SECTION 07 52 16

STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

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:

#### Preparation of [existing][new][concrete][steel][wood][gypsum][cementitious wood fiber] roof deck, and all flashing substrates.

#### Anchor Sheet/Base Sheet mechanically fastened.

#### SBS-modified bitumen base ply(s), [heat-welded][cold adhesive-applied][self-adhesive][asphalt-applied][mechanically fastened].

#### SBS-modified bitumen cap sheet, [heat-welded][cold adhesive-applied][self-adhesive].

##### [Granule surfacing: Roof granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.]

##### [Granule surfacing: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).]

#### SBS-modified bitumen membrane flashings.

#### Liquid-applied, reinforced flashings.

#### Refer to related Sections for Insulation, Coverboard and Roof Edge Systems

#### All related materials and labor required to complete specified roofing necessary to receive specified manufacturer’s warranty.

## RELATED SECTIONS

### Division 010000 – General Requirements

### Division 011000 – Summary of Work

### Division 072200 – Roof Insulation

### Division 072713 – Modified Bituminous Sheet Vapor Retarders

### Division 076200 – Sheet Metal Flashing and Trim

## DEFINITIONS

### ASTM D 1079-Definitions of Term Relating to Roofing and Waterproofing.

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

## REFERENCES

### AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.

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

#### ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.

#### ASTM C 920 - Standard Specification for Elastomeric Joint Sealants

#### ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.

#### ASTM D 312- Standard Specification for Asphalt Used in Roofing.

#### ASTM D 1863 – Standard Specification for Mineral Aggregate Used on Built-Up Roofs.

#### ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

#### ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

#### ASTM D 3019 - Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered.

#### ASTM D 3746 - Standard Test Method for Impact Resistance of Bituminous Roofing System.

#### ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.

#### ASTM D 4601 - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.

#### ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.

#### ASTM D 5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement)

#### ASTM D 6162 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

#### ASTM D 6163 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

#### ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

#### ASTM D 6298 - Standard Specification for Fiberglass Reinforced Styrene-Butadiene-Styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface.

#### ASTM D 7379 - Standard Test Methods for Strength of Modified Bitumen Sheet Material Laps Using Cold Process Adhesive.

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

#### ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

### AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

#### ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.

#### ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.

#### ANSI/SPRI IA-1, Standard Field Test Procedure for Determining the Mechanical Uplift Resistance of Insulation Adhesives over Various Substrates.

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

### CANADIAN GENERAL STANDARDS BOARD (CGSB):

#### CGSB 37-GP 56M- Standard for: Modified Bituminous, Prefabricated, and Reinforced for Roofing.

### COOL ROOF RATING COUNCIL (CRRC)

### EPA ENERGY STAR

### FACTORY MUTUAL (FM):

#### FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.

#### FM 4470 - Approval Standard - Class I Roof Covers.

### FLORIDA BUILDING CODE (FBC):

#### 20XX Florida Building Code (FBC).

### INTERNATIONAL CODES COUNCIL (ICC):

#### 20XX International Building Code (IBC).

### NATIONAL ROOFING CONTRACTORS’ ASSOCIATION (NRCA).

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

#### UL 1256 – Fire Test of Roof Deck Constructions.

## 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 warranty from the manufacturer and contractor.

### Provide roof plan and representative detail drawings.

## INFORMATIONAL SUBMITTALS

### Submit a letter from the roofing manufacturer indicating the contractor is an authorized applicator.

## CLOSEOUT SUBMITTALS

### Warranty: Provide manufacturers and contractor’s warranties upon project completion.

## QUALITY ASSURANCE

### MANUFACTURER QUALIFICATIONS:

#### Manufacturer shall have 20 years of manufacturing experience.

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

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

### 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 same or similar materials specified.

#### Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roofing from beginning 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.

## DELIVERY, STORAGE AND HANDLING

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

### Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.

### When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with “breathable” tarpaulins to protect materials from precipitation and to prevent exposure to condensation.

### Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.

### 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.

## SITE CONDITIONS

### SAFETY:

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

#### Heat-welding shall include heating the specified membrane ply using propane roof torches or electric hot-air welding equipment. The contractor shall determine when and where conditions are appropriate to utilize heat-welding equipment. When conditions are determined by the contractor to be unsafe to proceed, equivalent SBS-modified bitumen materials and methods shall be utilized to accommodate requirements and conditions.

#### Refer to NRCA CERTA recommendations, local codes and building owner’s requirements for hot work operations.

#### The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid-applied, or semi-solid roofing materials. 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 requirements and conditions.

#### The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. 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 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 temperature 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 roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.

#### Mopping asphalt application: Primer, where used, shall be fully dry before applying hot asphalt. Take all necessary measures and monitor all conditions, to ensure the specified asphalt temperature is no less than 400°F (204°C) at the point of contact with the specified membrane as it is unrolled into the hot asphalt.

#### Cold adhesive application: Primer, where used, shall be fully dry before proceeding. During cold weather, store the specified membrane adhesives, flashing cements and mastics in heated storage areas. Take all necessary measures and monitor application conditions, to ensure the adhesive and cement materials are no less than 70°F (21°C) at the point of contact with the membrane.

#### Self-adhesive membrane application: During cold weather, store the specified self-adhesive membrane and primer materials in heated storage areas to ensure materials remain no less than 70°F (21°C) during application. Ensure conditions allow primer to remain tacky, but not wet so that primer will not transfer to finger when touched. Self-adhesive primer shall not fully dry and lose tack before applying the self-adhesive membrane. Ensure conditions remain satisfactory to achieve membrane adhesion as specified.

#### Heat-Welding Application: Take all necessary precautions and measures to monitor conditions to ensure all environmental conditions are safe to use roof torches and hot-air welding equipment. Combustibles, flammable liquids, and solvent vapors that represent a hazard shall be eliminated. Flammable primers and cleaners shall be fully dry before proceeding with heat-welding operations. Prevent or protect wood, paper, plastics, and other such combustible materials from direct exposure to open flames from roof torches. Refer to NRCA CERTA recommendations.

## PERFORMANCE REQUIREMENTS

### WIND UPLIFT RESISTANCE:

#### Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580, or UL 1897.

##### Roof System Design Pressures: Calculated in accordance with ASCE 7, or applicable standard, for the specified roof system attachment requirements.

##### Design Pressures:

###### Field of Roof (Zone 1’): [- 0.00 psf.]

###### Field of Roof (Zone 1): [- 0.00 psf.]

###### Perimeter of Roof (Zone 2): [- 0.00 psf.]

###### Corners of Roof (Zone 3): [- 0.00 psf.]

##### Approval Rating:

###### FM 1-[00]

###### ANSI/FM 4474 Maximum Design Pressure -00.0 psf

###### Miami-Dade NOA Maximum Design Pressure -00.0 psf

###### FBC Approval, Maximum Design Pressure -00.0 psf

### FIRE CLASSIFICATION:

#### Performance testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470 to meet the [1/4]:12 roof slope requirement.

##### Meets requirements of UL Class A or FM Class A.

#### Performance testing shall be in accordance with UL 1256, FM 4450 or FM 4470 to meet the specified requirements for interior flame spread and fuel contribution.

##### Meets requirements of UL 1256, or FM Class 1.

### ROOF SLOPE:

#### Finished roof slope for SBS modified bitumen surfaces shall be ¼ inch per foot (2 percent) minimum for roof drainage.

### IMPACT RESISTANCE:

#### Performance testing for impact resistance shall be in accordance with FM 4450, FM 4470, ASTM D3746 or CGSB 37-GP 56M to meet the specified impact resistance requirements.

##### Meets requirements for FM-SH (Severe Hail), ASTM D3746, or CGSB 37-GP 56M.

#### Performance testing for Large Missile Impact Resistance shall be in accordance with SSTD 12-99.

##### Meets requirements for State of Florida Public Shelter Design Criteria for Enhanced Hurricane Protection Areas.

### CYCLIC FATIGUE:

#### The roof system shall pass ASTM D5849 Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement). Passing results shall show no signs of cracking, splitting, or tearing over the joint.

##### Roof system shall pass Test Condition 4, tested at 14°F (-10°C) in accordance with ASTM D5849. (SOPREMA ELASTOPHENE glass fiber reinforced membranes).

##### Roof system shall pass Test Condition 5, tested at -4°F (-20°C) in accordance with ASTM D5849. (SOPREMA SOPRALENE polyester reinforced membranes).

### LEED SUSTAINABLE SITES (SS) CREDITS:

#### SS 7.2, Heat Island Effect-Roof. Cap sheet shall be surfaced with highly reflective mineral granules. (SOPREMA SG Granule surfacing basis of design):

##### Seventy-five percent of the low-slope roof area 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 cap sheet shall be granule-surfaced (SG bright white granule-surfaced cap sheet is basis of design). Cap sheet shall be listed by the Cool Roof Rating Council (CRRC) with the following minimum published values, including CRRC 3-year Rapid Ratings:

##### Solar Reflectance: Initial: 0.7 3-year: 0.62

##### Thermal Emittance: Initial: 0.9 3-year: 0.9

##### Solar Reflectance Index (SRI): Initial: 86 3-year: 75

## WARRANTY

### Manufacturer's No Dollar Limit (NDL) Warranty. The manufacturer shall provide the owner with the manufacturer’s warranty providing labor and materials 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][5]-years from completion date.

# PRODUCTS

## MANUFACTURER

### SINGLE SOURCE MANUFACTURER: All SBS modified bitumen membrane and flashing sheets shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.

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

### PRODUCT QUALITY ASSURANCE PROGRAM: Manufacturer shall be an ISO 9001 registered company. A ‘Quality Compliance Certificate (QCC) for reporting/confirming the tested values of the SBS-Modified Bitumen Membrane Materials will be supplied upon request.

### ACCEPTABLE MANUFACTURER:

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

#### Acceptable Alternate Manufacturers: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## ROOFING SYSTEM

### ROOFING SYSTEM BASIS OF DESIGN: SOPREMA

#### The roof membrane assembly shall consist of a multi-ply, prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, secured to a prepared substrate. Reinforcement mats shall be impregnated (saturated) and coated with a high quality SBS modified bitumen blend. The cross section of the sheet material shall contain no oxidized or non-SBS modified bitumen.

