

INSTALLATION INSTRUCTIONS

ALSAN® COATING SIL 402 INSTALLATION INSTRUCTIONS

ALSAN COATING SIL 402

ALSAN Coating SIL 402 is a VOC compliant, high solids, single component, moisture cure silicone rubber roof coating and protective barrier used on a variety of low slope roof surfaces and substrates. Upon cure ALSAN Coating SIL 402 forms a durable weatherproof coating that is highly resistant to degradation from UV, natural weathering and may be applied as a maintenance coating over clean, sound, and dry single ply (TPO, PVC, EPDM and CSPE), modified bitumen, BUR and metal roofing and/or other approved existing coatings.

ALSAN Coating SIL 402 can be applied up to 40 mils thick in one application using single component airless spray equipment, roller or brush; spray application providing the best economy for labor and installation. This guide discusses basic techniques, environmental conditions, safety considerations, and limitations for the application of ALSAN Coating SIL 402 and components.

HEALTH & SAFETY CONSIDERATIONS

The contractor shall ensure compliance with OSHA, EPA and other local governing and disposal authorities for project-related safety and environmental requirements. Prior to application, persons handling or applying ALSAN Coating SIL 402 system or components should familiarize themselves with the applicable Product Data Sheets (PDS), Safety Data Sheets (SDS), specifications, and recommended application guidelines. Refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with specified exposure limits where required. The applicator is responsible for ensuring conditions are appropriate to proceed and proper application methods are followed.

Personal Protective Equipment (PPE)

- Fabric suit
- Impervious gloves
- Safety glasses

When applying ALSAN Coating SIL 402, system or components, exposure levels typically will be below OSHA permissible limits for most outdoor spray applications. However, silicone coatings can contain flammable solvents which may atomized while spraying, so air monitoring should be performed by a qualified person to identify any hazards

when required. If respiratory protection is required, use a NIOSH approved air-purifying or positive pressure supplied air respirator.

STORAGE & HANDLING

Containers should be left unopened until ready for use. Store material between 55°F (12.7°C) and 80°F (26.7°C) for optimum shelf life. Storage outside of the recommended guidelines for an extended period of time could affect the performance of the material. In order to spray in cold weather conditions, store and maintain materials at least 65°F (18.3°C) or above. Store away from any sparks or open flames.

ENVIRONMENTAL CONSIDERATIONS

Environmental conditions such as temperature, dew point, humidity, precipitation, sun, cloud cover, wind, and shade can affect application of ALSAN Coating SIL 402 and components. Monitor and confirm all environmental conditions are satisfactory to begin work and remain so during installation of the specified components and materials. Do not apply ALSAN Coating SIL 402 or components during precipitation, fog, dew, frost, with 90% relative humidity (RH) or above, or with chance of condensation. Roller or brush application of ALSAN Coating SIL 402 and components may proceed while air temperature is between 50°F (10°C) and 95°F (35°C) for primers and 40°F (5°C) and 95°F (35°C) for the ALSAN Coating SIL 402 providing the substrate is a minimum of 5°F (3°C) above the dew point temperature, clean and dry.

For spray application of ALSAN Coating SIL 402, material temperature should be maintained at 65°F (18.3°C) or above and applied with ambient temperature between 50°F (10°C) and 95°F (35°C) providing relative humidity (RH) is 90% or below and substrate is a minimum of 5°F (3°C) above the dew point temperature, clean and dry.

STIRRING

Separation will occur when ALSAN Coating SIL 402 and components are stored for extended periods of time. Thoroughly stir the ALSAN Coating SIL 402 or component with a low-speed mechanical mixer for approximately 5 minutes or until a uniform consistency is achieved upon opening the container. To prevent static charge, ground container and equipment.

SUBSTRATE PREPARATION

The prepared substrate bonding surface must be clean, free of any voids, oxidation, oils, wax, moisture, standing water and other release agents that may interfere with adhesion.

