SECTION 07 56 00

SILICONE ROOF COATING

(Specification for ALSAN COATING SIL 402)

NOTE: This guide specification is provided as a guideline and must be modified, as required, by the Designer of Record for each project. This specification is prepared in general accordance with CSI format to be included under Division 7 – Thermal and Moisture Protection. Additional information is provided. [delete this paragraph]

Optional information to consider is presented in “blue” font below. Choose appropriate options and delete any information deemed appropriate for each individual project. [delete this paragraph]

# GENERAL

## SUMMARY

### Work shall include, but is not limited to, the following:

#### Repair existing roofing and flashings using compatible materials to ensure the coating substrates are clean, dry, and watertight prior to coating application.

#### Clean existing [metal lap panel roofing][standing seam metal roofing][modified bitumen roofing][built-up roofing][TPO roofing][PVC roofing][CSPE roofing][EPDM roofing] and flashing substrates to be coated.

#### Primer/Surface treatment:

##### [Metal Lap Panel Roofing][Standing Seam Metal Roofing] and flashings:

###### Prime surface rust using ALSAN COATING UNIVERSAL PRIMER.

##### [Modified Bitumen Roofing][Built-up Roofing] and flashings:

###### To prevent bitumen bleed-through, apply ALSAN COATING ASPHALT BLEED BLOCKING PRIMER.

##### [TPO Roofing][PVC Roofing][CSPE Roofing][EPDM Roofing] and flashings:

###### To prevent bleed-through or to improve adhesion to approved single-ply roofing and flashings use ALSAN COATING UNIVERSAL PRIMER.

#### Seal all exposed fasteners, roof seams and rooftop penetrations as specified.

#### [METAL LAP PANEL ROOFING][STANDING SEAM METAL ROOFING]:

##### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

##### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

##### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

#### [TPO][PVC][CSPE][EPDM] SINGLE-PLY ROOFING:

##### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

##### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

##### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

#### [MODIFIED BITUMEN][BUILT-UP] ROOFING:

##### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

##### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

##### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

#### EXISTING SILICONE ROOF:

##### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

#### Contractor shall provide all related materials and labor required to complete specified roof coating necessary to receive the specified manufacturer’s warranty.

## RELATED SECTIONS

### 010000 - General Requirements

### 011000 - Summary of Work

### 072200 - Roof Insulation

### 075216 - SBS Modified Bitumen Roofing

### 075419 - Hybrid-Polyvinyl-Chloride (PVC) and SBS Modified Bituminous Roofing

### 075419 - Polyvinyl-Chloride (PVC) Roofing

### 076200 - Sheet Metal Flashing and Trim

## DEFINITIONS

### ASTM D 1079-Standard Terminology Relating to Roofing and Waterproofing.

### The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary

## REFERENCES

### AMERICAN STANDARD OF TESTING METHODS (ASTM):

#### ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.

#### ASTM C 1193 – Standard Guide for Use of Joint Sealants

#### ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

#### ASTM D 471 - Standard Test Method for Rubber Property – Effects of Liquids

#### ASTM D 522 - Standard Test Methods for Mandrel Bend of Attached Organic Coatings.

#### ASTM D 562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.

#### ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

#### ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

#### ASTM D 1644 – Standard Test Methods for Nonvolatile Content.

#### ASTM D 1653 - Standard Test Method for Water Vapor Transmission of Organic Coating Films.

#### ASTM D 2196 - Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer.

#### ASTM D 2370 - Standard Test Method for Tensile Properties of Organic Coatings.

#### ASTM D 2697 – Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings

#### ASTM D 4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.

#### ASTM D 4799 – Standard Test Method for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Fluorescent UV and Condensation Method)

#### ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.

#### ASTM G 21 - Standard Practice for Determining resistance of Synthetic Polymeric Materials to Fungi.

#### ASTM G 155 - Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

#### ASTM G 4798 - Standard Practice for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method).

### AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

#### ANSI/FM 4474 - American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.

### COOL ROOF RATING COUNCIL (CRRC)

### EPA ENERGYSTAR

### FLORIDA BUILDING CODE (FBC):

### INTERNATIONAL CODES COUNCIL (ICC):

### NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA).

### ROOF COATINGS MANUFACTURERS ASSOCIATION (RCMA).

### UNDERWRITERS LABORATORIES (UL):

#### UL 790 Standard Test Methods for Fire Tests of Roof Coverings.

## ACTION SUBMITTALS

### Product Data Sheets: Submit manufacturer’s product data sheets, installation instructions and/or general requirements for each component.