## SBS-MODIFIED BITUMEN MEMBRANES

### BASE SHEET/ANCHOR SHEET:

#### BASE SHEET/ANCHOR SHEET, MECHANICALLY FASTENED:

##### SOPREMA MODIFIED SOPRA-G: SBS-modified bitumen coated and impregnated glass fiber base sheet, mechanically fastened, approved for use with torch, asphalt, or cold adhesive membrane applications.

###### Width: 36 in (0.914 m)

###### Meets or exceeds ASTM D4601, Type II, and UL Type G2.

##### SOPREMA SOPRABASE S: SBS-modified bitumen coated, asphalt impregnated, non-woven polyester base sheet with sanded surface, mechanically fastened, approved for use with asphalt or cold adhesive membrane applications.

###### Thickness: 48 mils (1.2 mm)

###### Width: 39.4 in (1 m)

###### Meets or exceeds physical property testing in accordance with ASTM D5147.

##### SOPREMA SOPRABASE TG: SBS-modified bitumen coated, asphalt impregnated, non-woven polyester base sheet with plastic burn-off film on the top surface, mechanically fastened, approved for use with torch-applied membrane applications.

###### Thickness: 60 mils (1.5 mm)

###### Width: 39.4 in (1 m)

###### Meets or exceeds physical property testing in accordance with ASTM D5147.

##### SOPREMA ULTRA-STICK NAIL BASE: SBS-modified bitumen, glass fiber base sheet with a permanent film on the top surface, mechanically fastened, approved for use with SURESTICK or torch-applied membrane applications.

###### Thickness: 67 mils (1.7 mm)

###### Width: 39.4 in (1 m)

###### Meets or exceeds ASTM D4601, Type I.

### BASE PLY:

#### BASE PLY, MECHANICALLY FASTENED:

##### SOPREMA SOPRAFIX BASE 611: SBS-modified bitumen membrane ply with plastic burn-off film on the top surface and side-laps. Sanded bottom surface. Non-woven polyester reinforcement. Mechanically fastened in 4 in (minimum) heat-welded side-laps. Base ply for heat-welded cap sheet applications. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 98 mils (2.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 94 lb (42.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/m2): 58 lb (2855 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 65%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRAFIX BASE 612: SBS-modified bitumen membrane ply with plastic burn-off film on the top and bottom surfaces. Non-woven polyester reinforcement. Mechanically fastened in 4 in (minimum) heat-welded side-laps. Base ply for heat-welded cap sheet applications. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 82 lb (37.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 76 lb (3711 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRAFIX BASE 613: SBS-modified bitumen membrane ply with plastic burn-off film on the top and bottom surfaces. Non-woven polyester reinforcement. Mechanically fastened in 5 in heat-welded side-laps using SOPREMA TRI-FIXX fasteners and 3 in plates. Base ply for heat-welded cap sheet applications. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 79lb (36 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 74 lb (3603 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRAFIX BASE 614: SBS-modified bitumen membrane ply with plastic burn-off film on the top and bottom surfaces. Non-woven polyester reinforcement. Mechanically fastened in 4 in (minimum) heat-welded side-laps. Base ply for heat-welded cap sheet applications. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 107 lb (48.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 99 lb (4865 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRAFIX BASE 622: SBS-modified bitumen membrane ply with plastic burn-off film in side-laps only, and sanded top and bottom surfaces. Non-woven polyester reinforcement. Mechanically fastened in 4 in (minimum) heat-welded side-laps. Base ply for cold adhesive-applied and self-adhered cap sheet applications. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 110 mils (2.8 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 74 lb (33.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 68 lb (3341 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

#### BASE PLY, HEAT-WELDED:

##### SOPREMA ELASTOPHENE FLAM: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 82 lb (4004 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE FLAM 2.2: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 109 lb (49.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 67 lb (3289 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.5 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE FLAM HR 2.2: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Glass grid reinforcement. Meets or exceeds ASTM D6163, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 55 lb (2706g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE FLAM HR 3.0: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Glass grid reinforcement. Meets or exceeds ASTM D6163, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 81 lb (36.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 75.3 lb (3674 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE FLAM HS: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Composite glass and non-woven polyester reinforcement. Meets or exceeds ASTM D6162, Type III, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 75 lb (34.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 70 lb (3423 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 405 lbf/in (70.8 kN/m), XMD 375 lbf/in (65.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 7%, XMD 8%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 290 lbf/in (50.8 kN/m), XMD 285 lbf/in (49.9 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 15%, XMD 20%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 540 lbf (2402 N), XMD 550 lbf (2447 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE FLAM HS FR: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Composite glass and non-woven polyester reinforcement. Meets or exceeds ASTM D6162, Type III, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 71 lb (32.4 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 66 lb (3423 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 405 lbf/in (70.8 kN/m), XMD 375 lbf/in (65.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 7%, XMD 8%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 290 lbf/in (50.8 kN/m), XMD 285 lbf/in (49.9 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 15%, XMD 20%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 540 lbf (2402 N), XMD 550 lbf (2447 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE FLAM 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 81 lb (36.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 75 lb (3662 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE FLAM 250: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 107 lb (48.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 99 lb (4834 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE SP 2.2: SBS-modified bitumen membrane with plastic burn-off film on the bottom surface and a sanded top surface. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 101 lb (45.8 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 62.6 lb (3054g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.5 kN/m), XMD 90 lbf/in (15.7 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE SP 3.0: SBS-modified bitumen membrane with plastic burn-off film on the bottom surface and sanded top surface. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 90 lb (40.8 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 83.6 lb (4082 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA SOPRALENE 180 SP 3.0: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 83 lb (37.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 77 lb (3758 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 SP 3.5: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 85 lb (4188 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 250 SP 4.0: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 108 lb (49.0 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 100 lb (4882 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

#### BASE PLY, COLD ADHESIVE and HOT ASPHALT APPLIED:

##### SOPREMA ELASTOPHENE SANDED 2.2: SBS-modified bitumen membrane ply sanded on both top and bottom surfaces. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 102 lb (46.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 63 lb (3074 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.5 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE SANDED 3.0: SBS-modified bitumen membrane ply sanded on both top and bottom surfaces. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 97 lb (44 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 90.1 lb (4400 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE HR SANDED 2.2: SBS-modified bitumen membrane ply sanded on both top and bottom surfaces. Glass grid reinforcement. Meets or exceeds ASTM D6163, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39 in

###### Coverage: 147 square foot per roll.

###### Roll weight: 92 lb (41.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 57 lb (2782 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 15%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE HR SANDED 3.0: SBS-modified bitumen membrane ply sanded on both top and bottom surfaces. Glass grid reinforcement. Meets or exceeds ASTM D6163, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39 in (1 m)

###### Length: 33 ft (10 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 82 lb (3992 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 15%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE HS SANDED: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Composite glass and non-woven polyester reinforcement. Meets or exceeds ASTM D6162, Type III, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 73 lb (33.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 68 lb (3321 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 405 lbf/in (70.8 kN/m), XMD 375 lbf/in (65.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 7%, XMD 8%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 290 lbf/in (50.8 kN/m), XMD 285 lbf/in (49.9 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 15%, XMD 20%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 540 lbf (2402 N), XMD 550 lbf (2447 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 SANDED 2.2: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 91 mils (2.3 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 92 lb (41.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 57 lb (2782 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRALENE 180 SANDED: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 84 lb (38.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 78 lb (3808 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRALENE 250 SANDED: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 108 lb (49.0 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 100 lb (4882 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE PS 2.2: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 104 lb (47.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 64 lb (3140 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.5 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE PS 3.0: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 94 lb (42.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 87 lb (4264 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA SOPRALENE 180 PS 2.2: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 97 mils (2.4 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 54.5 lb (2661 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 PS 3.0: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 80 lb (36.4 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 74.5 lb (3637 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA MODIFIED SOPRA-G: SBS-modified bitumen coated and impregnated glass fiber base sheet, mechanically fastened, approved for use with torch, asphalt, or cold adhesive membrane applications.

###### Width: 36 in (0.914 m)

###### Meets or exceeds ASTM D4601, Type II, and UL Type G2.

##### SOPREMA SOPRA IV: Asphalt-impregnated glass felt ply.

###### Width: 36 in (0.914 m)

###### Meets or exceeds ASTM D2178, Type IV, UL Type G1.

##### SOPREMA SOPRA VI: Asphalt-impregnated glass felt ply.

###### Width: 36 in (0.914 m)

###### Meets or exceeds ASTM D2178, Type VI, UL Type G1.

#### BASE PLY, SELF-ADHESIVE:

##### SOPREMA ELASTOPHENE STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a sanded top surface. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 73 lb (33.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 45.5 lb (2220 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.5 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA ELASTOPHENE FLAM STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a plastic burn-off film top surface. Glass fiber reinforcement. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 87 mils (2.2 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 75 lb (33.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 46 lb (2257 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 100 lbf/in (17.6 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 45%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

##### SOPREMA SOPRALENE STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a sanded top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 98 mils (2.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 103 lb (46.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 63 lb (3098 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C):

##### SOPREMA SOPRALENE FLAM STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a plastic burn-off film top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 106 mils (2.7 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 76 lb (34.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 54 lb (2636 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA ELASTOPHENE ULTRA-STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a permanent film top surface. Glass fiber reinforced. Meets or exceeds ASTM D6163, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 102 mils (2.6 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 101 lb (46 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 100 lbf (445 N), XMD 80 lbf (356 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

##### SOPREMA SOPRALENE ULTRA-STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a permanent film top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 102 mils (2.6 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 108 lb (48.9 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 75 lbf/in (13.1 kN/m), XMD 50 lbf/in (8.8 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 75%, XMD 75%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 110%, XMD 110%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 115 lbf (511 N), XMD 90 lbf (400 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.05%