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For spray applications, use precautions and protect all surfaces that are not to be coated. Mask off sensitive areas such as windows or equipment, and provide protective screening as needed to prevent overspray. For EPDM roofing and other substrates with hard-to-remove residue, grease or other stubborn contaminants apply ALSAN All-Purpose Cleaner as a pre-treatment. Using a stiff bistle brush/broom scrub as necessary to dissolve and lift contaminants from the substrates. Where required, remove all mold, mildew, fungus and other biological growth using 3:1 bleach solution, or other applicable cleaning products.

Following any pre-treatment or cleaning, pressure wash (1,500 psi or more using a wide fan tip) all roof and flashing surfaces with clean water taking care to prevent damage to in place existing materials. Thoroughly clean and remove residue, dirt, debris, biological growth, surface chalking, and all other materials that may inhibit adhesion of the ALSAN Coating SIL 402, components and accessories. Ensure work area is thoroughly dry before applying any ALSAN Coating SIL 402 materials.

SELECTING SPRAY EQUIPMENT

Airless spray equipment used to apply ALSAN Coating SIL 402 and components can dramatically increase production. ALSAN Coating SIL 402 is a high solids medium to high viscosity product for use with high-pressure & volume spray equipment designed to handle high solids materials. ALSAN Coating SIL 402 may be applied with any spray equipment meeting the following criteria:

MINIMUM PUMP PRESSURE PSI (BARR)	OUTPUT GALLON (L) / MINUTE	SPRAY GUN PSI (BAR)	MINIMUM PRESHURE @ GUN HEAD PSI (BAR)
4000 (276/0)	3.0 (11.3)	5000 (345) REVERSIBLE TIP CLEANING	3000 (210) REVERSIBLE TIP CLEANING

MINIMUM TIP ORIFICE IN (MM)	TIP ORIFICE FAN	HIGH PRESSURE HOSE LENGTH & ID
0.030 (0.76 mm)	50°	MOISTURE RESISTANT HOSES & FITTINGS UP TO 450 FEET LONG MINIMUM 3/4 IN (19 MM) ID

Note: Temperatures will affect the viscosity of ALSAN Coating SIL 402 and components. For optimal application and improved production ALSAN Coating SIL 402 should be maintained at or above the minimum recommended temperature with appropriate drum type or hopper heaters. If required, hazardous location explosive atmosphere rated fluid heater and temperature control equipment should be used; band type drum heaters are not approved for explosive atmospheres.

The equipment listed below has been field tested and recommended for use with ALSAN Coating SIL 402 materials:

SPRAYER	HOSE	GUN	TIP SIZE
GRACO XTREME X70 (AIR OPERATED)	250 FEET 3/4 IN HOSE (HIGH PRESSURE, MOISTURE RESISTANT)	GRACO XTR704	.030 to .043
GRACO GH 933 (GAS POWERED)	250 - 450 FEET 3/4 IN HOSE (HIGH PRESSURE, MOISTURE RESISTANT)	GRACO XTR704	.030 to .043

Spray equipment not evaluated by SOPREMA may also provide acceptable performance. Please consult the equipment manufacturer for their recommendations and application guidelines. SOPREMA recommends referring to the equipment manufacturer for appropriate use and maintenance of all spray equipment and accessories. Contractor must use his or her own knowledge, experience and judgment when selection equipment and accessories for application of ALSAN Coating SIL 402 components and all SOPREMA products. Be certain that the spray equipment is properly maintained and operated in accordance with the equipment manufacturer's instructions.

SPRAY EQUIPMENT STARTUP & PRECAUTIONS

Before start up, ensure that all equipment is clean prior to use. Carefully read and follow the equipment manufacturer's operating and safety instructions and familiarize yourself with equipment features. Ensure that all components and accessories have a capacity and pressure rating that meets the pump manufacturer's specifications. Insert siphon hose/immersion tube into supply drum bung and seal around hose/tube with plastic or other acceptable material to reduce exposure to air. When required, use an appropriate fluid heater to maintain product temperature during application. Select a test area and begin to spray. Pressure directly affects the spray pattern and typically requires adjustments to match field conditions. Set the pressure so that the gun provides a clean spray pattern about 16 in (40 cm) wide at the point of contact with the substrate when sprayed from a distance of 12 to 24 in (30 – 60 cm).

