminates from the reinforcing fabric.
  - Install a PVC patch, of same membrane thickness over the sample areas ensuring the

outer edges of the patch extend a min. of 2 in. from all sides of the cut/sample area and hot air welded into place.

- Inspect the membrane each day to ensure the membrane is adhered to the substrate.
- Each day, repair all un-adhered voids, wrinkles, open and damaged laps, and all other deficiencies before proceeding.
- Temporary night seals with compatible materials and sealants are required to seal membrane terminations watertight. Remove all temporary night seals before resuming the installation.

## **2.2 ADHERED PVC MEMBRANES**

### **2.2.1 ADHERED PVC FIELD MEMBRANES**

General:

- SENTINEL PVC field membranes may be adhered for new and roof recover applications.
- Adhered SENTINEL PVC field membranes are glass or polyester reinforced, 60 or 80 mils thick, and are bare or fleece-backed.
- Refer to safety data sheets and product data sheets for additional information.
- DO NOT INSTALL fleece backed membranes where the fleece is wet/damp from improper

storage or exposure to moisture.

Application:

- **SENTINEL S BONDING ADHESIVE:**
  - For use with bare-backed PVC only.
  - Use a minimum 3/8 in nap, solvent resistant roller to apply adhesive. Dip the roller into the adhesive to fully coat the roller. Do not pour adhesive onto the substrate and do not allow adhesive to pool or puddle on the substrate.
  - Evenly apply adhesive to clean, dry and prepared substrate while applying adhesive to the back of the bare PVC membrane.
  - Prevent adhesive from contaminating the PVC lap seams to be welded.
  - Apply uniform adhesive coverage as indicated on product data sheet. Appropriate coverage rate is 60 square feet/gallon (substrate and membrane) Adjust the application rate based on environmental conditions, substrate roughness and porosity.
  - Allow the adhesive on both surfaces to become tacky but not wet. The adhesive should not transfer to the finger or string when touched.

- Prevent dust and debris from contaminating adhesive.
- During humid weather, and during periods when the temperature is near the dew point temperature, examine surfaces closely for condensation.
- Do not install if condensation forms on the applied adhesive surfaces. During humid conditions condensation may form on the adhesive surface due to evaporative cooling that occurs when the solvent evaporates.
- Mate the membrane to the substrate for adhesive-to-adhesive contact.
- Apply pressure using a weighted roller or push broom to ensure complete adhesion and prevent wrinkles and air bubbles.
- SENTINEL H2O BONDING ADHESIVE:
  - For use with bare and fleece-backed PVC.
  - Use a minimum 3/8 in nap, roller to apply adhesive. Dip the roller into the adhesive to fully coat the roller. Do not pour adhesive onto the substrate and do not allow adhesive to pool or puddle on the substrate. Apply adhesive to the substrate only.
  - Apply uniform adhesive coverage as

indicated on product data sheet.

Approximate coverage rate is 140 - 180 square feet per gallon (substrate only) for bare-back membrane and 100 - 120 square feet per gallon for fleece back membrane (substrate only). Adjust the application rate based on environmental conditions, substrate roughness and porosity.

- Prevent adhesive from contaminating the PVC lap seams to be welded.
- Mate the membrane to the substrate while adhesive is still wet.
- Apply pressure using a weighted roller or push broom to ensure complete adhesion and prevent wrinkles and air bubbles.
- Do not apply SENTINEL H2O Bonding Adhesive when the temperature is at or below 40°F (4°C) or when the temperature is forecast to be at or below 40°F (4°C) during the 48 hour period following the application of SENTINEL H2O Bonding Adhesive.
- Do not apply SENTINEL H2O Bonding Adhesive when the temperature is at or below the dew point temperature. Closely monitor adhesion when temperatures are near the dew point temperature, typically in

the morning and evening hours as well as periods of high humidity.

- ICP POLYURETHANE FOAM SPATTER ADHESIVE:

- For use with fleece-backed PVC only.
- Refer to the adhesive manufacturer's published instructions.
- Spray-apply the foam adhesive to clean, dry and prepared compatible substrates. Apply from adhesive to substrate only.
- Ensure the adhesive spray pattern provides for complete membrane adhesion in accordance with adhesive manufacturer's requirements.
- Prevent adhesive over-spray from contaminating the PVC lap seams to be welded or the roof top equipment, building and vehicles near the installation.
- Examine the adhesive in accordance with adhesive manufacturer's requirements, ensure the adhesive does not dry or skin over, prior to membrane installation.
- Mate the membrane to the substrate while applying pressure using a push broom to ensure complete adhesion and prevent wrinkles and air bubbles.

## 2.2.2 ADHERED PVC FLASHINGS

General:

- SENTINEL PVC flashing membranes may be adhered for new and roof recover applications.
- Adhered SENTINEL PVC flashing membranes are glass or polyester reinforced, 60 or 80 mils thick, and are bare-backed.
- Refer to safety data sheets and product data sheets for additional information.

Application:

• Flashing application using SENTINEL S BONDING ADHESIVE:

- For use with bare-backed PVC only.
- Use a minimum 3/8 in nap, solvent resistant roller or brush to apply adhesive. Dip the roller into the adhesive to fully coat the roller.
- Evenly apply adhesive to clean, dry and prepared substrate while applying adhesive to the back of the bare-backed PVC membrane.
- Prevent adhesive from contaminating the PVC lap seams to be welded.
- Apply uniform adhesive coverage as indicated on product data sheet. See page 18.

Adjust the application rate based on environmental conditions, substrate roughness and porosity.

- Allow the adhesive on both surfaces to become tacky but not wet. The adhesive should not transfer to the finger or string when touched.
  - Prevent dust and debris from contaminating adhesive.
  - During humid weather and during periods when the temperature is near the dew point temperature, examine surfaces closely for condensation.
  - Do not install if condensation forms on the adhesive surface. During humid conditions condensation may form on the adhesive surface due to evaporative cooling that occurs when the solvent evaporates.
  - Mate the membrane to the substrate for adhesive-to-adhesive contact.
- Apply pressure using a hand-held roller to ensure complete adhesion and prevent wrinkles and air bubbles.
  - Install butyl water cutoff, fasten and seal the top leading edge to vertical surfaces.

- Clean laps as necessary before welding.
- Hot air weld all flashing laps.

## 2.3 MECHANICALLY FASTENED PVC FIELD MEMBRANES

General:

- SENTINEL PVC field membranes may be mechanically fastened for new and roof recover applications.
- Mechanically fastened SENTINEL PVC field membranes are polyester reinforced, 60 or 80 mils thick, and are bare or fleeced-backed.

Application:

- Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- Remove all wrinkles from the sheet, but do not overstretch the membrane too tight during installation.
- Ensure 6 in side-lap and end-lap widths are maintained.
- Starting at one end of the sheet, install the mechanical fasteners within the 6 in side lap. Avoid installing plates welding area of the lap. Locate the center of the seam plates 2 in from

the edge of the sheet. Refer to the fastener line printed 2 in from the edge of the sheet.

- When fasteners require repositioning, ensure the repositioned plate is not located in the weld area of the laps.
- Ensure fastener spacing meets the specified wind uplift resistance requirements.
- Do not over-drive fasteners. Install fasteners as necessary to firmly set the fastener and seam plate tight against the sheet. Prevent wrinkles from forming in the sheet as the fasteners are installed.
- At the end of the sheet where it terminates at roof edges, walls and curbs, fasten the perimeter of the membrane with appropriate fasteners and seam plates to the deck or vertical surface at the base of the upstand.
- Clean laps as necessary before welding seams.
- Hot-air weld all laps. Do not tack weld membrane prior to using automatic welder at side laps.
- When rows of fasteners are installed through the membrane at perimeter and corner enhancements, weld a minimum 8 in wide sealing strip over the fasteners to seal the fasteners watertight.

## 2.4 INDUCTION WELDED PVC MEMBRANES

### 2.4.1 INDUCTION WELDED PVC FIELD MEMBRANES

General:

- SENTINEL PVC field membranes may be induction welded for new and roof recover applications.
- Induction welded SENTINEL PVC field membranes are polyester reinforced, 60 or 80 mils thick, and are bare-backed.
- The induction welding tool, fasteners and 3 in induction welding stress plates must be approved together for use with the specified SENTINEL PVC membrane.
- The fasteners and stress plates are secured to the roof deck, then the SENTINEL PVC field membrane is unrolled over the stress plates and induction welded to the plates.
- Refer to the fastener manufacturer's installation instructions and induction welding tool operating instructions.
- Refer to safety data sheets and product data sheets for additional information.

### Preparation:

- Examine all roof decks, wall substrates, nailers and other conditions at membrane terminations, transitions and penetrations.
- Ensure the roof deck and all other substrate conditions are acceptable to install the appropriate fasteners.
- Test induction welding equipment by induction welding a sample of PVC to stress plates to ensure settings are satisfactory. Allow the plate to cool and attempt to pull the PVC sample from the stress plates. For a satisfactory welded plate, the PVC should delaminate.

### Application:

- Install fasteners and stress plates as required for wind uplift requirements.
- Fasten the area of roofing that is to be induction welded to all plates the same day.
- Avoid locating membrane side and end laps over the stress plates. Refer to the induction welding tool operating instructions where multiple layers of membrane at seams require induction welding.
- Ensure the side and end laps are a minimum of 3 in to accommodate minimum 1-1/2 in welded lap seams.