### FLASHING BASE PLY

#### FLASHING BASE PLY, HEAT-WELDED:

##### SOPREMA SOPRALENE FLAM 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 81 lb (36.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 75 lb (3662 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE FLAM 250: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 107 lb (48.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 99 lb (4834 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 SP 3.0: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 83 lb (37.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 77 lb (3758 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 SP 3.5: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 85 lb (4188 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 250 SP 4.0: SBS-modified bitumen membrane with a plastic burn-off film on the bottom surface and a sanded top surface. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 108 lb (49.0 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 100 lb (4882 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

#### FLASHING BASE PLY, HEAT-WELDED, PARTIALLY ADHERED:

##### SOPREMA COLVENT 180 TG: SBS-modified bitumen membrane ply with 1 in wide factory-applied, heat activated bitumen strips on the underside and a sanded top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 90 lb (40.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 83 lb (4060 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA COLVENT FLAM 180 TG: SBS-modified bitumen membrane ply with 1 in wide factory-applied, heat activated bitumen strips on the underside and a plastic burn-off film top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 85 lb (38.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 79 lb (3876 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

#### FLASHING BASE PLY, FLASHING CEMENT-APPLIED:

##### SOPREMA SOPRALENE 180 SANDED 2.2: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 91 mils (2.3 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 92 lb (41.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 57 lb (2782 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 SANDED: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 84 lb (38.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 78 lb (3808 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 250 SANDED: SBS-modified bitumen membrane sanded on both top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type II, Grade S, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 108 lb (49.0 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 100 lb (4882 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 PS 2.2: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 97 mils (2.4 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 54.5 lb (2661 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE 180 PS 3.0: SBS-modified bitumen membrane with sand on the bottom surface and plastic burn-off film on the top surface for heat-welding side and end-laps and heat welding sheets above. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 118 mils (3.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 80 lb (36.4 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 74.5 lb (3637 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

#### FLASHING BASE PLY, SELF-ADHESIVE APPLIED:

##### SOPREMA SOPRALENE STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a sanded top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 98 mils (2.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 103 lb (46.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 63 lb (3098 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE FLAM STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a plastic burn-off film top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 106 mils (2.7 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 76 lb (34.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 54 lb (2636 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 85 lbf/in (14.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 65%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

##### SOPREMA SOPRALENE ULTRA-STICK: SBS-modified bitumen, self-adhesive membrane with release film on the bottom surface and a permanent film top surface. Non-woven polyester reinforced. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

###### Thickness: 102 mils (2.6 mm)

###### Width: 39.4 in (1 m)

###### Length: 49.2 ft (15 m)

###### Roll weight: 108 lb (48.9 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 75 lbf/in (13.1 kN/m), XMD 50 lbf/in (8.8 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 75%, XMD 75%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 110%, XMD 110%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 115 lbf (511 N), XMD 90 lbf (400 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.05%

### CAP SHEET:

#### CAP SHEET, HEAT-WELDED:

##### SOPREMA ELASTOPHENE FLAM LS FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for low-slope (LS) roof applications, ½:12 or less. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 106 lb (48.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 98.5 lb (4808 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (120°C):

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FLAM FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 106 lb (48.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 98.5 lb (4808 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (120°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FLAM FR+GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 97 lb (44 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 90 lb (4380 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (120°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FLAM HR FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Glass grid reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type II, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 88 lb (39.9 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 80.9 lb (3949 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FLAM HS FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Composite, glass fiber and non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6162, Type III, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 88 lb (4299 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 405 lbf/in (70.8 kN/m), XMD 375 lbf/in (65.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 7%, XMD 8%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 290 lbf/in (50.8 kN/m), XMD 285 lbf/in (49.9 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 15%, XMD 20%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 540 lbf (2402 N), XMD 550 lbf (2447 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 118 lb (53.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5371 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 180 FR+GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 119 lb (54 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5395 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 250 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 113 lb (51.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5371 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 250 FR+GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 116 lb (52.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109.9 lb (5365 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALAST 50 TV ALU: SBS-modified bitumen membrane Cap Sheet with a plastic burn-off film bottom surface and aluminum foil-clad top surface. Glass grid reinforced. UL Class A for specified roof slope requirements. All SBS modified bitumen foil-clad membrane and flashing sheets shall be manufactured by the supplier. Meets or exceeds ASTM D6298, per ASTM D5147 test methods:

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 94 lb (42.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 87.5 lb (4273 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 200 lbf/in (35.2 kN/m), XMD 175 lbf/in (30.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.7 kN/m), XMD 95 lbf/in (16.7 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 20%, XMD 20%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 190 lbf (845 N), XMD 205 lbf (912 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.2%

###### Compound stability, °F (°C): MD/XMD: 230°F (110°C).

###### Aluminum foil-clad surfacing, listed by the Cool Roof Rating Council (CRRC) and EPA EnergyStar Approved:

#### CAP SHEET, COLD ADHESIVE APPLIED:

##### SOPREMA ELASTOPHENE LS FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for low-slope (LS) roof applications. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Roll width: 39.4 in (1 m)

###### Roll length: 32.8 ft (10 m)

###### Roll weight: 107 lb (48.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 98 lb (4853 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C):

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 107 lb (48.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 99.4 lb (4853 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE FR+GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 97.9 lb (48 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 95 lb (4627 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267 N), XMD 60 lbf (267 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C).

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE HR FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Glass grid reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type II, Grade G

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 109 lb (49.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 101 lb (4925 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE HS FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Composite, glass fiber and non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6162, Type III, Grade G

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 88 lb (4300 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 405 lbf/in (70.8 kN/m), XMD 375 lbf/in (65.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 7%, XMD 8%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 290 lbf/in (50.8 kN/m), XMD 285 lbf/in (49.9 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 15%, XMD 20%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 540 lbf (2402 N), XMD 550 lbf (2447 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 117 lb (53.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109 lb (5322 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 180 FR+ GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 117 lb (53.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109 lb (5322 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 250 FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 111 lb (50.4 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 107 lb (5214 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 250 FR+ GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 115 lb (52.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 107.5 lb (5250 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALAST 50 TV ALU SANDED: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and aluminum foil-clad top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. All SBS modified bitumen foil-clad membrane and flashing sheets shall be manufactured by the supplier. Meets or exceeds ASTM D6298.

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 88 lb (4297 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 200 lbf/in (35.2 kN/m), XMD 175 lbf/in (30.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.7 kN/m), XMD 95 lbf/in (16.7 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 20%, XMD 20%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 190 lbf (845 N), XMD 205 lbf (912 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.2%

###### Compound stability, °F (°C): MD/XMD: 230°F (110°C)

###### Aluminum foil-clad surfacing, listed by the Cool Roof Rating Council (CRRC) and EPA EnergyStar Approved:

#### CAP SHEET, SELF-ADHESIVE APPLIED:

##### SOPREMA ELASTOPHENE STICK FR GR: SBS-modified bitumen self-adhesive Cap Sheet with release film on the bottom surface and mineral granule top surface. Glass fiber reinforcement. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G

###### Thickness: 142 mils (3.6 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 93 lb (42.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 86.4 lb (4218 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 4%, XMD 4%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 250°F (121°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE STICK HR FR GR: SBS-modified bitumen self-adhesive Cap Sheet with release film on the bottom surface and mineral granule top surface. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type II, Grade G.

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 88 lb (40 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 81.4 lb (3972 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA ELASTOPHENE ULTRA-STICK FR GR: SBS-modified bitumen, self-adhesive Cap Sheet with release film on the bottom surface and a mineral granule top surface. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type I, Grade G.

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 100 lb (45.5 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 5%, XMD 4%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 100 lbf (445 N), XMD 80 lbf (356 N)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE ULTRA-STICK FR GR: SBS-modified bitumen, self-adhesive Cap Sheet with release film on the bottom surface and a mineral granule top surface. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G.

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 100 lb (45.5 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.6 kN/m), XMD 75 lbf/in (13.1 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 70%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 75%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 130 lbf (578.3 N), XMD 110 lbf (489.3 N)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

### FLASHING CAP SHEET

#### FLASHING CAP SHEET, HEAT-WELDED:

##### SOPREMA SOPRALENE FLAM 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 118 lb (53.5 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5371 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 180 FR+GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 119 lb (54 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5395 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 250 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 113 lb (51.3 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5371 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE FLAM 250 FR+GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 116 lb (52.6 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109.9 lb (5365 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALAST 50 TV ALU: SBS-modified bitumen membrane Cap Sheet with a plastic burn-off film bottom surface and aluminum foil-clad top surface. Glass grid reinforced. UL Class A for specified roof slope requirements. All SBS modified bitumen foil-clad membrane and flashing sheets shall be manufactured by the supplier. Meets or exceeds ASTM D6298

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 94 lb (42.7 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 87.5 lb (4273 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 200 lbf/in (35.2 kN/m), XMD 175 lbf/in (30.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.7 kN/m), XMD 95 lbf/in (16.7 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 20%, XMD 20%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 190 lbf (845 N), XMD 205 lbf (912 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.2%

###### Compound stability, °F (°C): MD/XMD: 230°F (110°C)

###### Aluminum foil-clad surfacing listed by the Cool Roof Rating Council (CRRC) and EPA EnergyStar Approved:

#### FLASHING CAP SHEET, FLASHING CEMENT-APPLIED:

##### SOPREMA SOPRALENE 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109 lb (5322 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 180 FR+ GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 117 lb (53.1 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 109 lb (5322 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 35%, XMD 40%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 65%, XMD 80%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 250 FR GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 111 lb (50.4 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 107 lb (5214 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE 250 FR+ GR: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type II, Grade G

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 115 lb (52.2 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 107.5 lb (5250 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 160 lbf/in (28.0 kN/m), XMD 110 lbf/in (19.3 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 30%, XMD 35%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 135 lbf/in (23.6 kN/m), XMD 100 lbf/in (17.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 55%, XMD 60%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 165 lbf (734 N), XMD 120 lbf (534 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.5%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALAST 50 TV ALU SANDED: SBS-modified bitumen membrane Cap Sheet with a sanded bottom surface and aluminum foil-clad top surface. Glass fiber reinforced. UL Class A for specified roof slope requirements. All SBS modified bitumen foil-clad membrane and flashing sheets shall be manufactured by the supplier. Meets or exceeds ASTM D6298

###### Thickness: 157 mils (4.0 mm)

###### Width: 39.4 in (1 m)

Length: 32.8 ft (10 m)