### Safety Data Sheets: Submit manufacturer’s Safety Data Sheets (SDS) for each component.

### Sample/Specimen Warranty from the manufacturer and contractor.

## INFORMATION SUBMITTALS

### Contractor Certification: Submit written certification from protective coating and waterproofing system manufacturer certifying that the applicator is authorized by the manufacturer to install the specified materials and system.

## CLOSEOUT SUBMITTALS

### Warranty: Provide manufacturers and contractor’s warranties upon substantial completion of the waterproofing system.

## QUALITY ASSURANCE

### MANUFACTURER QUALIFICATIONS:

#### Manufacture shall have 20 years of experience manufacturing roofing and waterproofing materials.

#### Manufacturer shall have trained technical service representatives employed by the manufacturer, independent of sales.

#### Manufacturer shall provide site visit reports in a timely manner.

#### Manufacturer shall provide specified warranty upon satisfactory project completion.

### CONTRACTOR QUALIFICATIONS:

#### Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.

#### Applicators shall have completed projects of similar scope using the same materials as specified herein.

#### Contractor shall provide full time, on-site superintendent or foreman experienced with the specified waterproofing system through satisfactory project completion.

#### Applicators shall be skilled in the application methods for all materials.

#### Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.

#### Contractor shall maintain a copy of all submittal documents, on-site, available always for reference.

### SUBSTRATE EVALUATION:

#### Contractor shall evaluate the acceptability of existing substrates to ensure roof surfaces have positive slope and adequate drainage, clean surfaces free of incompatible materials, dry materials and surfaces free of moisture contamination, and otherwise satisfactory to apply the specified coating and coating accessories.

#### Contractor shall not proceed with the application of the coating and coating accessories until substrate deficiencies have been repaired or replaced as necessary to successfully complete the specified coating.

#### Contractor shall evaluate adhesion of the coating and coating accessories to substrates throughout the work area, and record the results using digital photos or other means each day as necessary to demonstrate satisfactory adhesion is achieved and maintained throughout the project.

## DELIVERY, STORAGE AND HANDLING

### Refer to each product data sheet or other published literature for specific requirements.

### Refer to product Safety Data Sheets (SDS) for storage and handling related hazards and take all necessary measures and precautions to comply with storage and handling requirements.

### Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.

### Store coating and accessory materials in a dry, well ventilated, weather tight area, with temperatures maintained between 55°F (12.8°C) and 80 °F (26.7°C). Protect materials to prevent damages due to environmental exposures.

### During cold weather, ensure water-based materials are properly stored in heated areas, and protect materials as necessary to prevent exposure to freezing conditions.

### Store and dispose of materials in accordance with building owner requirements, site conditions, and the requirements of local jurisdictions.

### Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris.

### All damaged materials shall be removed from job site and replaced with new, suitable materials.

## PERFORMANCE REQUIREMENTS

### FIRE CLASSIFICATION:

#### Coating shall meet ASTM E 108 and or UL Classified per UL 790.

### FM Approval:

### Coating shall be FM Approved.

### Florida Building Code approved:

#### Product shall be approved for use in the State of Florida, with an Evaluation Report indicating compliance with the FBC, 6th Edition, 2017.

### LEED SUSTAINABLE SITES (SS) CREDITS:

#### SS 7.2, Heat Island Effect-Roof.

##### The specified white coating includes a minimum of seventy-five percent of the low-slope roof area, and shall have an SRI value greater than, or equal to 78 as published by the Cool Roof Rating Council (CRRC).