- Clean side and end laps as necessary before welding seams.
- Remove all membrane wrinkles.
- Hot air weld all laps.
- Ensure the induction welding plates and bottom surface of the PVC membrane are dry and free of condensation before beginning induction welding.
- Locate each stress plate beneath the PVC membrane. Center the induction welder over each plate and activate the induction welding tool. Do not move the induction welder during the induction welding cycle.
- Once the weld is complete, **IMMEDIATELY** place a specialized magnet directly over each plate. Allow the magnets to remain in place until the plates have cooled.
- Where induction welds are suspect, examine the membrane attachment using a suction plate or plunger.
- At the end of the sheet where it terminates at roof edges, walls and curbs, fasten the perimeter of the membrane with appropriate fasteners and seam plates to the deck or vertical surface at the base of the upstand.

## 2.4.2 INDUCTION WELDED PVC FLASHING MEMBRANES

General:

- SENTINEL PVC flashing membranes may be induction welded for new and roof recover applications.
- Induction welded SENTINEL PVC field membranes are polyester reinforced, 60 or 80 mils thick, and are bare-backed.
- The induction welding tool, fasteners and 3 in induction welding stress plates must be approved together for use with the specified SENTINEL PVC membrane.
- The fasteners and stress plates are secured to the flashing substrate, then the SENTINEL PVC flashing membrane is applied over the 3 in stress plates and induction welded to the plates.
- Refer to the fastener manufacturer's installation instructions and induction welding tool operating instructions.
- Refer to safety data sheets and product data sheets for additional information.

Preparation:

- Examine curbs, wall substrates, nailers and all other flashing substrate conditions.

- Ensure the flashing substrate conditions are acceptable to install the appropriate fasteners.
- Test induction welding equipment by induction welding a sample of PVC to stress plates to ensure settings are satisfactory. Allow the plate to cool and attempt to pull the PVC sample from the stress plates. For a satisfactory welded plate, the PVC should delaminate.

#### Application:

- Install fasteners and induction welding plates to the vertical substrate a maximum of 12 in on-centers in both directions.
- Fasten the area of roofing that is to be induction welded to all plates the same day.
- Cut the PVC membrane to the desired length to conform to flashing conditions.
- Loose lay the PVC membrane over the flashing substrate and fasten at the leading top edge, or as required to secure the flashing in place.
- Ensure the side laps are a minimum of 3 in to accommodate minimum 1-1/2 in welded lap seams.
- Avoid locating membrane side and end laps over the stress plates. Refer to the induction welding tool operating instructions where multiple layers of membrane at seams

require induction welding.

- Clean side and end laps as necessary before welding seams.
- Remove all membrane wrinkles.
- Hot air weld all side laps.
- Ensure the induction welding plates and bottom surface of the PVC membrane are dry and free of condensation before beginning induction welding.
- Locate each stress plate beneath the PVC membrane. Center the induction welder over each plate and activate the induction welding tool. Do not move the induction welder during the induction welding cycle.
- Once the weld is complete, **IMMEDIATELY** place a specialized magnet directly over each plate. Allow the magnets to remain in place until the plates have cooled.
- Where induction welds are suspect, examine the membrane attachment using a suction plate or plunger.
- Install butyl water cutoff, fasten and seal the top leading edge to vertical surfaces.

## 2.5 DETAILS

### 2.5.1 PVC FIELD MEMBRANE DETAILS

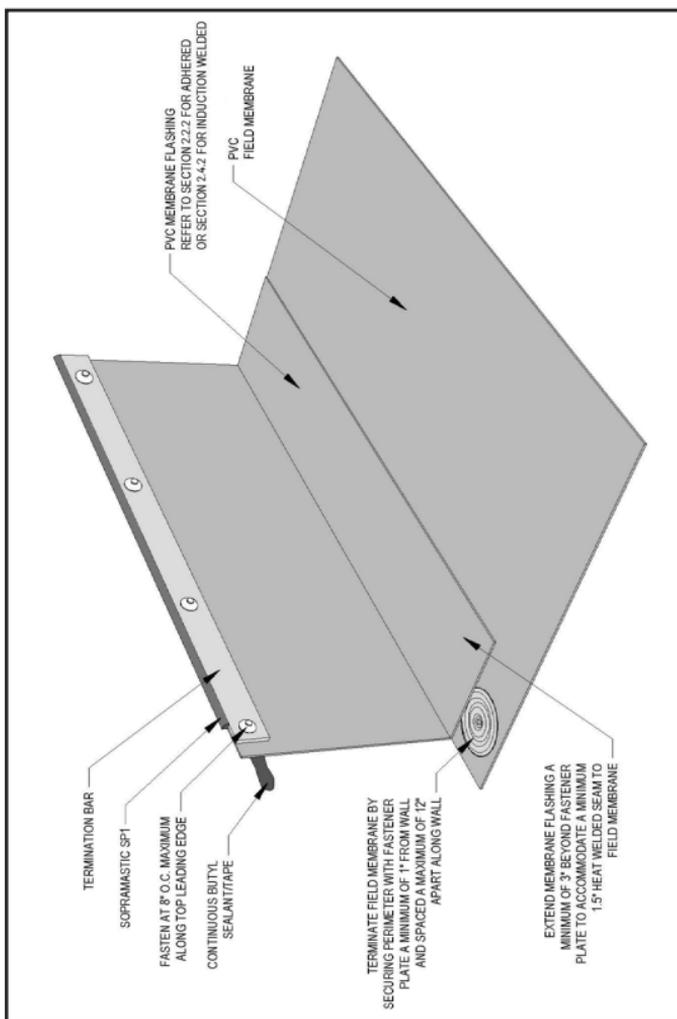


Figure 2.5.1a PVC Field Membrane At Wall/Curb With Horizontal Perimeter Fastening