###### Roll weight: 95 lb (43 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 88 lb (4297 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 200 lbf/in (35.2 kN/m), XMD 175 lbf/in (30.8 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.7 kN/m), XMD 95 lbf/in (16.7 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 20%, XMD 20%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 50%, XMD 50%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 190 lbf (845 N), XMD 205 lbf (912 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.2%

###### Compound stability, °F (°C): MD/XMD: 230°F (110°C)

###### Aluminum foil-clad surfacing, listed by the Cool Roof Rating Council (CRRC) and EPA EnergyStar Approved:

#### FLASHING CAP SHEET, SELF-ADHESIVE APPLIED:

##### SOPREMA ELASTOPHENE STICK HR FR GR: SBS-modified bitumen self-adhesive Cap Sheet with release film on the bottom surface and mineral granule top surface. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6163, Type II, Grade G

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 88 lb (40 kg)

###### Net mass per unit area, lb/100 sq ft (g/sq m): 81.4 lb (3972 g)

###### Peak load @ 0°F (-18°C), lbf/in (kN/m): MD 185 lbf/in (32.5 kN/m), XMD 165 lbf/in (28.9 kN/m)

###### Elongation at peak load @ 0°F (-18°C), lbf/in (kN/m): MD 6%, XMD 6%

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 110 lbf/in (19.4 kN/m), XMD 105 lbf/in (18.5 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 10%, XMD 10%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 60%, XMD 45%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 180 lbf (801 N), XMD 190 lbf (845 N)

###### Low temperature flexibility, °F (°C): MD/XMD: -15°F (-26°C)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Compound stability, °F (°C): MD/XMD: 240°F (116°C)

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

##### SOPREMA SOPRALENE ULTRA-STICK FR GR: SBS-modified bitumen, self-adhesive Cap Sheet with release film on the bottom surface and a mineral granule top surface. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G.

###### Thickness: 138 mils (3.5 mm)

###### Width: 39.4 in (1 m)

###### Length: 32.8 ft (10 m)

###### Roll weight: 100 lb (45.5 kg)

###### Peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 95 lbf/in (16.6 kN/m), XMD 75 lbf/in (13.1 kN/m)

###### Elongation at peak load @ 73.4°F (23°C), lbf/in (kN/m): MD 70%, XMD 70%

###### Ultimate Elongation @ 73.4°F (23°C), lbf/in (kN/m): MD 75%, XMD 75%

###### Tear Strength @ 73.4°F (23°C), lbf (N): MD 130 lbf (578.3 N), XMD 110 lbf (489.3 N)

###### Dimensional stability, %: MD/XMD: Less than 0.1%

###### Granule Surfacing:

White mineral granules.

SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

SOPREMA ECO3 GRANULE: Smog-reducing mineral granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rainwater.

#### FLASHING CAP SHEET, LIQUID-APPLIED:

##### SOPREMA ALSAN RS 230 FLASH: Catalyzed polymethyl methacrylate (PMMA) liquid resin with polyester reinforcing fleece fabric fully embedded into the resin to form fully reinforced waterproofing membrane flashings. All LIQUID-APPLIED flashing shall be manufactured by the single-sourced membrane supplier.

###### VOC Content: <5 g/l

###### SOPREMA ALSAN RS 230 FLASH: Polymethyl methacrylate (PMMA) liquid resin.

###### SOPREMA ALSAN RS CATALYST POWDER: Reactive agent added to the liquid resin to induce polymerization.

###### SOPREMA ALSAN RS FLEECE: Polyester reinforcement fabric.

###### Color: Flash color and finish to match Field.

##### SOPREMA ALSAN RS 260 LO (Low Odor) FLASH: Catalyzed polymethacrylate (PMA) liquid resin with polyester reinforcing fleece fabric fully embedded into the resin to form fully reinforced waterproofing membrane flashings. All LIQUID-APPLIED flashing shall be manufactured by the single-sourced membrane supplier.

###### VOC Content: <5 g/l

###### SOPREMA ALSAN RS 260 LO FLASH: Polymethacrylate (PMA) Low Odor liquid resin.

###### SOPREMA ALSAN RS CATALYST POWDER: Reactive agent added to the liquid resin to induce polymerization.

###### SOPREMA ALSAN RS FLEECE: Polyester reinforcement fabric.

###### Color: Flash color and finish to match Field.

## ACCESSORIES

### PRIMERS: NOTE: Priming is not required for SOPREMA COLPLY EF ADHESIVE and SOPREMA COLPLY EF FLASHING CEMENT applications.

#### SOPREMA ELASTOCOL 500 Primer: Asphalt cut-back primer. Primer for the preparation of membrane substrates for asphalt, heat-welded, hot asphalt and COLPLY ADHESIVE, solvent-based, cold adhesive-applied and cement applications.

##### Meets or exceeds ASTM D41

##### VOC content: 350 g/L or less.

#### SOPREMA ELASTOCOL 350 Primer: Polymer emulsion primer, meeting low VOC requirements for the preparation of membrane substrates for hot asphalt, torch and SOPREMA COLPLY adhesive and flashing cement applications.

#### SOPREMA ELASTOCOL STICK ZERO Primer: 0 g/L VOC solvent, self-adhesive membrane primer. Low VOC, solvent-based primer for the preparation of membrane substrates for self-adhered SBS membrane and self-adhesive SBS flashing applications.

#### SOPREMA ELASTOCOL STICK Primer: Self-adhesive membrane primer. SBS polymer, resin and, solvent-based primer for the preparation of membrane substrates for self-adhesive SBS membrane and self-adhered SBS flashing applications.

#### SOPREMA ELASTOCOL STICK H2O: Self-adhesive membrane primer. Water based polymer emulsion primer for the preparation of membrane substrates for self-adhesive SBS membrane and self-adhered SBS flashing applications.

#### SOPREMA ALSAN RS 222 PRIMER: Rapid curing, polymethyl methacrylate (PMMA) liquid resin used to promote adhesion of PMMA/PMA membranes over asphaltic substrates, wood, concrete and approved waterproofing board substrates.

##### VOC content: 2.5 g/L

##### Color: Clear

#### SOPREMA ALSAN RS LO PRIMER: Low odor, two-part, epoxy-based primer for concrete and approved substrates.

##### SOPREMA ALSAN RS LO PRIMER PART A:

###### VOC content: <100 g/L

###### Color: Ivory

##### SOPREMA ALSAN RS LO PRIMER PART B:

###### VOC content: <100 g/L

###### Color: White

#### SOPREMA ALSAN RS METAL PRIMER: Solvent-based primer used to improve the adhesion of PMMA/PMA membranes to metal substrates.

##### VOC content: 550 g/L

##### Color: Off White

### MEMBRANE ADHESIVES: select one of the options below

#### SOPREMA COLPLY ADHESIVE: SBS-modified bitumen membrane adhesive for use with sanded base ply and granule-surfaced Cap Sheet membranes.

##### VOC Content: 250 g/L or less.

##### Meets or exceeds ASTM D3019

#### SOPREMA COLPLY EF ADHESIVE: Premium, non-toxic, low odor, solvent-free, polymeric membrane adhesive for use with all SBS-modified bitumen sanded base ply and all Cap Sheet membrane applications.

##### VOC Content: 32 g/L or less VOC Content.

##### Meets or exceeds ASTM D7379

### MOPPING ASPHALT:

#### MOPPING ASPHALT: pre-approved in writing by membrane manufacturer for use for applying the specified SBS-modified bitumen membrane.

##### Application Rate: Solid mopping, full coverage at 23-25 lb per square and as required for specified approvals.

##### Application Temperature: Apply asphalt at the published EVT and no less than 400°F (204°C) at the point of contact when applying the SBS-modified bitumen membrane into the hot asphalt.

##### The Equiviscous Temperature (EVT), the finished blowing temperature (FBT) and the flash point (FP) shall be indicated on each container.

##### Meets or exceeds ASTM D312, Type IV as listed in Table I.

### FLASHING CEMENT: select one of the options below

#### SOPREMA COLPLY FLASHING CEMENT: SBS-modified bitumen membrane flashing cement for use with sanded base ply flashing and granule-surfaced Cap Sheet flashing.

##### VOC Content: 250 g/L or less.

##### Meets or exceeds ASTM D4586

#### SOPREMA COLPLY EF FLASHING CEMENT: Premium, non-toxic, low-odor, solvent-free, polymeric membrane flashing cement for use with sanded base ply and all sanded cap sheet flashing applications.

##### VOC Content: 32 g/L or less VOC Content.

### GENERAL PURPOSE ROOFING CEMENT AND MASTIC: select one of the options below

#### SOPREMA SOPRAMASTIC: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 5-gallon pails. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.

##### VOC Content: 190 g/L or less.

##### Meets or exceeds ASTM D4586, Type I, Class II.

#### SOPREMA SOPRAMASTIC: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 10.4 oz caulk tubes. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.

##### VOC Content: 190 g/L or less.

##### Meets or exceeds ASTM D4586, Type I, Class II.

#### SOPREMA SBL ROOF CEMENT: Asbestos-free, trowel grade elastomeric utility cement.

##### VOC Content: 226 g/L or less.

##### Meets or exceeds ASTM D4586, Type I, Class II.

#### SOPREMA SBL HP FLASHING CEMENT: Asbestos-free, trowel grade roof flashing cement.

##### VOC Content: 223g/L or less.

##### Meets or exceeds ASTM D4586, Type I, Class II.

### GENERAL PURPOSE SEALANT select one of the options below

#### SOPREMA SOPRAMASTIC SP1: General purpose, paintable, gun-grade, elastomeric, polyether moisture curing sealant for sealing SBS membrane terminations, Kynar 500 PVDF, horizontal and vertical construction joints.

##### VOC Content: 20 g/L or less.

##### Meets or exceeds ASTM C920, Type S, Grade NS, Class 50.

##### Standard color, custom color.

#### SOPREMA SOPRAMASTIC ALU: Modified bitumen mastic, aluminum hued for application to membrane edge and perimeter metal.