### COOL ROOF RATING COUNCIL (CRRC):

#### The specified white coating shall be listed by the CRRC (product number 0772-0060) with the following minimum published values, including CRRC 3-year ratings:

##### Solar Reflectance: Initial:0.88 3-year: 0.70

##### Thermal Emittance: Initial:0.90 3-year: 0.90

##### Solar Reflectance Index (SRI): Initial 111 3-year: 86

### ENERGY-STAR RATING:

#### The specified white coating shall be listed by the Cool Roof Rating Council (CRRC), and meet the approval requirements of the US EPA EnergyStar Program:

##### Initial Solar Reflectance: 0.88

##### Initial Emissivity: 0.90

### CALIFORNIA TITLE 24:

#### The specified white coating shall meet or exceed the following 3-year requirements of California Title 24 as listed with the Cool Roof Rating Council (CRRC):

##### Solar Reflectance: 3-year: 0.70

##### Thermal Emittance: 3-year: 0.90

##### Solar Reflectance Index (SRI): 3-year: 86

### NSF International:

#### NSF P151 Rainwater catchment certified for rainwater runoff.

## SITE CONDITIONS

### SAFETY:

#### The contractor shall be responsible for complying with all project-related health, safety, and environmental requirements.

#### The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified coatings and accessories. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate project requirements and conditions.

#### The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

### ENVIRONMENTAL CONDITIONS:

#### Monitor substrate and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade.

#### Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.

#### Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry during, the application of the specified coating and accessories. Ensure all materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.

#### Ambient temperature should be between 40°F (4.4°C) and 95°F (35°C), and well above the dew point temperature, with no dew, fog, or condensation present.

#### During preparation, cleaning, and application of specified materials, follow all health, safety and environmental requirements related to applicable materials involved with the work and related exposures. Properly handle and dispose of all cleaning materials, waste and debris associated with the specified work.

## WARRANTY

### Manufacturer's Warranty. The manufacturer shall provide the owner with the manufacturer’s roof coating warranty for [10][15][20] years from the date the warranty is issued.

### The contractor shall guarantee the workmanship and shall provide the owner with the contractor’s warranty covering workmanship for a period of [2] years from completion date.

# PRODUCTS

## MANUFACTURER

### SINGLE SOURCE MANUFACTURER: All coating materials shall be manufactured by a single supplier with 20 years or more roofing and waterproofing manufacturing history in the US.

#### Comply with the manufacturer’s requirements as necessary to provide the specified warranty.

### ACCEPTABLE MANUFACTURER:

#### SOPREMA, located at: 310 Quadral Drive, Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.

#### Acceptable alternate manufacturers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## SILICONE ROOF COATING SYSTEM

### FIELD COATING:

#### Low VOC compliant, high solids, single component, [fabric reinforced] [non-reinforced] silicone roof coating and protective barrier for a variety of low slope roof surfaces and substrates.

##### SOPREMA ALSAN COATING SIL 402:

###### Solids by volume, % (ASTM D2369): 95 +/- 3

###### Solids by weight, % (ASTM D1644): 96 +/- 3

###### Tensile strength, psi (ASTM D412): >240

###### Elongation, % (ASTM D412): >270

###### VOC, g/l (ASTM D3950): <50

###### Permeability, perms (ASTM E96): 3.4

###### Shelf life, months: 18

###### Clean-up; Mineral spirits.

###### Containers: [5 gal (18.9 L)][55 gal (208L)].

###### Tack free: <8 hours.

###### Fully cured; 8-72 hours.

### FLASHING GRADE:

#### VOC compliant, high solids, single component, low sag, silicone mastic used to prepare seams, penetrations, and fasteners for coating with ALSAN COATING SIL 402.

##### SOPREMA ALSAN COATING SIL 402 FLASHING:

###### Solids by volume, % (ASTM D2697-3): 91 +/- 2

###### Solids by weight, % (ASTM D1644): 97 +/- 2

###### Tensile strength, psi (ASTM D412): >305 +/- 10

###### Elongation, % (ASTM D412): >60 +/- 10

###### Standard color: White

###### Shelf life: 18

###### VOC, g/l (ASTM D3950): <50

###### Clean-up; Mineral spirits.

###### Containers: 2 gal (7.6 L).

###### Tack free: 2 hours.

###### Dry to touch: 6 hours.

### WALKWAY COATING:

#### VOC compliant, high solids, single component, moisture curing, silicone coating used to enhance impact resistance where required at walkways and around mechanical equipment.