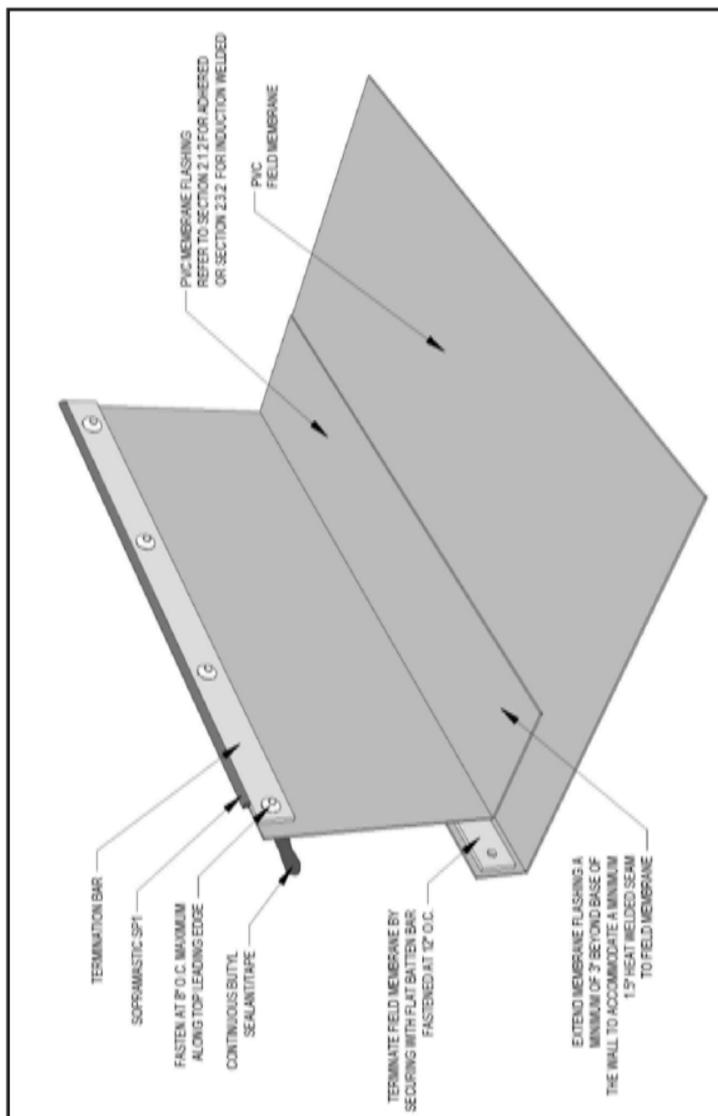


Figure 2.5.1b PVC Field Membrane At Wall/Curb With Vertical Perimeter Fastening

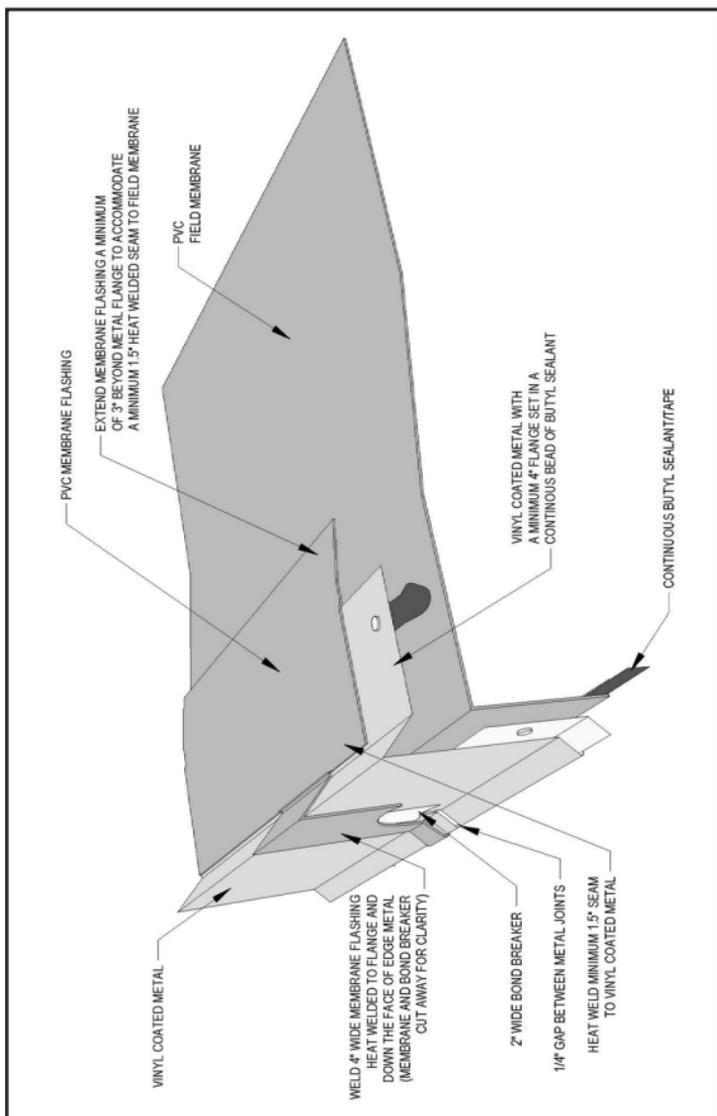


Figure 2.5.1c PVC Field Membrane At Gravel Stop With Vinyl Coated Metal Fascia

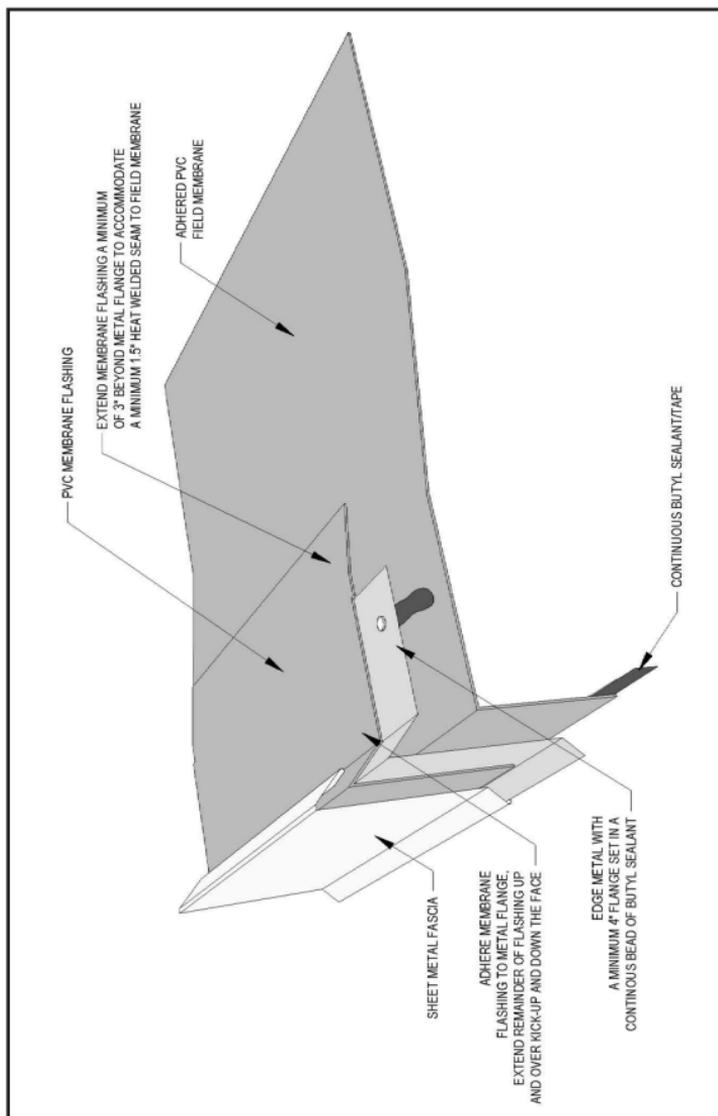


Figure 2.5.1d PPVC Field Membrane At Gravel Stop With Sheet Metal Fascia