##### VOC Content: 270 g/L or less.

##### Standard color.

### BASE SHEET/ANCHOR SHEET FASTENERS select one of the options below

#### SOPREMA BASE SHEET FASTENER 1.2 in: Anchor/Base sheet fastener and metal stress plate.

#### SOPREMA BASE SHEET FASTENER BSF 1.7 in: Anchor/Base sheet fastener and metal stress plate.

#### SOPREMA TWIN-LOC NAIL: Preassembled nail and metal stress plate.

### MEMBRANE FASTENERS AND PLATES select one of the options below

#### SOPREMA #14 MP Fastener: Membrane base ply fastener.

#### SOPREMA #15 HD Fastener: Membrane base ply fastener.

#### SOPREMA #15 EL Fastener: Membrane base ply fastener.

#### SOPREMA 2 in SEAM PLATE: Membrane base ply seam plate.

#### SOPREMA 2.4 in SEAM PLATE: Membrane base ply seam plate.

#### SOPREMA SOPRAFIX MBB: Membrane in-seam batten bar.

#### SOPREMA SOPRAFIX MBB-R: Membrane in-seam recessed batten bar.

#### VERSA FAST FASTENERS and 3 in VERSA FAST PLATE: Membrane base ply fastener and seam plate assembly. Includes options for multiple fasteners per 3 in plate.

#### SOPREMA TRI-FIXX FASTENING SYSTEM: Membrane base ply fastening system consisting of three (3) pneumatically driven nails per 3 in metal seam plate.

#### SOPREMA TWIN-LOC NAIL: Preassembled nail and metal stress plate.

#### SOPREMA TWIN-LOC NAIL and TWIN-LOC COILED BATTEN BAR: TWIN-LOC NAIL without stress plate and 1 in wide coiled steel batten with recessed hole to fit TWIN-LOC nail.

### LIQUID-APPLIED REINFORCED FLASHING SYSTEM: select one of the options below

#### SOPREMA ALSAN FLASHING: Single-component, polyurethane-bitumen resin with polyester reinforcing fleece fabric fully embedded into the resin to form roof system flashings.

##### VOC Content: 250 g/L.

##### SOPREMA ALSAN FLASHING: Liquid resin, Meets or exceeds ASTM C836.

##### SOPREMA ALSAN POLYFLEECE: Non-woven polyester reinforcement.

##### Surfacing: SOPREMA ALSAN FLASHING with mineral granules broadcast into wet SOPREMA ALSAN FLASHING to match adjacent SBS-modified bitumen cap sheet.

#### SOPREMA ALSAN RS 230 FLASH: Rapid curing, polymethyl methacrylate (PMMA) liquid resin with an embedded polyester reinforcement fabric used for monolithic waterproofing flashing membranes. Not for use over SBS cap sheets adhered with solvent based SOPREMA COLPLY adhesive or flashing cement.

##### VOC content: 4.2 g/L

##### SOPREMA ALSAN RS CATALYST POWDER: Reactive agent added to the PMMA liquid resin to induce curing.

##### SOPREMA ALSAN RS FLEECE: Polyester reinforcement fabric.

##### Color: [White][Grey][Custom Color]

#### SOPREMA ALSAN RS 260 LO FLASH: Low odor, rapid curing, polymethacrylate (PMA) liquid resin with an embedded polyester reinforcement fabric used for monolithic waterproofing flashing membranes. Not for use over SBS cap sheets adhered with solvent based SOPREMA COLPLY adhesive or flashing cement.

##### VOC content: 0.5 g/L

##### SOPREMA ALSAN RS CATALYST POWDER: Reactive agent added to the PMMA liquid resin to induce curing.

##### SOPREMA ALSAN RS FLEECE: Polyester reinforcement fabric.

##### Color: [White][Grey][Custom Color]

### MINERAL GRANULES:

#### SOPREMA Granules: No. 11, mineral coated colored granules, color to match cap sheet, supplied by membrane cap sheet manufacturer.

##### SOPREMA GRANULES

##### SOPREMA SG GRANULES

##### SOPREMA ECO3 GRANULES

### EXPANSION JOINT:

#### SOPREMA SOPRAJOINT: Low-profile, polyester knit-reinforced, SBS-modified bitumen expansion joint membrane. Top surface consists of an aluminum-clad bond-breaker, with plastic burn-off film on the bottom surface for torch or hot air welding.

##### Thickness: 160 mils (4.0 mm)

##### Width: 18 in (457 mm)

##### Roll Length: 32.8 ft (10 m)

##### Expansion joint, maximum unsupported span: 2 in (51 mm)

##### Expansion joint, maximum displacement: 5/8 in (16 mm)

### WALKWAY PROTECTION:

#### SOPREMA SOPRAWALK: Polyester reinforced SBS modified bitumen walkway protection with a granule surface and sanded underside.

##### Thickness: 200 mils (5.0 mm)

##### Width: 39.4 in (1 m)

##### Roll Length: 26 ft (7.9 m)

##### Granule Surfacing:

###### Color: [Black][Grey][Tan]

### AGGREGATE SURFACING:

#### Aggregate: [Crushed stone][crushed slag][water-worn gravel] for use as a coarse mineral aggregate on built-up roofs, sorted and graded per ASTM D 1863.

# EXECUTION

## EXAMINATION

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

### The contractor shall examine all roofing substrates including, but not limited to insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.

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

### During the application of specified materials, the applicator shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified roofing system.

## PREPARATION

### Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securement of substrates, eliminating all incompatible materials, and cleaning.

### Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor’s acceptance of conditions.

## PRIMER APPLICATION

### Examine all substrates, and conduct adhesion peel tests as necessary, to ensure satisfactory adhesion is achieved.

### Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified roofing materials.

### Apply primer using brush, roller, or sprayer at the rate published on the product data sheet. Lightly prime for uniform coverage, do not apply heavy or thick coats of primer.

### Asphalt Primer: Apply [SOPREMA ELASTOCOL 500][SOPREMA ELASTOCOL 350] primer to dry compatible masonry, metal, wood and other required substrates before applying asphalt and heat-welded membrane plies. Primer is optional for solvent based solvent based SBS adhesives and cements. Refer to product data sheets.

### Self-Adhesive Membrane Primer: Apply [SOPREMA ELASTOCOL STICK][SOPREMA ELASTOCOL STICK ZERO] to dry, compatible substrates as required to enhance adhesion of self-adhesive membrane plies. Ensure self-adhered membrane primer is tacky to-the-touch, but not wet. Primer should not transfer to the fingertips when touched.

### Primer is not required for SOPREMA COLPLY EF ADHESIVE and SOPREMA COLPLY EF FLASHING CEMENT.

### Project conditions vary throughout the day. Monitor changing conditions, monitor the drying time of primers, and monitor the adhesion of the membrane plies. Adjust primer and membrane application methods as necessary to achieve the desired results.

## HEAT WELDING

### The Contractor is responsible for project safety. Where conditions are deemed unsafe to use open flames, manufacturer’s alternate membrane application methods shall be used to install SBS modified bitumen membrane and flashings. Acceptable alternate installation methods include hot asphalt, cold adhesive-applied, self-adhered membranes and mechanically fastened plies. Hot-air welding equipment may be used in lieu of roof torches to seal membrane side and end laps where heat welding the laps is necessary. Refer to NRCA CERTA, local codes and building owner’s requirements for hot work operations.

### Single or multi-nozzle, hand-held propane roof torches shall be used to install heat-welded membrane and flashing plies. Multi-nozzle carts (dragon wagons) may also be utilized to install membrane plies. Seven (7) nozzle carts are recommended for more uniform heat application in lieu of five (5) nozzle carts.

## MEMBRANE ADHESIVE APPLICATION

### The ambient temperature shall be above 50°F (10°C), and the adhesive temperature shall be a minimum of 70°F (21°C) at the point of membrane application.

### To ensure the adhesive is applied at 70°F (21°C), during cold weather, drums and 5-gallon pails shall be stored in heated areas. Drums and 5-gallon pails exposed to cold temperature on the roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained.

### Priming substrates is optional when solvent-based membrane adhesives are used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates.

### SOPREMA COLPLY ADHESIVE may be applied using a 3/16 – 3/8-inch notched squeegee, brush, or spray equipment.

### SOPREMA COLPLY EF ADHESIVE may be applied using a 3/16 – 3/8-inch notched squeegee or brush. SOPREMA COLPLY EF ADHESIVE is not spray-applied.

### Apply adhesive to clean, dry, and prepared compatible substrates as required to ensure full adhesion.

### Follow the adhesive product data sheet requirements for application rates.

### Apply a uniform application of membrane adhesive at the application rate published on the product data sheet.

### Apply 1-1/2 to 2-1/2 gallons per square between membrane plies. The application rate is 3 to 4 gallons per square or more over absorptive substrates and over granule surfaces. Refer to manufacturer’s product data sheet and adjust application rate based upon surface conditions.

### Install the SBS membrane ply before the adhesive begins to skin over. Once adhesive skins over, the membrane ply will not adhere.

## MOPPING ASPHALT APPLICATION

### Mopping asphalt manufacturer and type shall be preapproved by the manufacturer.

### Refer to mopping asphalt supplier published values for Softening Point, Minimum Flash Point (FP), Finished Blowing Temperature (FBT) and Equiviscous Temperature (EVT).

### Refer to the Softening Point for maximum Roof Slope applications. The maximum recommended roof slope for asphalt built-up roofing felts is 3/4:12. Contact the manufacturer for special back-nailing requirements necessary to prevent membrane slippage for roof slopes that exceed 3/4:12.

### To avoid risk of fire do not heat asphalt at or above the Flash Point temperature.

### The EVT is the temperature at which the mopping asphalt viscosity is 125 centistokes.

### Apply mopping asphalt within +/- 25°F (14°C) of the published EVT to obtain the nominal 23 to 25 pounds per square coverage rate.

### Refer to the EVT provided by the asphalt supplier.

#### Type III asphalt application temperature should be within 365 to 435°F (185 to 224°C) at the point of application when installing roofing materials into the hot asphalt.

#### Type IV asphalt application temperature should be within 400 to 475°F (204 to 246°C) at the point of application when installing roofing materials into the hot asphalt.