##### SOPREMA Inc. ALSAN COATING SIL 402 WALKWAY GRADE:

###### Solids by volume, % (ASTM D2697-3): >95

###### Solids by weight, % (ASTM D1644): >96

###### Tensile strength, psi (ASTM D412): >240

###### Elongation, % (ASTM D412): >270

###### VOC, g/l (ASTM D3950): <50

###### Tack free: 8 hours.

###### Standard color: Safety yellow

###### Shelf life, months: 18

###### Walkable, hours: 24

###### Fully cured, hours: >72

## ACCESSORIES

### PRIMERS:

#### [METAL LAP PANEL ROOFING][STANDING SEAM METAL ROOFING]:

##### Metal roofing primer.

###### SOPREMA Inc. ALSAN COATING UNIVERSAL PRIMER.

#### [MODIFIED BITUMEN ROOFING][BUILT-UP ROOFING]:

##### Modified bitumen and asphalt roofing pre-treatment/primer to block bitumen bleed-through.

###### SOPREMA Inc. ALSAN COATING ASPHALT BLEED BLOCKING PRIMER.

#### [TPO ROOFING][PVC ROOFING][CSPE ROOFING][EPDM ROOFING]:

##### Single ply roofing pretreatment/primer to block bleed-through and improve adhesion between specified coating approved single-ply membrane substrates.

###### SOPREMA Inc. ALSAN COATING UNIVERSAL PRIMER.

### REINFORCING FABRIC:

#### Proprietary, non-woven polyester reinforcement used with ALSAN COATING SIL 402 and ALSAN COATING SIL 402 FLASHING:

##### SOPREMA Inc. POLYFLEECE:

###### Thickness: 37 mils (0.9 mm)

###### Fabric Weight: 0.18 oz/ft2 (55 g/m2)

###### Width(s): [4 in (10 cm)][6 in (15 cm)][8 in (20 cm)][39 in (99 cm)]

###### Length: [50 ft (15.2 m)][300 (91m) for 39 in wide rolls only]

### ROOF CLEANER:

#### Water-based surface cleaner designed to dissolve and remove heavy accumulation of hard to remove dirt, oil, and grease without the use of harsh solvents.

##### SOPREMA Inc. ALSAN ALL-PURPOSE CLEANER:

###### Product weight: 8.6 lbs./gal (1.03 kg/l)

###### VOC (EPA 24): 0.0 lbs./gal (0 g/L)

###### Minimum dry time: Do not allow to dry.

###### pH level: 11.0 – 13.5

###### Clean up solution: Water.

###### Container size: 5 gal (18.9 L)

# EXECUTION

## EXAMINATION

### GENERAL:

#### Examination includes visual observations, qualitative analysis, and or quantitative testing measures as necessary to ensure conditions are satisfactory to begin and remain satisfactory throughout the project.

#### Ensure all roof surfaces have positive slope with no less than 1/8 inch per foot.

#### Examine substrates to ensure all roof areas have positive slope, adequate drainage and contain no standing water from HVAC condensation or other sources.

#### The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to apply the specified coating and accessory materials.

### MOISTURE SURVEY:

#### Complete a moisture survey of existing roofing and flashing materials to be coated. This includes using all necessary means such as infrared cameras, capacitance meters, moisture probes, nuclear gages, and test cuts to ensure all wet materials are identified for removal and replacement.

#### Examine roofing membrane edges/laps, metal laps, foam closures, fastener seals, and other surface conditions. Eliminate trapped and concealed moisture before applying specified coating and accessories.

### ADHESION TESTS:

#### Prior to beginning work, the contractor shall examine adhesion between specified coating materials and all prepared substrates using the following qualitative method:

##### Ensure the new coating materials will properly adhere to all substrates.

##### Conduct 180-degree peel tests to examine adhesion.

##### Choose three (3) or more representative substrate areas to test.

##### Clean and prepare the substrates as specified and indicated herein, allow too fully dry.

##### Cut minimum 1 in (2.54 cm) wide by 12 in (30.48 cm) long strips of POLYFLEECE fabric.

##### Apply primer where required, allow primer to fully dry.

##### Embed an 8 to 9 in (20.32 to 22.86 cm) long section of the strip into ALSAN COATING SIL 402 silicone coating. Leave a 3 to 4 in (7.62 to 10.16 cm) long portion un-adhered to grip and pull.