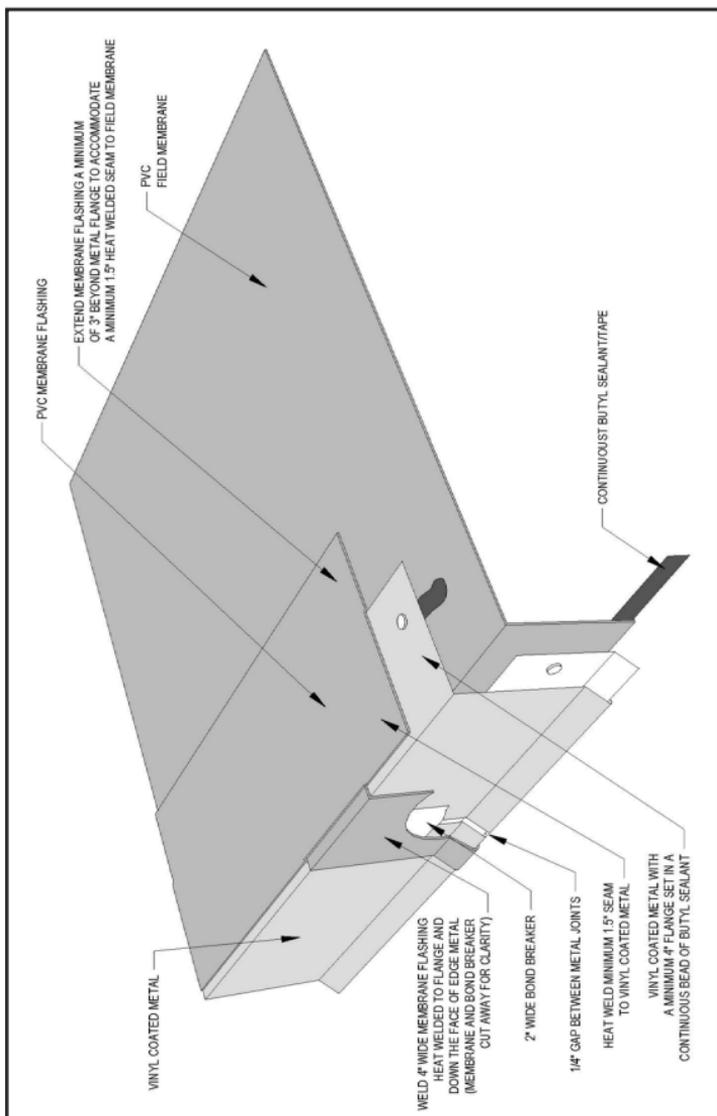


Figure 2.5.1e PVC Field Membrane At Drip Edge

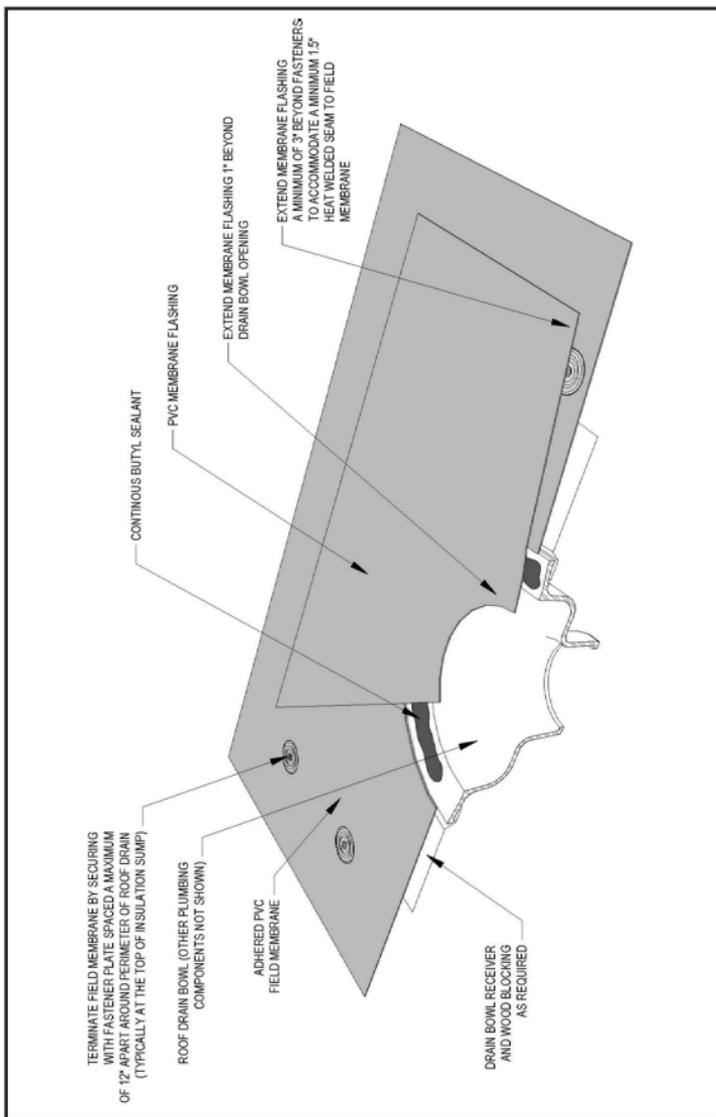


Figure 2.5.1f PVC Field Membrane At Roof Drain

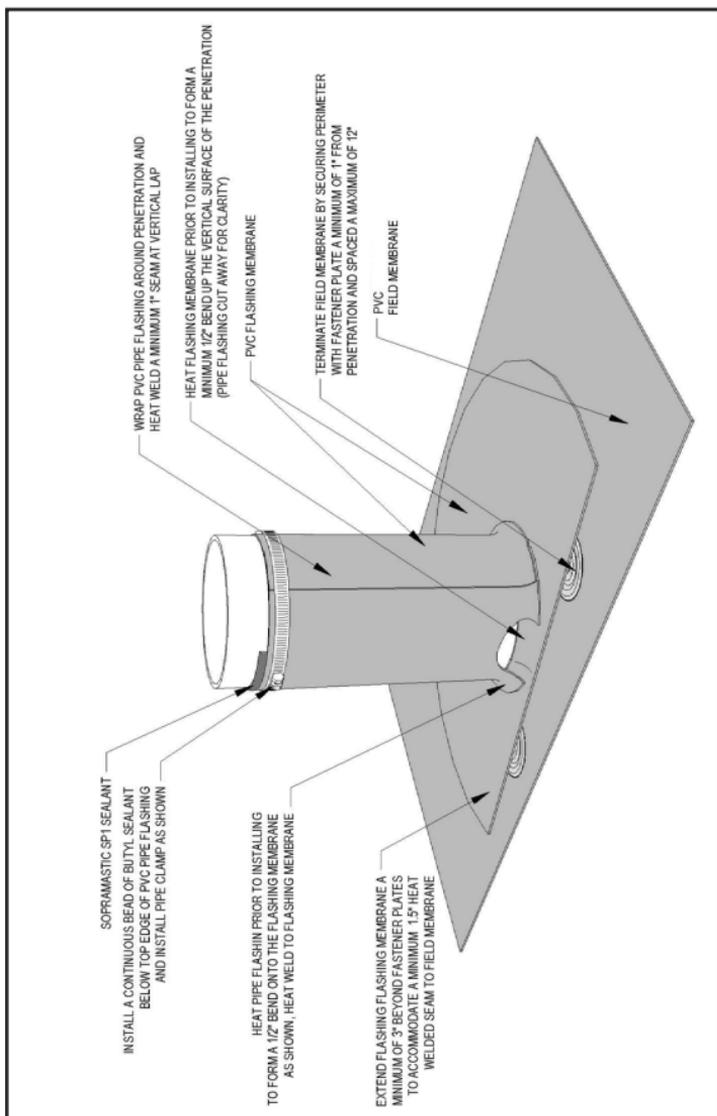


Figure 2.5.1g PVC Field Membrane At Penetration With Field Fabricated Pipe Flashing