### For SBS modified bitumen membrane applications; ASTM D312 Type IV asphalt is required.

### For SBS modified bitumen membrane plies, the asphalt temperature shall not fall below 400°F (204°C) at the point of membrane contact when installing the SBS membrane into the hot asphalt.

### The contractor shall monitor asphalt application temperature and shall record the temperature during application.

## FLASHING CEMENT APPLICATION

### The ambient temperature shall be above 50°F (10°C), and the flashing cement temperature shall be a minimum of 70°F (21°C) at the point of membrane application.

### To ensure the flashing cement is applied at 70°F (21°C), during cold weather, pails shall be stored in heated areas. Pails exposed to cold temperature on the roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained.

### Priming substrates is optional when solvent-based membrane adhesives are used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates.

### SOPREMA COLPLY FLASHING CEMENT may be applied using ¼ inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Primer may be used to reduce consumption of solvent-based flashing cement.

### SOPREMA COLPLY EF FLASHING CEMENT may be applied using ¼ inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Primer is not required for SOPREMA COLPLY EF FLASHING CEMENT.

### Application rates vary based on substrate porosity and roughness.

## SBS MASTIC AND GENERAL-PURPOSE ROOFING CEMENT APPLICATION

### Apply SOPREMA SOPRAMASTIC general purpose SBS mastic and roofing cement to seal drain leads, metal flanges, seal along membrane edge at terminations, and where specified and required in detail drawings.

### Do not use general purpose SBS mastics and roofing cement where flashing cement applications are required. Do not use SBS mastics and roofing cement beneath SBS-modified bitumen membrane and flashing plies.

### Apply general purpose SBS mastic and elastic roofing cement using caulk gun, or notched trowel at 2.0 – 2.5 gallons per square on each surface. Application rates vary based on substrate porosity and roughness. Tool-in as necessary to seal laps.

### Embed matching granules into wet cement where exposed.

## MECHANICALLY FASTENED ANCHOR SHEET/BASE SHEET APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.

### Unroll the sheet onto the roof surface and allow time to relax prior to installing the fasteners.

### 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.

### Cut sheet to working lengths and widths as required, conforming to rooftop conditions.

### Align sheet at side-laps to produce a consistent overlap required for wind uplift resistance approvals.

### As uniform tension is being applied, fasten the sheet beginning at the center of the sheet and work towards the end-laps, removing all wrinkles and buckles as fastening progresses.

### Install specified fasteners along the center line of side-laps, and intermediate rows staggered between side-laps, and fasten all end-laps.

### Fasten sheet as required for specified wind uplift resistance. Install additional fasteners in roof perimeter and corners as specified.

### ULTRA-STICK NAIL BASE must be covered with the roofing membrane plies upon installation and not left exposed.

## MECHANICALLY FASTENED SOPRAFIX BASE PLY APPLICATION

### Refer to agency approvals for fastening and other system requirements.

### Mechanically fastened membrane base ply installation:

#### Follow product data sheets and published detail requirements for additional installation instructions.

#### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.

#### Unroll the sheet onto the roof surface and allow time to relax before fastening as necessary to prevent wrinkling once fastened.

#### 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.

#### Ensure all roofing and flashing substrates are prepared and acceptable to receive the mechanically fastened membrane.

#### Ensure the specified side-lap and end-lap widths are maintained. End-laps should be staggered 3 ft. apart.

#### Unroll the first roll onto the roof substrate, re-roll the adjacent roll.

#### Starting at one end of the sheet, install the mechanical fasteners along the center of the side-lap. Ensure spacing between fasteners in the laps meets 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 end-laps to the deck 12 in on-centers or less.

#### When the side-lap is fastened, un-roll the adjacent roll over the fasteners. Maintain the required side-lap width.

#### Ensure the full side-lap width, and all 6 in end-laps, are sealed water-tight.

#### For heat-welded side-laps using a torch, ensure the substrate is satisfactory for torch application. Apply heat within the side-lap while unrolling the membrane. Apply heat until the bitumen melts to ensure full adhesion. Ensure a continuous weld is produced across the full side-lap width.

#### For hot-air welded side-laps, insert the hot-air welder shoe within the lap, and adjust the hot-air welder as required to produce a continuous weld across the full lap width.

#### While heat-welding the membrane side-laps, ensure approximately 1/8 to ¼ in bleed-out is achieved at laps.

#### Adjust the application of heat to the underside of the membrane and to substrate as required for varying substrates and environmental conditions.

#### For self-adhesive side-laps, remove the release film on the underside of the membrane while immediately following with a steel roller. Immediately heat-weld all 6 in end-laps, and fully seal all T-joints.

#### At end-laps, cut a 45-degree dog-ear away from the selvage edge.

#### Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.

#### Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 in of adjacent ply laps.

#### Inspect the mechanically fastened base ply each day to ensure the plies are watertight. Repair all un-adhered voids, wrinkles, open laps, and all other deficiencies before installing the inter-ply and/or cap sheet over completed fastened base ply sheet.

## COLPLY EF RIBBON-APPLIED BASE PLY APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the membrane adhesive and membrane plies.

### Unroll membrane onto the roof surface and allow the membrane to relax prior to installing the membrane.

### Re-roll the membrane for the plies to be rolled into the adhesive while ensuring the specified side and end-laps are maintained.

### 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.

### Cut rolls to working lengths and widths to conform to roof conditions and lay out to always work to a selvage edge.

### Ensure all roofing and flashing substrates are prepared as necessary, and all substrates are acceptable to receive the specified adhesive and membrane.

### Install the COLPLY EF adhesive ribbons ahead of the base ply application. Do not allow the adhesive to skin-over before the membrane is applied into the adhesive. The membrane will not adhere where adhesive has skinned over.

### Cross venting channel:

### For each roll of base ply installed, loose lay a 6 in x 39 in strip of roofing ply or felt material on the roof deck/substrate in the path of the COLPLY EF ribbon application, perpendicular to the ribbons.

### Immediately after the COLPLY EF ribbons have been applied over the 6 in x 39 in strip, remove the strip to produce a 6 in wide “skip” in the adhesive ribbons to allow for a “cross venting channel” between ribbons.

### Use a weighted roller to roll-in the base ply.

### Periodically examine the underside of the base ply to ensure COLPLY EF adhesive ribbons spread 2-1/2 wide or more, while maintaining an open “venting channel” between ribbons.

### Where laps are adhered using membrane adhesive, apply sufficient adhesive coverage to ensure 1/8 to 1/4 in bleed-out is present at all laps.

### Once set in place, ensure specified side-laps and end-laps are maintained.

### At end-laps, cut a 45-degree dog-ear away from the selvage edge for all T-joints.

### For low-slope areas where the roof slope falls below 1/4 in per foot, and where otherwise specified, leave all membrane side and end-laps dry to hot-air weld or torch all laps watertight.

### Use a follow tool, weighted roller or broom the leading edge of the membrane to the substrate, working forward and outward as necessary to remove wrinkles.

### Each day, physically inspect all side and end-laps, and ensure the base ply is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps, and all other deficiencies.

## HEAT-WELDED, FULLY ADHERED MEMBRANE APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are safe and satisfactory, and will remain safe and satisfactory, during the application of the heat-welded membrane and flashings.

### Ensure all primers are fully dry before beginning heat-welding operations.

### Unroll membrane onto the roof surface and allow time to relax prior to heat welding.

### 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.

### Ensure all roofing and flashing substrates are prepared and acceptable to receive the heat-welded membrane.

### Cut membrane to working lengths and widths to conform to rooftop conditions and lay out to always work to a selvage edge.

### Ensure specified side-laps and end-laps are maintained. End-laps should be staggered 3 ft apart.

### Direct roof torch on the roll as necessary to prevent overheating and damaging the membrane and substrates.

### As the membrane is unrolled, apply heat to the underside of the membrane until the plastic burn-off film melts away. Continuously move the torch side-to-side across the underside of the roll to melt the bitumen on the underside of the sheet, while continuously unrolling membrane.

### While unrolling and heating the sheet, ensure approximately ¼ to 1/2 in of hot bitumen flows ahead of the roll as it is unrolled, and there is 1/8 to 1/4 in bleed out at all laps.

### Adjust the application of heat to the underside of the membrane and to substrate as required for varying substrates and environmental conditions.

### At the 6 in end-laps, melt the plastic burn-off film from the top surface or embed granules and remove surfacing, where present, using a torch or hot-air welder.

### At end-laps where T-Joints exist, cut a 45-degree dog-ear away from the selvage edge.

### Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps, and all other deficiencies.

### Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 in of base ply laps.

## COLD ADHESIVE-APPLIED MEMBRANE APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the membrane adhesive and membrane plies.

### Unroll membrane onto the roof surface and allow the membrane to relax prior to installing the membrane.

### Re-roll the membrane in order for the plies to be rolled into the adhesive while ensuring the specified side and end-laps are maintained

### 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.

### Cut rolls to working lengths and widths to conform to roof conditions and lay out to always work to a selvage edge.

### Ensure all roofing and flashing substrates are prepared as necessary, and all substrates are acceptable to receive the specified adhesive and membrane.

### Install the specified membrane adhesive ahead of the membrane application. Do not allow the adhesive to skin-over before the membrane is applied into the adhesive. The membrane will not adhere where adhesive has skinned over.

### Where laps are adhered using membrane adhesive, apply sufficient adhesive coverage to ensure 1/8 to 1/4 in bleed-out is present at all laps.

### Once set in place, ensure specified side-laps and end-laps are maintained.

### At end-laps, cut a 45-degree dog-ear away from the selvage edge for all T-joints.

### For low-slope areas where the roof slope falls below 1/4 in per foot, and where otherwise specified, leave all membrane side and end-laps dry to hot-air weld or torch all laps watertight. Embed granules, where present, when heat welding sheets.

### Use a follow tool, weighted roller or broom the leading edge of the membrane to the substrate, working forward and outward as necessary to remove wrinkles. Avoid walking over the membrane during application.

### Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps, and all other deficiencies.

### Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 in of base ply laps.

### Immediately broadcast matching granules into adhesive bleed-out at cap sheet laps, or otherwise treat bitumen bleed-out once adhesive has dried and cured.