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Keep observers and all non-essential personnel away from spray area. Be certain not to spray near or over open energized electrical circuits. Turn off all air intakes within 100 ft (30.5 m) of spraying. During some conditions, a greater distance may be required. If air intakes cannot be shut off, charcoal filters may reduce or help control interior odors. In order to eliminate overspray on nearby surfaces and objects, a fully enclosed windscreen should be used.

PRIMER APPLICATION

In most applications priming is recommended with ALSAN Coating SIL 402 materials. However, certain substrates may not require priming to prevent bleed through or ensure adequate long-term bond of the ALSAN Coating SIL 402. Adhesion should be confirmed by the applicator for all substrates prior to start of work. Perform an adhesion test on each type of surface or material to determine the required surface preparation, if adequate bond can be achieved, an appropriate primer is required. Periodic adhesion tests are recommended for some substrates such as TPO & EPDM.

When required, the following primers may be applied using single component airless spray equipment (preferred), 1-1/4 in nap roller or synthetic filament brush:

SUBSTRATE	PRIMER	COVERAGE RATE GAL/100 FT ² (L/M ²)	WFT MILS (MM)	DFT MILS (MM)
ASPHALT, BUR & MODIFIED BITUMEN	ALSAN COATING BLEED BLOCKING PRIMER	1.0 (0.41)	16 (0.41)	8.8 (0.22)
METALS	ALSAN COATING RUST INHIBITIVE PRIMER	0.5 (0.20)	8 (0.20)	3.28 (0.08)
EPDM	ALSAN COATING EPDM PRIMER	0.5 (0.20)	8 (0.20)	4 (0.10)
PVC, CSPE (HYPALON)	ALSAN COATING SINGLE PLY PRIMER	1.0 (0.41)	16 (0.40)	7.2 (0.18)
TPO	ALSAN COATING SINGLE PLY PRIMER	0.5 (0.20)	8 (0.20)	3.6 (0.09)

ALSAN Coatings Primers are water based and must be protected from freezing during transit, handling, storage, and installation. Low temperatures and high humidity will slow the evaporation and curing process.

Primers typically should not be applied over wet substrates, when the ambient temperature is below 50°F (10°C) or could fall below 32°F (0°C) within 24 hours of application, or when precipitation or dew is likely to occur within 6 hours of application and/or before the primer dries. ALSAN Coating Primers must be top coated within 24 hours of application to ensure proper coating practices. Prior to application, refer to individual published primer product data sheets, SDS, specifications, guidelines and recommendations for complete application instructions. The applicator is responsible for ensuring conditions are appropriate to proceed with proper application methods. When required and for substrates not listed above, consult SOPREMA for an appropriate primer.

FIELD APPLICATION

Ambient and substrate temperatures must be at or above 35°F (1.6°C) for roller or brush application and 40°F (4.4°C) for spray application of ALSAN Coating SIL 402 materials and until dry. When applying product at ambient temperatures below 65°F (18°C), product should be conditioned and maintained at or above 65°F (18°C) using appropriate fluid heaters. Temperature conditioning lowers the material viscosity, allowing for optimal application and improved production.

ALSAN Coating SIL 402 should be applied using single component airless spray equipment (preferred) or medium nap roller per the application coverage rate and recommended mil thicknesses.

Note: At steep slopes 2:12 or greater application may require multiple thin coats to achieve the desired mil thickness.