## 2.5.2 ADHERED PVC FLASHING MEMBRANE DETAILS

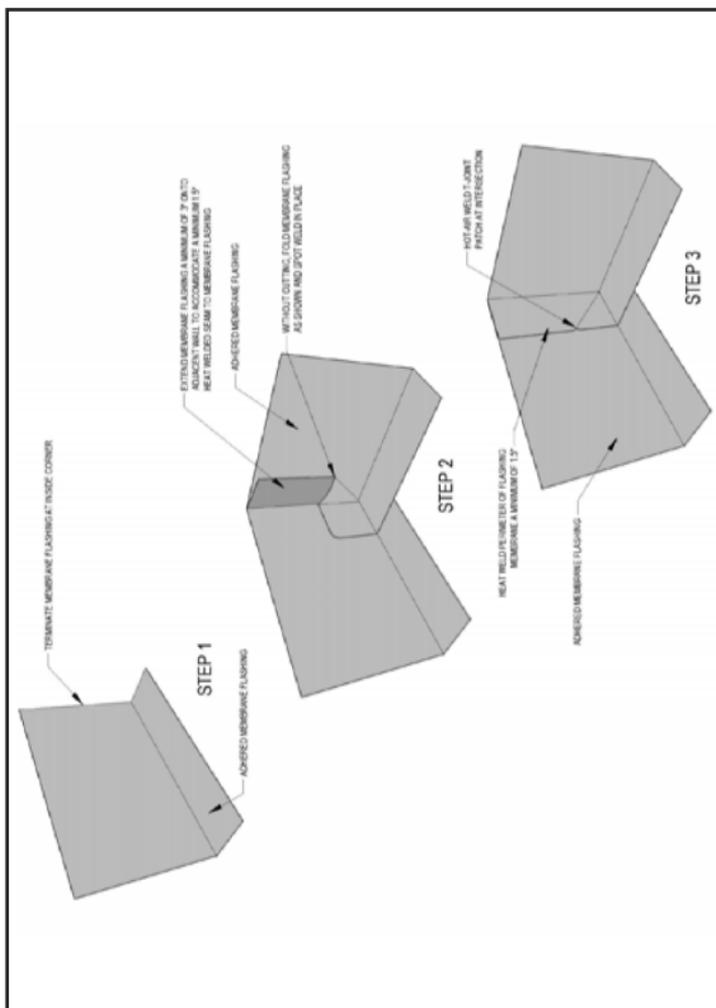


Figure 2.5.2a Adhered PVC Flashing Membrane At Field Fabricated Inside Corner

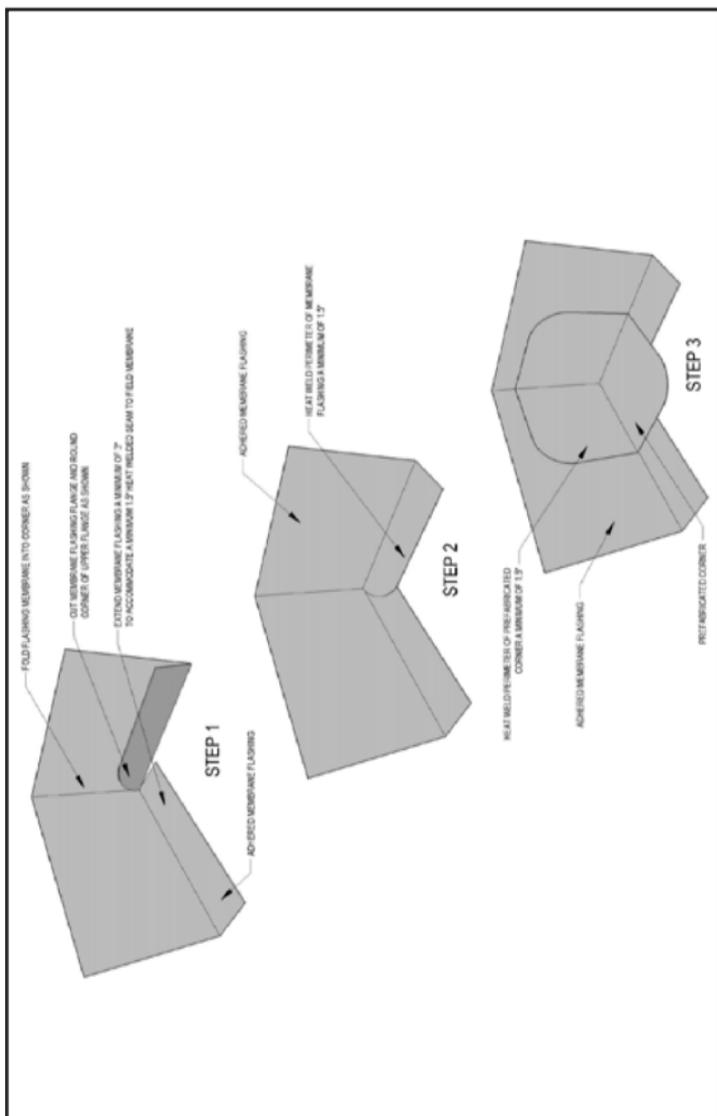


Figure 2.5.2b Adhered PVC Flashing Membrane At Prefabricated Inside Corner

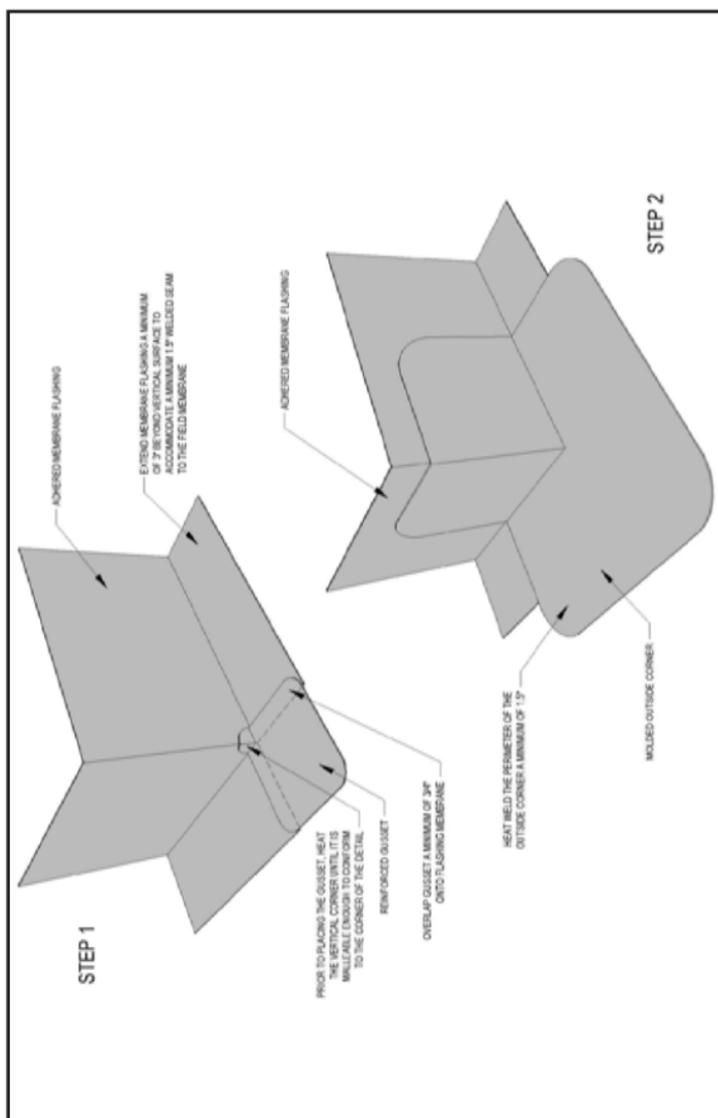


Figure 2.5.2c Adhered PVC Flashing Membrane At Molded Outside Corner

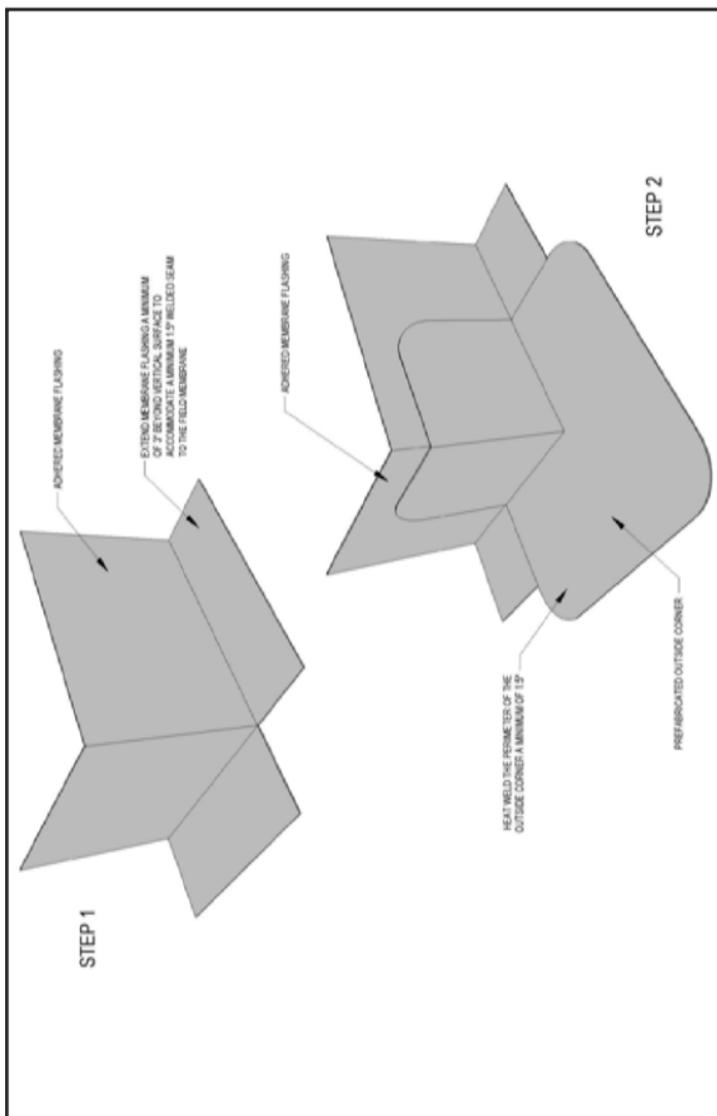


Figure 2.5.2d Adhered PVC Flasing Membrane At Prefabricated Outside Corner

## 2.5.3 INDUCTION WELDED PVC FLASHING MEMBRANE DETAILS

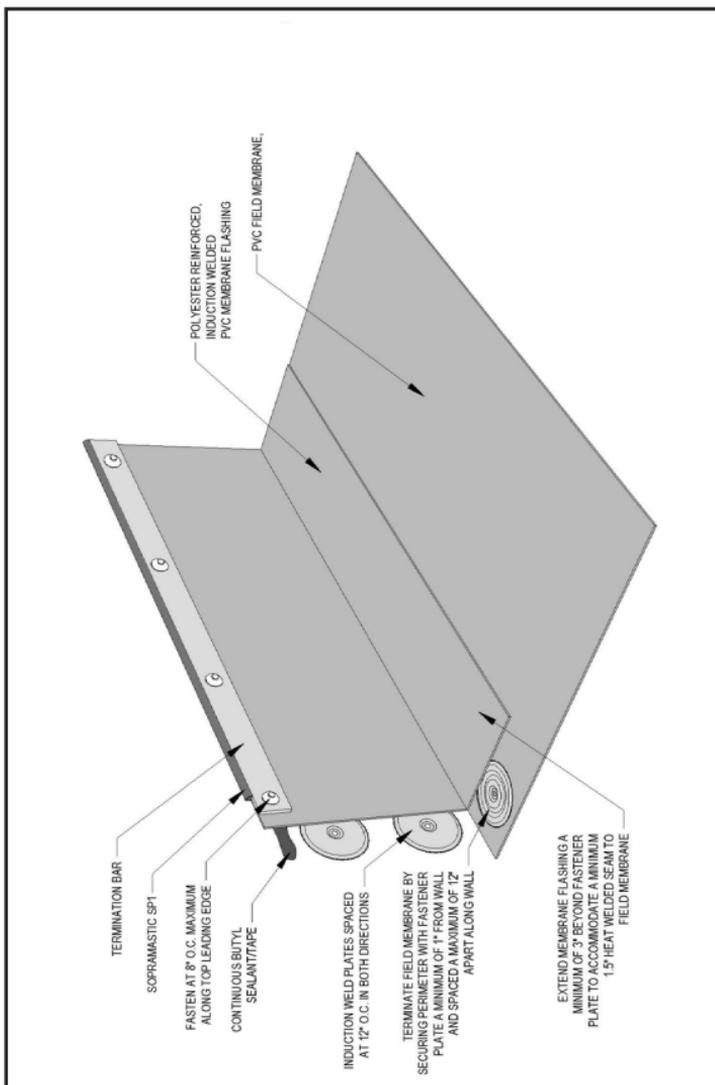


Figure 2.5.3a Induction Welded PVC Flashing Membrane At Wall/Curb With Horizontal Perimeter Fastening

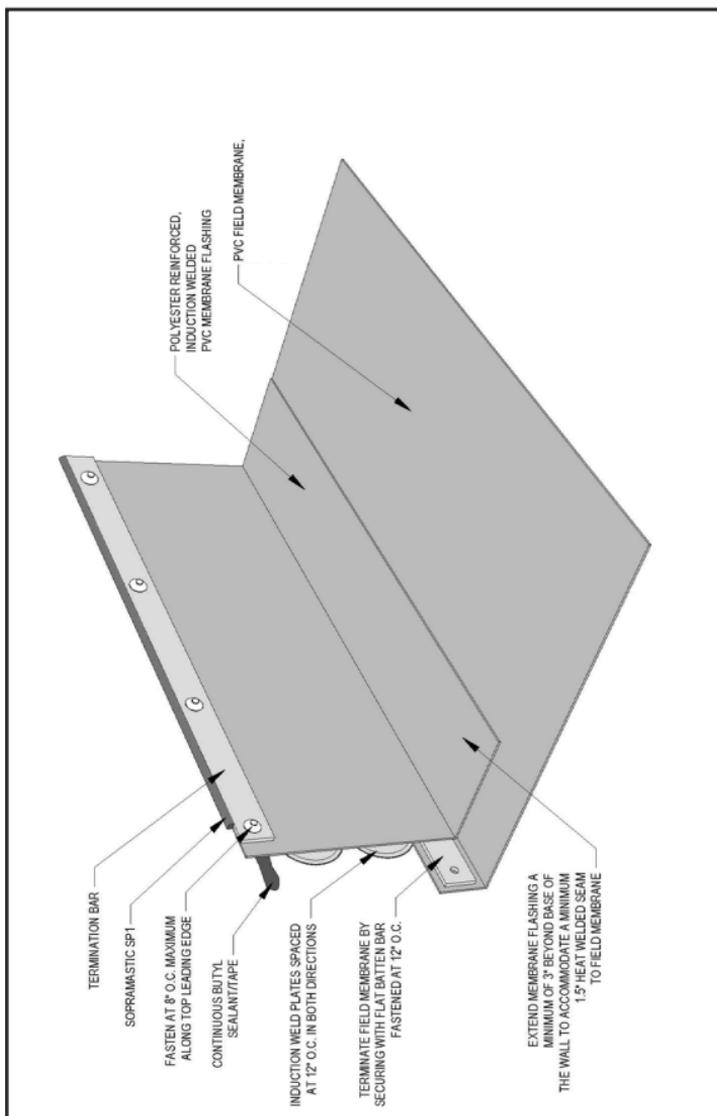


Figure 2.5.3b Induction Welded PVC Flashing Membrane At Wall/Curb With Vertical Perimeter Fastening