##  SELF-ADHESIVE MEMBRANE APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the self-adhesive membrane.

### Unroll membrane onto the roof surface and allow time to relax prior to installing the membrane.

### 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.

### Ensure all roofing and flashing substrates are prepared and acceptable to receive the self-adhesive membrane.

### Ensure primer is tacky to-the-touch, but not wet. Primer should not transfer to the fingertips when touched. Do not proceed if primer is wet or becomes fully dry and dirty. If primer becomes fully dry, dirty and loses all tack, re-prime the substrate as necessary to achieve membrane adhesion.

### Cut rolls to working lengths and widths to conform to rooftop conditions and lay out to always work to a selvage edge.

### Ensure membrane side-laps and end-laps are maintained.

### Peel the release film from the underside of the membrane. Press and adhere the leading edge of the membrane to the substrate but leaving the 6 in end-lap un-adhered to heat weld the end-lap.

### As the release film is peeled away, use a weighted roller to firmly set the sheet in place. Ensure full contact is made between the ply and the substrate for full adhesion. Use a hand-roller to roll-in vertical flashings and confined areas to firmly apply pressure.

### At the 6 in end-laps, use a torch or hot-air welded to melt plastic burn-off film from the top surface where present. Embed granules or otherwise remove surfacing where present using a torch or hot-air welder. For sanded membrane, specified cold adhesive may be used to adhered end-laps. Adhere all base ply and Cap Sheet end-laps using torch or hot-air welder or adhere using specified cold adhesive.

### At 6 in end-laps, cut a 45-degree dog-ear away from the 3 in selvage edge. Apply a bead of SOPRAMASTIC SBS ELASTIC CEMENT to the angled cut of ULTRA-STICK base plies.

### Offset self-adhered end-laps 3 ft.

### Do not leave ULTRA-STICK base plies exposed; cover all exposed film during the same day.

### Each day, physically inspect all side and end-laps, and ensure the membrane is watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all un-adhered voids, wrinkles, open laps, and all other deficiencies.

### Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 in of base ply laps.

## ASPHALT-ADHERED SBS MODIFIED BITUMEN MEMBRANE APPLICATION

### Follow manufacturer’s material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the mopping asphalt and membrane plies.

### Unroll the membrane onto the roof surface. Allow modified bitumen membrane plies to relax prior to installing the membrane.

### 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. Where strapping is preferred, refer to membrane layout guidelines.

### Cut rolls to working lengths and widths as required to conform to rooftop conditions. Cut membrane plies as necessary to always work to a selvage edge.

### Ensure all roofing and flashing substrates are prepared and primed as necessary, and all substrates are acceptable to receive the specified asphalt and membrane.

### Re-roll the membrane for the plies to be rolled into the hot asphalt while ensuring the specified side and end-laps are maintained.

### Mop a uniform application of hot asphalt within +/- 25°F (14°C) of the Equiviscous Temperature (EVT). Apply sufficient asphalt coverage to ensure 1/8-to-1/4-inch bleed-out is present beyond all laps. Prevent excessive asphalt bleed-out on the SBS ply surface.

### The asphalt temperature shall not fall below the minimum EVT temperature range, or below 400°F (204°C), at the point of membrane contact when unrolling the sheet into the hot asphalt.

### The asphalt application temperature should be monitored at the point of membrane application and recorded during application.

### At 6-inch end-laps, cut a 45-degree dog-ear away from the 3-inch selvage edge for all T-joints.

### Broom the membrane to the substrate, working forward to the end of the roll as necessary to remove wrinkles and voids to ensure full adhesion. Avoid walking over the membrane during application.

### Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps and all other deficiencies.

### Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 inches of base ply laps.

### During installation of cap sheets, immediately broadcast matching granules in cap sheet bleed-out, or otherwise treat bitumen bleed-out using specified cap sheet finish.

## ASPHALT BUR MEMBRANE APPLICATION

### Follow material product data sheets and published general requirements for installation instructions.

### Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the mopping asphalt and membrane plies.

### Install red rosin paper or other separator sheet over the roof deck to prevent asphalt from entering the building and to prevent asphalt bleed-through to the roof deck.

### 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.

### Ensure all roofing substrates are prepared as necessary, and all substrates are acceptable to receive the specified asphalt and membrane.

### Apply mopping asphalt within +/- 25°F (14°C) of the published EVT to obtain the nominal 23 to 25 pounds per square coverage rate.

### Refer to the EVT provided by the asphalt supplier. The Type III asphalt application temperature shall be within 365 to 435°F (185 to 224°C) and Type IV asphalt application temperature shall be within 400 to 475°F (204 to 246°C) at the point of application when rolling the felt into the hot asphalt.

### The application temperature shall be monitored and recorded during application.

### TWO (2) PLY BUILT-UP ROOFING APPLICATION:

#### First start at the low edge of the roof by installing a felt cut 18 inches wide, installed along the low edge.

#### Second install a full 36 inch wide felt, installed along the same low edge of the roof.

#### Next install a full 36 inch wide felt, installed 19 inches over the second felt (17 inches from the roof edge).

#### Each of the following felts should also be installed 19 inches over the preceding felt, producing the same 17-inch exposure.

#### Follow the lay-lines on the felts or snap chalk lines as required to maintain consistent 2-ply membrane coverage, with 2-inch side laps and 4-inch end laps.

### THREE (3) PLY BUILT-UP ROOFING APPLICATION:

#### First start at the low edge of the roof by installing a felt cut 12 inches wide, installed along the low edge.

#### Second install a felt cut 24 inches wide, installed along the same low edge of the roof.

#### Third install a full 36 inch wide felt, installed along the same low edge of the roof.

#### Next install a full 36 inch wide felt, installed 24-2/3 inches over the third felt (11-1/8 inches from the roof edge).

#### Each of the following felts should be installed 24-2/3 inches over the preceding felt, producing the same 11-1/8-inch exposure.

#### Follow the lay-lines on the felts or snap chalk lines as required to maintain consistent 3-ply membrane coverage, with 2-inch side laps and 4-inch end laps.

### FOUR (4) PLY BUILT-UP ROOFING APPLICATION:

#### First start at the low edge of the roof by installing a felt cut 9 inches wide, installed along the low edge.

#### Second install a felt cut 18 inches wide, installed along the same low edge of the roof.

#### Third install a felt cut 27 inches wide, installed along the same low edge of the roof.

#### Fourth install a full 36 inch wide felt installed along the same low edge of the roof.

#### Next install a full 36 inch wide felt, installed 27-1/2 inches over the fourth felt (8-1/2 inches from the roof edge).

#### Each of the following felts should be installed 27-1/2 inches over the preceding felt, producing the same 8-1/2-inch exposure.

#### Follow the lay-lines on the felts or snap chalk lines as required to maintain consistent 4-ply membrane coverage, with 2-inch side laps and 4-inch end laps.

### Carefully squeegee the ply felts in place, working forward to the end of the roll as necessary to remove wrinkles and voids to ensure full adhesion.

### Avoid walking over the membrane during application to prevent displacing asphalt between felts. Allow the asphalt to cool sufficiently before walking over the new membrane.

### Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps, and all other deficiencies.

### Do not leave built-up membrane felts exposed overnight. Each day, squeegee a thin glaze coating of asphalt over the built-up membrane surface, or install the specified protective surfacing before the end of each workday.

### Do not phase built-up roofing felt applications. Install the total number of specified built-up roofing felts each day.

### Refer to manufacturer’s recommendations for cold adhesive-applied or heat-welded cap sheets were recommended in lieu of hot asphalt-applied cap sheets.

## FLASHING APPLICATION, HEAT WELDED

### Refer to SBS manufacturer’s membrane application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer’s membrane flashing detail drawings.

### The contractor is responsible for project safety. Refer to NRCA CERTA recommendations and building owner requirements for hot work operations.

### Where required to seal substrates for fire safety, install specified adhered, self-adhered or fastened backer ply to the substrate. Ensure backer-ply covers and seals all substrates requiring protection from exposure to torch operations.

### Ensure all flashing substrates that require primer are primed, and the primer is fully dry.

### Unroll the flashing base ply and flashing cap sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants, and the required over-lap onto the horizontal roof surface.

### Cut the flashing membrane from the end of the roll to always install flashings to the side-lap line or selvage edge line.

### Lay out the flashing base ply and flashing Cap Sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.

### Install non-combustible cant strips at transitions where required.

### Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.

### ROOF MEMBRANE BASE PLY:

#### Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions, and penetrations.

### FLASHING BASE PLY:

#### Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the of base of the cant onto the roof. Cut the base ply at corners to form 3-inch side-laps. Install gussets to seal corner transitions.

#### Install one or more flashing base ply(s) at all roof terminations, transitions, and penetrations.

### ROOF MEMBRANE CAP SHEET:

#### Install the roof membrane Cap Sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition, or penetration, and up to the top of cants where present.

#### Using a chalk line, mark a line on the membrane cap sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, embed the cap sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing cap sheet.

### FLASHING CAP SHEET:

#### Install the flashing Cap Sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant onto the roof.

#### Install the flashing Cap Sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions, and penetrations.

### During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids, or openings. Ensure bitumen or flashing cement bleed-out is present at all flashing side and end-laps.

### Use a damp sponge float or damp rag to press-in the heat-welded flashing plies during installation.

### Where sufficient bitumen bleed-out is not present, and for all self-adhered plies, apply specified gun-grade sealant or mastic to seal the membrane termination along all roof terminations, transitions, and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.

### Fasten the top leading edge of the flashing 8 in on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates. Seal fastener penetrations watertight using specified sealant or mastic.

### Manufacturer’s liquid-applied, reinforced flashing systems shall be installed where conditions are not favorable to install SBS modified bitumen flashings. Such conditions include irregular shapes penetrating roof surfaces (I-beams), confined areas and low flashing heights. Manufacturer’s liquid-applied, reinforced flashing systems are recommended in lieu of pitch pans and lead pipe flashings.

#### For SBS modified bitumen flashings installed using SOPREMA COLPLY adhesive and/or flashing cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING.

#### For SBS modified bitumen flashings that are self-adhesive, heat-welded, installed using hot asphalt or SOPREMA COLPLY EF adhesive and/or flashing cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING and SOPREMA ALSAN RS.