##### ALSAN COATING SIL 402 silicone coating may require 2 days or more.

##### Grip the un-adhered portion of the sample and pull 180 degrees, parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.

##### Results should demonstrate strong resistance to peel. A strong bond will result in significant residual coating materials remaining on the substrate.

##### Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.

##### Where quantitative measurements of peel resistance are desired, peel resistance of 1 in wide samples should exceed 2lb/in (0.35 N/mm) when tested. Wider fabric samples over 1 in wide should measure no less than 2 pounds per lineal inch of fabric width. 180-degree peel test. Basis of test is ASTM C794.

## PREPARATION

### GENERAL:

#### Before commencing work, the contractor shall prepare all work areas to ensure conditions are satisfactory to proceed with the installation of specified materials.

#### Route all HVAC condensate lines to roof edges or into roof drains to prevent moisture contamination and damage.

#### Eliminate ponding water conditions. All roof surfaces shall have positive roof slope, no less than 1/8 inch per foot. All roof surfaces to be coated shall be free of standing water.

#### Protect all adjacent areas from damage, overspray, and spillage of coating materials.

### [METAL LAP PANEL ROOFING][STANDING SEAM METAL ROOFING] PREPARATION:

#### Replace all missing, stripped, and deteriorated fasteners using appropriate fasteners with EPDM-backed washers.

#### Fasten all metal roofing and flashing at lapped seams as required to prevent movement and opening of seams under foot traffic.

#### Use low pressure 2,000 psi power washer with a wide fan tip, and cleaner as approved by the local jurisdiction, to remove dirt, biological growth, and other residue as necessary to produce clean roof surfaces.

#### Use ALSAN ALL-PURPOSE CLEANER, or detergent cleaner and water, as approved by the local jurisdiction, to remove petroleum, grease or other contaminants that will prevent adhesion of new coating materials.

#### Remove all residual detergents and cleaners using clean water.

### [MODIFIED BITUMEN ROOFING][BUILT-UP ROOFING] PREPARATION:

#### Use low pressure power washer and cleaner as approved by the local jurisdiction, to remove loose granules, dirt, biological growth, and other residue as necessary to produce clean roof surfaces.

#### Remove all residual cleaner using clean water.

### EPDM ROOFING PREPARATION:

#### Use low pressure 2,000 psi power washer with a wide fan tip, and cleaner as approved by the local jurisdiction, to remove dirt, biological growth, and other residue as necessary to produce clean roof surfaces.

#### Use ALSAN ALL-PURPOSE CLEANER or other rinseable cleaner, as approved by the local jurisdiction, with a stiff bristle broom or brush to remove petroleum, grease, or other contaminants to clean surfaces.

#### Remove all residual cleaner using clean water.

#### Remove all carbon black residues that prevent adhesion of coating.

### [TPO ROOFING][PVC ROOFING][CSPE ROOFING] PREPARATION:

#### Use low pressure 2,000 psi power washer with a wide fan tip, and cleaner as approved by the local jurisdiction, to remove dirt, biological growth, and other residue as necessary to produce clean roof surfaces.

#### Use ALSAN ALL-PURPOSE CLEANER or cleaner and water as approved by the local jurisdiction, with a stiff bristle broom or brush to remove petroleum, grease, or other contaminants to clean surfaces.

#### Remove all residual cleaner using clean water.

### EXISTING SILICONE ROOF COATING PREPARATION:

#### Use low pressure 2,000 psi power washer with a wide fan tip, and cleaner as approved by the local jurisdiction, to remove dirt, biological growth, and other residue as necessary to produce clean roof surfaces.

#### Use ALSAN ALL-PURPOSE CLEANER or cleaner and water as approved by the local jurisdiction, with a stiff bristle broom or brush to remove petroleum, grease, or other contaminants to clean surfaces.