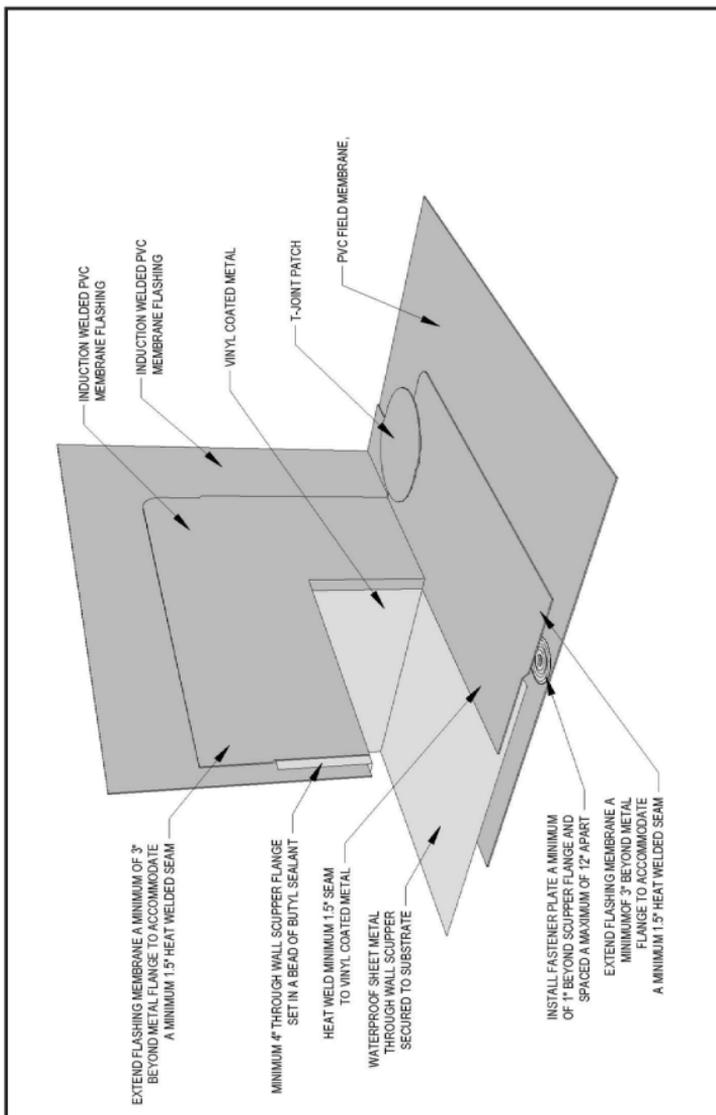


Figure 2.5.3c Induction Welded PVC Flashing Membrane At Through Wall Scupper

## 3.0 PMMA/PMA LIQUID-APPLIED FLASHING FOR PVC ROOFING

### 3.1 GENERAL CONSIDERATIONS

- ALSAN RS 230 or 260 LO Flash liquid applied, reinforced flashing systems are an acceptable alternate to PVC flashing membranes to form waterproof flashings for roof transitions, terminations and penetrations.
- ALSAN RS liquid applied flashing systems may be used with adhered PVC membranes. Contact SOPREMA for use with mechanically fastened or induction welded PVC membranes.
- Refer to ALSAN RS detail drawings, product data sheets, safety data sheets and published guidelines for additional installation, storage and handling requirements.

#### Preparation:

- Ensure all substrates are sound, dry clean and free of dust, debris, and adhesives.
- PVC membrane preparation:
  - Ensure the PVC field membrane is fastened to the substrate at all membrane terminations before liquid applied flashing is installed.

- Install a welded PVC cover-strip over fasteners where applicable. Ensure cover-strip is welded with a minimum 1-1/2 in weld, with no loose ends or open laps.
- Ensure PVC membrane and substrates are dry, clean and free of asphalt and all bitumen-based products. Do not allow bare-backed PVC to come in contact with asphalt or bitumen-based products.
- Lightly abrade the PVC membrane surface using a scouring pad only where liquid applied flashing is to be applied.
- Wipe the PVC membrane surface clean using ALSAN RS Cleaner, and allow to fully dry.
- Metal substrate preparation:
  - Sand, grind, blast or otherwise abrade approved metal surfaces to near-white finish and wipe clean with ALSAN RS Cleaner.
- Concrete and masonry substrate preparation:
  - Substrates should be smooth and free of spalls, voids, blow holes and loose materials.
  - Use mechanical scarifying, grinding or blasting methods where necessary to provide a smooth, open surface free of

laitance. The surface profile should meet ICRI 3,4 or 5.

- Refer to ASTM D4259 and D5295 for surface preparation guidance.
- Other approved substrates: Contact SOPREMA and refer to ALSAN RS installation instructions for other approved substrates and priming requirements.
- Conduct adhesion/peel tests by applying ALSAN RS primer and liquid-applied membrane where necessary to ensure satisfactory adhesion is achieved.

#### Application:

- Prime substrates where required.
- ALSAN RS 276 and ALSAN RS 222 Primer
  - Refer to product data sheets and safety data sheets, as well as ALSAN RS installation instructions.
  - Using a slow-speed mechanical agitator, thoroughly stir the entire container.
  - Mix primer resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.

- Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified waterproofing and flashing materials.
- Apply primer using brush or roller at the rate published on the product data sheet. Do not allow heavy accumulations of primer.
- Allow primer to fully cure before membrane application.
- ALSAN RS Metal Primer
  - Refer to product data sheets and safety data sheets, as well as ALSAN RS installation instructions.
  - Using a slow-speed mechanical agitator, thoroughly stir the entire container.
  - Apply primer using brush or roller at the rate published on the product data sheet.
  - ALSAN RS membranes and flashings should be installed to the primed surface within 24 hours of primer application.
- Pre-cut ALSAN RS Fleece polyester reinforcement to conform to roof terminations, transitions and penetrations. Cut reinforcement to ensure a minimum 2 in. overlap of fleece at side laps and end laps. Ensure the liquid applied flashing membrane is fully reinforced.

- Apply the base coat of catalyzed ALSAN RS Flash resin onto the substrate using a brush or roller, working the liquid resin into the surface for complete coverage and full adhesion.
- Immediately apply the ALSAN RS Fleece reinforcing into the wet base coat of resin. Using a brush or roller, work the ALSAN Fleece reinforcement into the wet resin while applying the second coat of catalyzed ALSAN RS Flash resin to fully encapsulate the fleece. Extend the ALSAN RS Flashing resin a maximum of 1/4 in beyond the reinforcement.

#### Inspection:

- As project conditions vary, monitor changing conditions, adjust primer and membrane application methods as necessary to achieve the desired results.
- Refer to ALSAN RS installation instructions for additional guidance.

## 3.2 DETAILS

### 3.2.1 ALSAN RS DETAILS

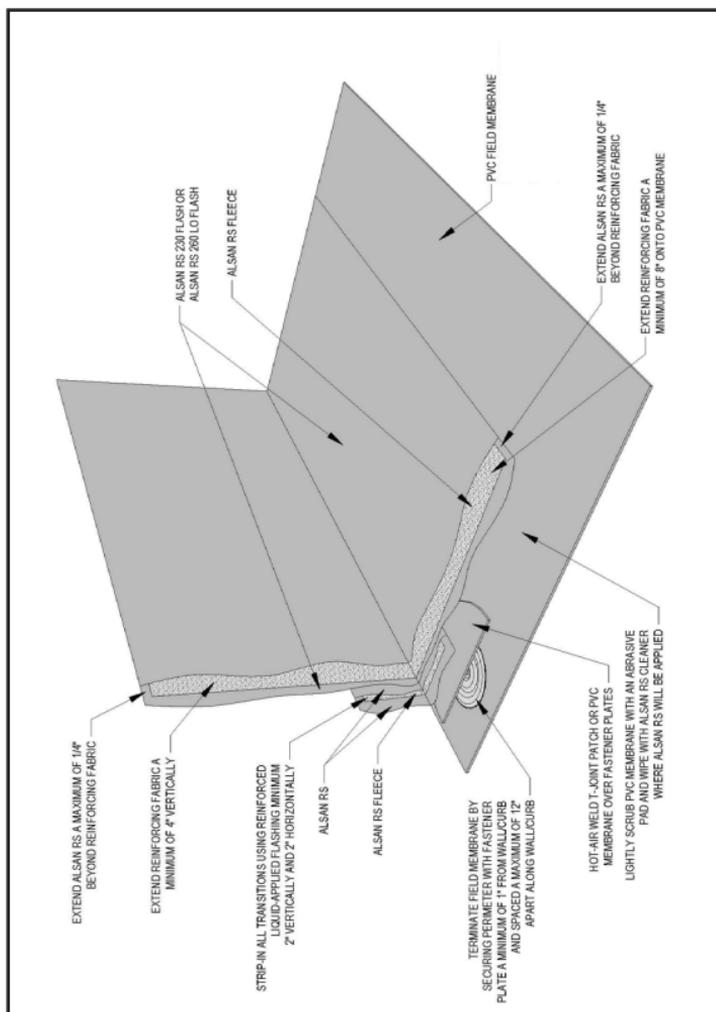


Figure 3.2.1a ALSAN RS Wall/Curb Flashing On PVC Membrane With Horizontal Perimeter Fastening