## FLASHING APPLICATION, COLD-APPLIED FLASHING CEMENT

### Refer to manufacturer’s membrane application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer’s membrane flashing detail drawings.

### It is not required to prime substrates to receive solvent-based flashing cement. Priming is recommended to enhance adhesion and reduce the consumption rate of flashing cement for absorptive substrates.

### Primer is not required when SOPREMA COLPLY EF FLASHING CEMENT is used.

### Unroll the flashing base ply and flashing Cap Sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants, and the required over-lap onto the horizontal roof surface.

### Cut the flashing membrane from the end of the roll to always install flashings to the side-lap line or selvage edge line.

### Lay out the flashing base ply and flashing Cap Sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.

### Install non-combustible cant strips at all horizontal-to-vertical roof transitions.

### Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.

### ROOF MEMBRANE BASE PLY:

#### Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions, and penetrations.

### FLASHING BASE PLY:

#### Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the of base of the cant. Cut the base ply at corners to form 3-inch side-laps. Install gussets to seal corner transitions.

#### Install one or more flashing base ply(s) at all roof terminations, transitions, and penetrations.

### ROOF MEMBRANE CAP SHEET:

#### Install the roof membrane Cap Sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition, or penetration, and up to the top of cants where present.

#### Using a chalk line, mark a line on the membrane Cap Sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, it is recommended to embed the Cap Sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing Cap Sheet.

### FLASHING CAP SHEET:

#### Install the flashing Cap Sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant.

#### Install the flashing Cap Sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions, and penetrations.

### Apply flashing cement to the substrate and to the underside of the flashing ply using a ¼ inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Application rates vary based on substrate conditions.

### During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids, or openings. Ensure bitumen or flashing cement bleed-out is present at all flashing side and end-laps.

### Press-in the flashing plies during installation to ensure they are in full contact with the substrate below.

### Where sufficient bitumen bleed-out is not present, apply specified gun-grade sealant or mastic to seal the membrane termination along all roof terminations, transitions, and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.

### Fasten the top leading edge of the flashing 8 inches on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates. Seal fastener penetrations watertight using manufacturer’s sealant or mastic.

### Manufacturer’s liquid-applied, reinforced flashing systems should be installed where conditions are not favorable to install SBS modified bitumen flashings. Such conditions may include irregular shapes penetrating roof surfaces (I-beams), confined areas and low flashing heights. Liquid-applied, reinforced flashing systems are required in lieu of pitch pans and lead pipe flashings.

#### For SBS modified bitumen flashings installed using SOPREMA COLPLY adhesive and/or flashing cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING.

#### For SBS modified bitumen flashings that are self-adhesive, heat-welded, installed using hot asphalt or SOPREMA COLPLY EF adhesive and/or flashing cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING and SOPREMA ALSAN RS.

## FLASHING APPLICATION, SELF-ADHESIVE

### Refer to SBS modified bitumen membrane manufacturer’s application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer’s SBS modified bitumen membrane flashing detail drawings.

### Ensure all flashing substrates are primed using self-adhesive membrane primer. Refer to self-adhesive membrane primer application requirements.

### Unroll the flashing base ply and flashing cap sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants, and the required over-lap onto the horizontal roof surface.

### Cut the flashing membrane from the end of the roll to always install flashings to the side-lap line or selvage edge line.

### Lay out the flashing base ply and flashing cap sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.

### Install non-combustible cant strips at transitions where required.

### Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.

### ROOF MEMBRANE BASE PLY:

#### Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions, and penetrations.

### FLASHING BASE PLY:

#### Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the of base of the cant. Cut the base ply at corners to form 3-inch side-laps. Install gussets to seal corner transitions.

#### Install one or more flashing base ply(s) at all roof terminations, transitions, and penetrations.

### ROOF MEMBRANE CAP SHEET:

#### Install the roof membrane cap sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition, or penetration, and up to the top of cants where present.

#### Using a chalk line, mark a line on the membrane cap sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, embed the cap sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing cap sheet. Where hot work is prohibited, utilize specified flashing cement to seal flashing end-laps.

### FLASHING CAP SHEET:

#### Install the flashing cap sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant.

#### Install the flashing cap sheet to ensure a minimum two-ply flashing system is present at all roof terminations, transitions, and penetrations.

### During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids, or openings. Use weighted roller, or hand roller for confined areas, to apply pressure to ensure full contact and complete adhesion.

### Heat weld or hot-air weld all flashing side and end-laps or adhere using specified flashing cement.

### Seal all flashing ply and cap sheet T-joints at end laps using torch and trowel, hot-air welder or flashing cement.

### Apply SOPREMA gun-grade sealant or flashing cement to seal the membrane termination along all roof terminations, transitions, and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.

### Fasten the top leading edge of the flashing 8 in on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates. Seal fastener penetrations watertight using SOPREMA sealant or mastic.

### Manufacturer’s liquid-applied, reinforced flashing systems should be installed where conditions are not favorable to install SBS modified bitumen flashings. Such conditions may include irregular shapes penetrating roof surfaces (I-beams), confined areas and low flashing heights. Liquid-applied, reinforced flashing systems are required in lieu of pitch pans and lead pipe flashings.

#### For SBS modified bitumen flashings installed using SOPREMA COLPLY adhesive and/or flashing cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING.

#### For SBS modified bitumen flashings that are self-adhesive, heat-welded, installed using hot asphalt or SOPREMA COLPLY EF Adhesive and/or Flashing Cement, refer to manufacturer’s installation guidelines for SOPREMA ALSAN FLASHING and SOPREMA ALSAN RS.

## PARTIALLY ADHERED FLASHINGS (SOPREMA COLVENT):

### Refer to partially adhered membrane application instructions.

### Where specified, ensure partially adhered flashings that are designed to vent pressure to the atmosphere are adhered at all adhesive ribbons on the underside of the flashing base ply. The sanded vent channels should remain un-adhered to the substrate.

### Install the membrane base ply and flashing base ply to ensure the vent channel pattern is maintained and free to vent pressure to the flashing termination.

### Butt the end of the SOPREMA COLVENT base flashing sheet to the SOPREMA COLVENT membrane base ply sheet. Strip-in the butted joint using a 6-inch wide, fully adhered strip-in ply to seal the butted joints watertight.

### At the end of each workday, ensure the open vent channels at the end of the SOPREMA COLVENT sheet are not left exposed to precipitation or other moisture infiltration. The open venting channels must be protected from moisture infiltration during construction.

### Temporary night seals shall be installed as required to seal flashing end terminations watertight. Temporary night seals should be removed upon resuming the installation to ensure venting channels are maintained as specified.

### The completed vented flashing must be counter flashed watertight to prevent moisture infiltration into the venting channels.

## LIQUID-APPLIED, SINGLE-COMPONENT, BITUMEN-URETHANE FLASHING SYSTEM APPLICATION (SOPREMA ALSAN FLASHING):

### Refer to manufacturer’s details drawings, product data sheets and published general requirements for application rates and specific installation instructions

### Pre-cut SOPREMA ALSAN POLYFLEECE polyester reinforcing fleece to conform to roof terminations, transitions and penetrations being flashed. Ensure a minimum 2 in overlap of fleece at side and end-laps. Ensure the completed liquid-applied flashing membrane is fully reinforced.

### Apply the base coat of SOPREMA ALSAN FLASHING liquid-applied flashing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion at 2.0 gallons per square.

### Immediately apply the SOPREMA ALSAN POLYFLEECE reinforcing into the wet base coat of resin. Using a brush or roller, work the SOPREMA ALSAN POLYFLEECE into the wet resin while applying the second coat of SOPREMA ALSAN FLASHING resin to completely encapsulate the fleece at 2.0 gallons per square, and extend the liquid resin 1 inch beyond the fleece.

### Apply a finish coat of SOPREMA ALSAN FLASHING resin at 2.0 gallons per square within 2-3 hours. When applying the finish coat more than 24 hours, the surface may need to be cleaned using acetone or MEK to ensure satisfactory adhesion.

### Broadcast mineral granules into the wet finish coat as required to match the adjacent cap sheet.

## LIQUID-APPLIED, PMMA (PMA) MEMBRANE AND FLASHING SYSTEM APPLICATION ALSAN RS (ALSAN RS LO)

### Refer to manufacturer’s details drawings, product data sheets and published general requirements for application rates and specific installation instructions.

### Pre-cut SOPREMA ALSAN RS FLEECE polyester reinforcing fleece to conform to roof terminations, transitions and penetrations being flashed. Ensure a minimum 2 in overlap of fleece at side and end-laps. Ensure the completed liquid-applied flashing membrane is fully reinforced.

### Apply the base coat of catalyzed SOPREMA ALSAN RS resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.

### Immediately apply the SOPREMA ALSAN RS FLEECE reinforcing into the wet base coat of resin. Using a brush or roller, work the SOPREMA ALSAN FLEECE reinforcing fabric into the wet resin while applying the second coat of catalyzed SOPREMA ALSAN RS resin to completely encapsulate the fleece.

### Refer to reinforced, [polymethyl-methacrylate (PMMA)][polymethacrylate (PMA)] specification section and application instructions, details drawings, product data sheets and published general requirements for installation instructions.

## WALKWAYS

### At areas outlined on the drawings, and around the perimeter of all rooftop equipment and at all door and stair landings, install walkway protection.

### Cut walkway from end of rolls. No piece shall be less than 24 in and no more than 60 in.

### Remove foil/film or embed granules where present on cap sheet.

### Provide a 4 in space between sheets for drainage.

### Locate walkway membranes a minimum of 2 in from side-laps, end-laps and flashing membranes.

### Fully adhere walkway protection by heat welding or adhering the field with cold adhesive and heat welding a 3 in perimeter.

## AGGREGATE SURFACING

### Apply 400 to 600 pounds per square of aggregate in nominal 60 pounds per square flood coat of hot asphalt.

### The aggregate shall be fully embedded into hot asphalt. Loose gravel shall be broomed and embedded or removed to meet the 400 pounds per square requirement.

### Hold asphalt and gravel back from all SBS modified bitumen flashings.

## 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