#### Remove all residual cleaner using clean water.

## PRIMER APPLICATION

### [METAL LAP PANEL ROOFING][STANDING SEAM METAL ROOFING] PRIMING:

#### Evenly apply ALSAN COATING UNIVERSAL PRIMER using a heavy-duty sprayer, paint roller, or brush.

#### Apply at the nominal rate of 1 gal/100 ft2.

#### Do not leave primed substrates exposed during periods of dew, precipitation, or other inclement weather within 72 hours of application.

#### Apply the ALSAN coating to primed substrates during the same day or within 24 hours after priming.

### [MODIFIED BITUMEN ROOFING][BUILT-UP ROOFING] PRIMING:

#### Evenly apply ALSAN COATING ASPHALT BLEED BLOCKING PRIMER using a heavy-duty sprayer, paint roller, or brush.

#### Apply at the nominal rate of 1.5 gal/100 ft2.

#### Do not leave primed substrates exposed during periods of dew, precipitation, or other inclement weather within 72 hours of application.

#### Apply the ALSAN coating to primed substrates during the same day or within 24 hours after priming.

### [TPO ROOFING][PVC ROOFING][CSPE ROOFING][EPDM ROOFING][OTHER APPROVED SINGLE-PLY ROOFING] PRIMING:

#### Evenly apply ALSAN COATING UNIVERSAL PRIMER using a heavy-duty sprayer, paint roller, or brush.

#### Apply at the nominal rate of 1 gal/100 ft2.

#### Do not leave primed substrates exposed during periods of dew, precipitation, or other inclement weather within 72 hours of application.

#### Apply the ALSAN coating to primed substrates during the same day or within 24 hours after priming.

## ROOF FLASHING APPLICATION

### GENERAL

#### Apply specified flashing grade materials and sealants prior to roof coating application. Ensure all flashing grade materials and sealants are cured prior to applying the specified coating.

### [METAL LAP PANEL ROOFING][STANDING SEAM METAL ROOFING]:

#### If primed, ensure ALSAN COATING UNIVERSAL PRIMER is dry before applying new coating materials.

#### Horizontal (flat) end laps: Apply 1” wide bond breaker tape (painter’s tape) and pre-treat the seam using ALSAN COATING SIL 402 FLASHING.

#### Alternatively, a three-course application of ALSAN COATING SIL 402 reinforced using POLYFLEECE can be used to pre-treat end laps.

#### Apply ALSAN COATING SIL 402 FLASHING to seal all exposed fastener heads.

#### Apply ALSAN COATING SIL 402 FLASHING to seal side laps and terminations.

### [TPO ROOFING][PVC ROOFING][CSPE ROOFING][EPDM ROOFING][MODIFIED BITUMEN ROOFING][BUILT-UP ROOFING]:

#### If primed, ensure ALSAN COATING UNIVERSAL PRIMER is dry before applying new coating and flashing materials.

#### Pre-treat all side and end-laps with ALSAN COATING SIL 402 FLASHING using a brush or roller.

#### Apply ALSAN COATING SIL 402 FLASHING at membrane terminations such as roof penetrations and edge metal.

## SILICONE ROOF COATING APPLICATION

### ALSAN COATING SIL 402 is applied using rollers, brushes, or single-component sprayers.

#### BRUSH APPLICATION:

##### Disposable brushes are generally needed for small/confined areas, seams, touch-up work and flashings.

#### ROLLER APPLICATION:

##### Rollers include heavy-duty hand-held rollers and natural roller-covers with ½ to 1 in nap.

##### Apply ALSAN COATING SIL 402 to ensure an even, uniform coating thickness.

##### Roll side-to-side, up-and-down. Always roll into the seams.

##### Profile rollers are recommended for metal roofing to conform to metal rib and seam profiles.

#### SQUEEGEE AND ROLLER APPLICATION:

##### Dispense coating onto the roof, then use a flat blade squeegee to apply the coating to the desired thickness, then back-roll the coating using a roller as indicated herein.