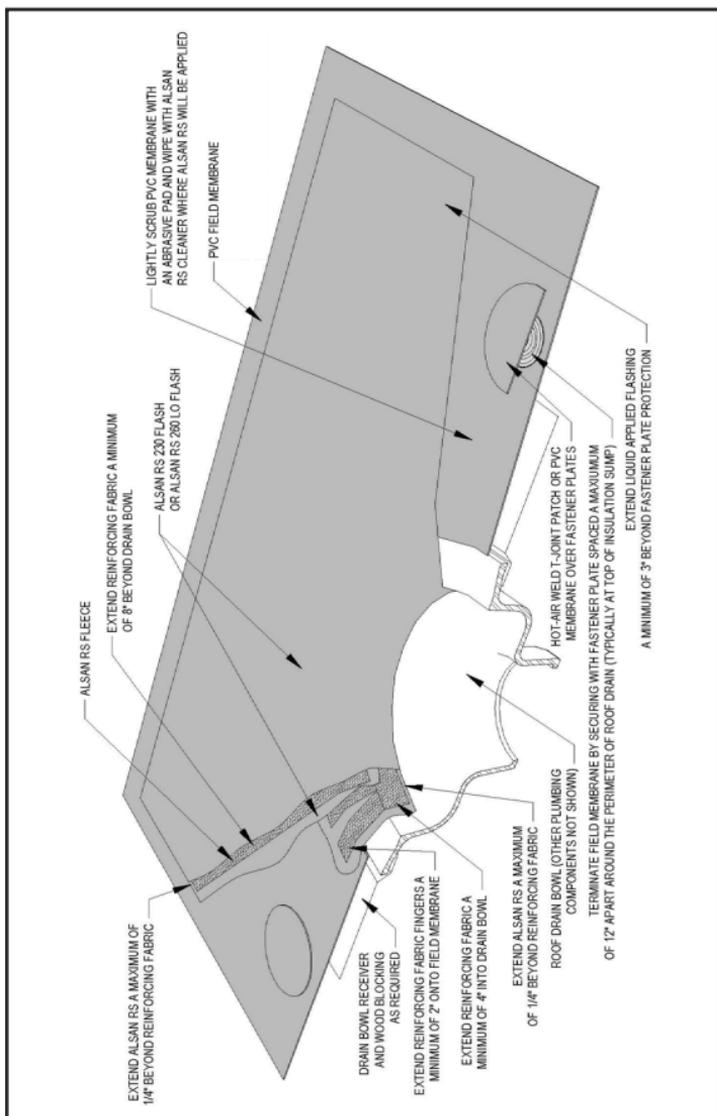


Figure 3.2.1b ALSAN RS Roof Drain Flashing On PVC Membrane With Horizontal Perimeter Fastening

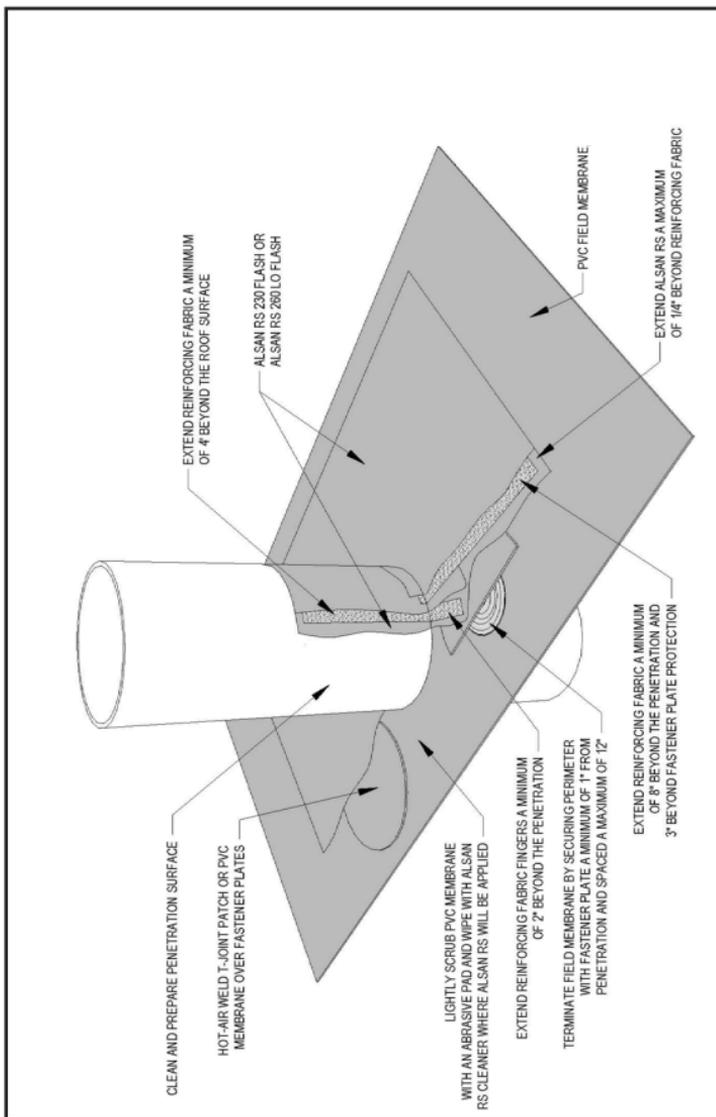


Figure 3.2.1c ALSAN RS Penetration Flashing On PVC Membrane With Horizontal Perimeter Fastening



## 4.0 MISCELLANEOUS

### 4.1 PVC HOT AIR WELDED SIDE AND END LAP PREPARATION

General:

- All SENTINEL PVC membranes require a minimum 1-1/2 in continuous hot air welded seam at all side and end laps.

Preparation:

- Ensure all substrates and bottom surfaces of bare-backed membranes are dry and free of debris.
- Clean laps as necessary.

Application:

- Hot-air welders shall be used to seal all membrane lap seams.
- Position the membrane so that it overlaps the adjacent membrane at the required side lap width. Ensure the laps are clean, dry and free of adhesive and foreign material.
- Weld the laps using an automatic welding machine or hand welder to maintain a 1-1/2 in. uniform, continuous weld.
- At end laps of bare-backed PVC, dog-ear and round all corners. Extend a minimum of 3 in beyond the adjacent roll.

- Adhered fleece-backed membrane end laps shall be butted together and a 6 in. membrane cover strip shall be welded over the butted joint.
- SOPREMA T-Joint Patches shall be hot air welded to the membrane at all t-joint intersections. Chamfer the welding seam prior to installing T-Joint patches using an edging tool or by heating the edge and rolling.
- SENTINEL PVC Cut Edge Sealant shall be installed at all non-factory cut edges for SENTINEL Copper Art P150 and SENTINEL Silver Art P150 membranes.

#### Inspection:

- Carefully probe all seams and t-joints using a rounded-tip probe such as a cotter pin puller. Prevent damage to the membrane during inspection.
- Repair all open seams and damage found during inspection.
- Ensure the membrane is sealed watertight each day.
- When seam weld quality is suspect, inspect laps using destructive examination methods.
  - Cut 2 in wide weld samples across the seam 6 in on either side of the weld (2 in x 12 in wide strip).

- Cut a minimum of three (3) sample welds in each suspect area.
  - Peel the test strips apart at the welds.
  - A satisfactory weld is achieved when the PVC consistently and uniformly delaminates from the reinforcing fabric.
- Inspect the membrane each day to ensure the membrane is properly fastened to the substrate.
  - Each day, repair all voids, wrinkles, open and damaged laps, and all other deficiencies before proceeding.
  - Temporary night seals are required to seal membrane terminations watertight. Remove all temporary night seals before resuming the installation.