WARRANTY REQUIREMENTS			
SUBSTRATE	REQUIRED WFT/DFT		
	10 YEAR	15 YEAR	20 YEAR
METAL	24/22	32/29	48/44*
ASPHALT BUR, MODIFIED BITUMEN	32/29	40/36	48/44*
SINGLE PLY (EPDM, PVC, CSPE (HYPALON), TPO)	32/29	40/36	48/44*

*Requires reinforced flashings

FLASHINGS, LAPS, SEAMS, JOINTS & FASTENERS

Refer to project specifications and detail drawings for flashing specific conditions. Before applying field coating, ensure all roof transitions, penetration flashings, laps, seams, joints, and fasteners are prepared as specified. Install flashings using ALSAN Coating SIL Flashing Grade or ALSAN Coating SIL 402 at specified rates, coats, mil thickness with ALSAN Coating Butyl Fleece Tape and/or polyfleece as recommended.

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Generally, all flashing terminations should be 8 in (200 mm) minimum vertical height wherever possible or completely cover existing flashings where applicable. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope. Do not flash over existing through-wall flashings, weep holes and overflow scuppers. All flashing shall be terminated and counter flashed in accordance with industry-accepted practice.

SPRAY APPLICATION

For spray applications, filters should not be used. Adjust tip size depending upon conditions. Pump pressure, hose length, air temperature, and material temperature can affect the spray pattern. If the spray pattern is pulsating or is fingering, reduce the size of the tip orifice. This will decrease the material delivery volume and increase the pressure. To reduce applicator fatigue, install a wand extension at the gun with a 45° elbow at the tip. Be certain to never use hoses that were used previously to spray water based products. Residual moisture in the hose will react with the ALSAN Coating SIL 402 and cause the material to cure and clog the hose.

ALSAN Coating SIL 402 may be applied in single or multi-coat applications. When ALSAN Coating SIL 402 is applied in two coats, the second coat should be applied perpendicular to first coat. With spray applications, roof coating should be applied by roller at roof edges and penetrations to provide clean straight edges and prevent overspray. Additional roof coating should be applied at seams, laps and joints.

Typically two coat applications are recommended to minimize and/or eliminate possibility of "pinholes". Ensure that the ALSAN Coating SIL 402 forms a continuous, void and pinhole-free membrane. Repair any voids or pinholes as necessary. Verify application of all coats using a wet mil gauge during the application.

When spraying, keep the spray gun perpendicular to the substrate using overlap spray patterns to ensure uniform coverage, free from pinholes. In multi-coat applications and with repairs, for best results apply additional coats as soon as the first coat is cured.

SPRAY TECHNIQUE

While spraying, the tip should be 12 to 24 in (300 to 600 mm) above the substrate while moving at a rate to produce the desired coating thickness. Use a half-lap technique,

where each spray pass is overlapped 50% for a uniform coverage ensuring no thin spots or "holidays" are present. On steep slope (greater than 2:12) or vertical surfaces, ensure the material is not applied too thick as to cause runs or sags. Note: At higher temperatures, the material will sag much easier than at lower temperatures.

CURING

Product cure time will vary from minutes to hours depending upon applied film thickness, temperature and relative humidity. Typical cure is 3 hours for a 30 mil application at 70°F (21°C) and 50% RH. Note: Cold and dry conditions will slow curing, while hot and wet conditions will accelerate curing. All supplemental coats and repairs should be performed within 72 hours of the initial application.

CLEANUP

Remove ALSAN Coating SIL 402 overspray and clean tools and equipment before the material hardens using Naptha or mineral spirits. ALSAN Coating SIL 402 may be left in a sealed, airtight, moisture resistant hose with moisture resistant fittings overnight when required; ensure there is no air left in the hose line. However, if spray operations will be stopped or delayed for more than 24 hours, all hoses, lines and equipment should be cleaned and flushed free of all ALSAN Coating SIL 402 using Naptha or mineral spirits. Flush hoses and lines with 10 to 15 gallons (38 to 56 liters) of solvent during the initial flush, followed by a second flush with 10 to 15 gallons of clean solvent or until all ALSAN Coating SIL 402 has been removed.

DISCLAIMER

The applicator is responsible for ensuring conditions are appropriate to proceed with proper application methods. Refer to SOPREMA product, specifications and guides for additional information. Materials and methods should be adjusted as necessary to accommodate varying project conditions. Materials should not be installed when conditions are unacceptable to achieve the specified results.