#### SPREADER CART AND ROLLER APPLICATION:

##### Tank spreader carts are used to dispense coating onto the roof surface, then rollers are used to back-roll the coating as indicated herein.

#### T-BAR AND ROLLER APPLICATION:

##### Using spray pumps to deliver coating to T-bar at low pressure to dispense coating onto the roof surface.

##### Rollers are used to back-roll the coating as indicated herein.

#### SPRAY APPLICATION:

##### Refer to Coating Preparation, Weather and Environmental Conditions, for acceptable weather conditions.

##### When spraying ALSAN COATING SIL 402, the spray tip should be located approximately 12 in above the roof substrate to ensure a 12 in spray fan pattern. Spray perpendicular to the surface, moving steady in one direction.

##### Spray techniques vary for each substrate. Ensure the minimum coating thickness is achieved at membrane laps, standing seams, metal panel ribs, roof penetrations, at fasteners, etc.

##### Hose size, length, weather conditions, ALSAN COATING SIL 402 material temperature and other variables will affect spray pattern. Adjust application techniques as necessary to accommodate varying conditions to produce a uniform coating and meet minimum thickness requirements.

##### To avoid runs and sag on steep slopes and vertical surfaces, multiple coats may be required.

##### Spray equipment options for ALSAN COATING SIL 402 include the following:

###### Dedicated equipment for silicone roof coatings only.

###### Recommended sprayers: Graco 933 or Graco King X-70, fed by a 5:1 transfer pump.

###### Recommended pump output: 3 gpm, 7,000 psi (483 bar).

###### Hoses: High-pressure, moisture-resistant, ¾ in diameter minimum.

###### Recommended minimum pressure at spray gun: 4,000 psi (276 bar) at spray gun head.

###### Tip: Heavy Duty 529 to 635

### [METAL LAP PANEL ROOF][STANDING SEAM METAL ROOFING] COVERAGE:

#### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

#### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

#### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

### [TPO][PVC][CSPE][EPDM] SINGLE-PLY ROOFING COVERAGE:

#### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

#### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

#### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

### [MODIFIED BITUMEN][BUILT-UP] ROOFING COVERAGE:

#### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

#### [15 year] Apply one coat of ALSAN COATING SIL 402 at 32 wet mils (approximately 2.0 gals/100 ft2). Finished roof coating shall consist of 30 mils dry film thickness.

#### [20 year] Apply one coat of ALSAN COATING SIL 402 at 40 wet mils (approximately 2.5 gals/100 ft2). Finished roof coating shall consist of 38 mils dry film thickness.

### EXISTING SILICONE ROOFING COVERAGE:

#### [10 year] Apply one coat of ALSAN COATING SIL 402 at 24 wet mils (approximately 1.5 gals/100 ft2). Finished roof coating shall consist of 22 mils dry film thickness.

## WALKWAYS

### After the roof coating has cured, mark areas to receive walkways.

### LIGHT TRAFFIC AREAS:

#### Brush or roll ALSAN COATING SIL WALKWAY GRADE at designated walkway area at a rate of 2.0 gals/100ft2.

#### If a non-skid surfacing is desired, immediately broadcast ALSAN COATING SIL WALKWAY GRANULES in the wet walkway coat until refusal and allow to cure.

#### Remove loose granules.

### HEAVY TRAFFIC AREAS:

#### Brush or roll a base layer) of ALSAN COATING SIL WALKWAY GRADE at designated walkway area at a rate of 2.0 gals/100ft2.

#### Install POLYFLEECE into wet base layer followed by a top layer of ALSAN COATING SIL WALKWAY GRADE at a rate of 2.0 gals/100ft2 and allow to cure.

#### Brush or roll an additional layer of ALSAN COATING SIL WALKWAY GRADE at designated walkway area at a rate of 2.0 gals/100ft2.

#### If a non-skid surfacing is desired, brush or roll an additional layer of ALSAN COATING SIL WALKWAY GRADE at designated walkway area at a rate of 2.0 gals/100ft2 and immediately broadcast ALSAN COATING SIL WALKWAY GRANULES in the wet walkway coat until refusal and allow to cure.

#### Remove loose granules.

## CLEAN UP:

### Clean up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

END OF SECTION