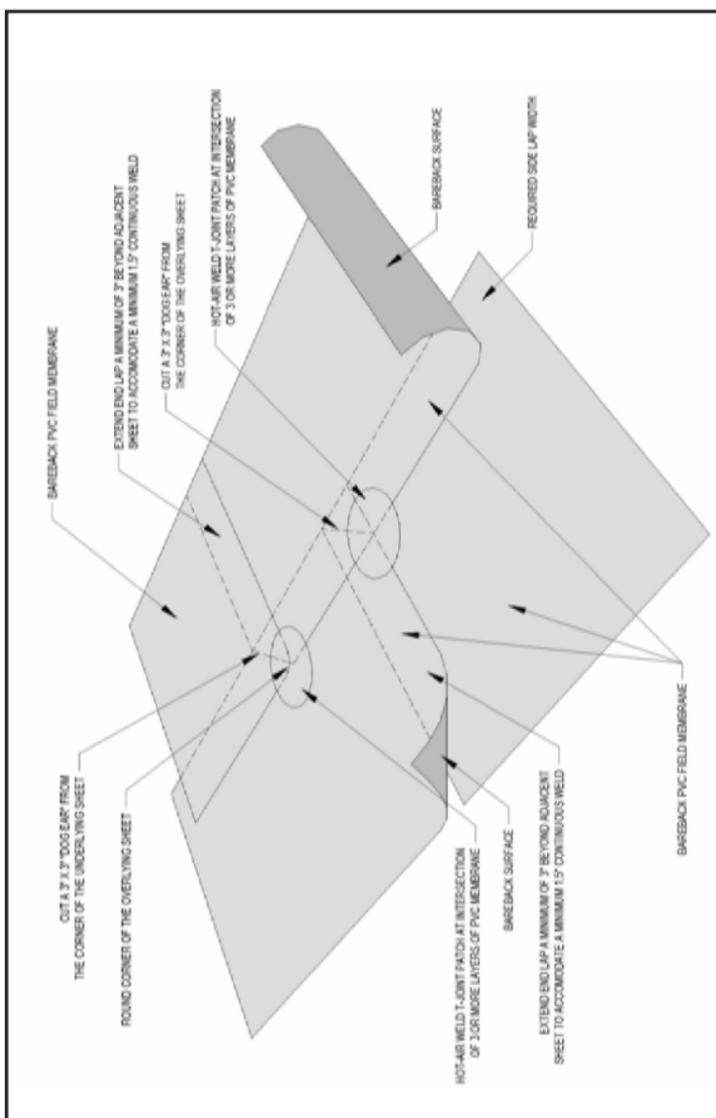


Figure 4.1a Bare-backed PVC Field Membrane Side And End Laps

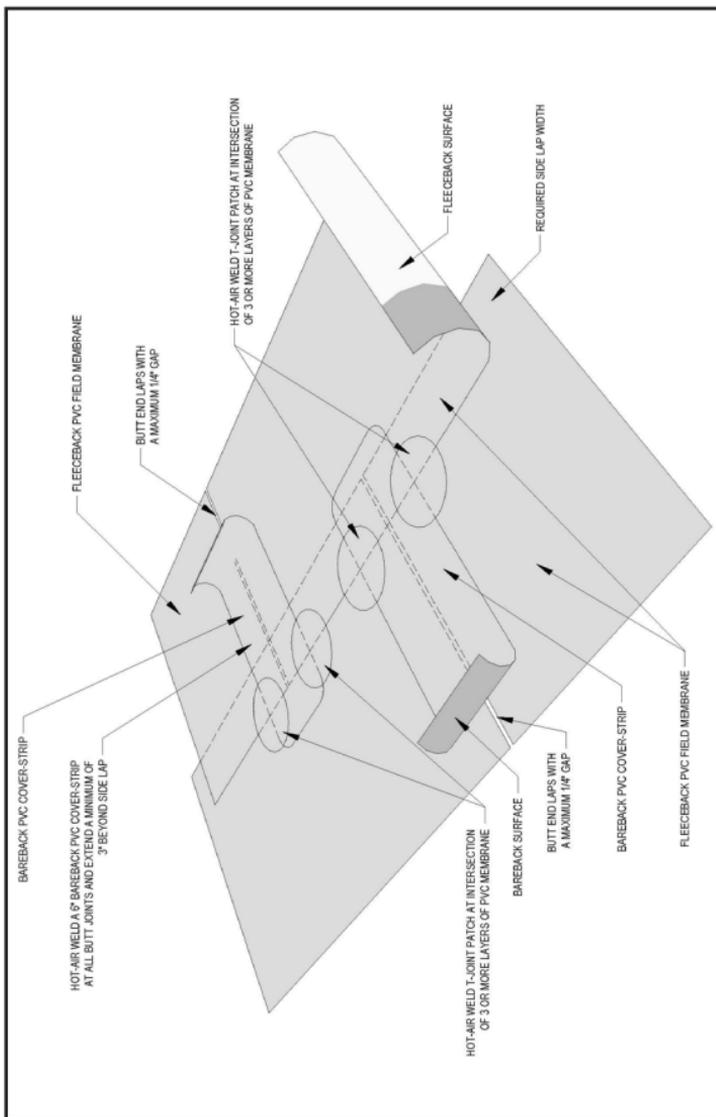


Figure 4.1b Fleece-backed PVC Field Membrane Side And End Laps

## 4.2 VINYL RIBS

General:

- SENTINEL PVC Profile Bars are extruded, pliable PVC bars designed to provide the PVC membrane with the appearance of a standing seam metal roof. The PVC profile bars are installed for aesthetics, thus spacing and location should be carefully coordinated with the owner.

Preparation:

- Ensure vinyl ribs and membrane surfaces are clean, dry and free of debris.

Application:

- Use care when installing the profile bars to ensure they are true and straight, with uniform spacing between the profile bars.
- Typically, PVC membranes receiving vinyl profile bars will be installed with side laps parallel to the slope. Therefore, profile bars should be installed so that a profile bars are located at the edge of each side lap.
- Space profile bars evenly between side laps to desired spacing.
- Spot weld the center of the profile bar to hold the profile bar in place.

- Use a hand welder to weld the profile bars to the membrane providing a continuous weld on each side of the profile bar.

Inspection:

- Ensure ribs are continuously welded along each side of the rib.

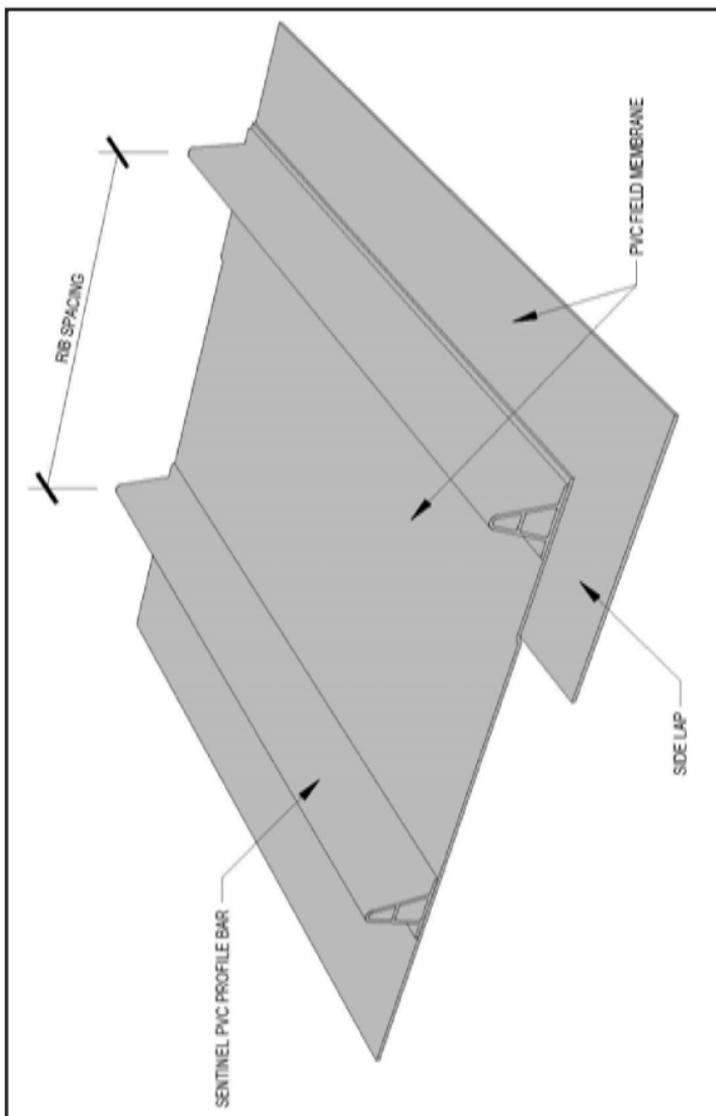


Figure 4.2a PVC Vinyl Ribs

## 4.3 PVC ACCESSORIES

General:

- Refer to the Product Data Sheets and Safety Data Sheets for additional product information.

| 4.3a PVC ACCESSORIES                        |  |
|---|--|
| Product                                     | Application  |
| SENTINEL VCM                                | Polyvinyl coated sheet metal used for fabricating shop fabricating edge metals where PVC membranes can be welded directly to.                |
| SENTINEL COPPER ART VCM                     | Copper colored polyvinyl coated sheet metal used for fabricating shop fabricating edge metals where PVC membranes can be welded directly to. |
| SENTINEL SILVER ART VCM                     | Silver colored polyvinyl coated sheet metal used for fabricating shop fabricating edge metals where PVC membranes can be welded directly to. |
| SENTINEL MOLDED OUTSIDE CORNERS*            | Injection molded, unreinforced flashings used to flash outside corners   |
| SENTINEL MOLDED INSIDE CORNERS*             | Injection molded, unreinforced flashings used to flash inside corners  |
| SENTINEL PVC PREFABRICATED OUTSIDE CORNERS* | Fiberglass reinforced flashings used to flash outside corners  |

| Product   | Application   |
|---|---|
| SENTINEL PVC PREFABRICATED INSIDE CORNERS*            | Fiberglass reinforced flashings used to flash inside corners  |
| SENTINEL PVC COPPER ART PREFABRICATED OUTSIDE CORNERS | Copper colored fiberglass reinforced flashings used to flash outside corners                          |
| SENTINEL PVC COPPER ART PREFABRICATED INSIDE CORNERS  | Copper colored fiberglass reinforced flashings used to flash inside corners                           |
| SENTINEL PVC SILVER ART PREFABRICATED OUTSIDE CORNERS | Silver colored fiberglass reinforced flashings used to flash outside corners                          |
| SENTINEL PVC SILVER ART PREFABRICATED INSIDE CORNERS  | Silver colored fiberglass reinforced flashings used to flash inside corners                           |
| SENTINEL T-JOINT PATCHES*                             | Round, polyester reinforced patches used to seal intersections of 3 or more layers of PVC membrane    |
| SENTINEL PVC PROFILE BAR*                             | Extruded PVC bars installed on PVC membranes to provide the appearance of a standing seam metal roof. |

| Product                              | Application   |
|--------------------------------------|---|
| SENTINEL PVC COPPER ART PROFILE BAR* | Copper colored extruded PVC bars installed on PVC membranes to provide the appearance of a standing seam metal roof.  |
| SENTINEL PVC SILVER ART PROFILE BAR* | Silver colored extruded PVC bars installed on PVC membranes to provide the appearance of a standing seam metal roof.  |
| SENTINEL PVC PIPE FLASHINGS*         | Fiberglass reinforced prefabricated PVC pipe flashings used to flash round penetrations   |
| SENTINEL WALKWAY PAD                 | PVC membrane used to create a walk path and protect field membranes from traffic.   |
| SOPRAMASTIC SP-1*                    | Polyether sealant used to seal top leading edge of PVC flashing membranes.  |
| SENTINEL PVC CUT EDGE SEALANT        | Sealant used to seal non-factory cut edges of SENTINEL Copper Art P150 and SENTINEL Silver Art P150.  |
| BUTYL SEALANT                        | 100 percent solids, water cutoff, gun-grade butyl sealant used to seal between PVC membrane and approved substrates.  |
| BUTYL TAPE                           | 100 percent solids, water cutoff sealant tape approved for sealing between PVC membrane and substrate.  |
| FOIL TAPE BOND BREAKER               | Bond breaker tape, nominal 2 in wide, adhesive-backed: <ul style="list-style-type: none"> <li>• Applied to vinyl coated metal edge detail joint prior to stripping-in with PVC flashing membrane.</li> <li>• Applied to pipes and other flashing substrates to cover incompatible materials such as asphalt.</li> </ul> |

\* Refer to product data sheets or contact SOPREMA for color options.





310 Quadral Drive, Wadsworth, OH 44281 | 800.356.3521 | [www.soprema.us](http://www.soprema.us)

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