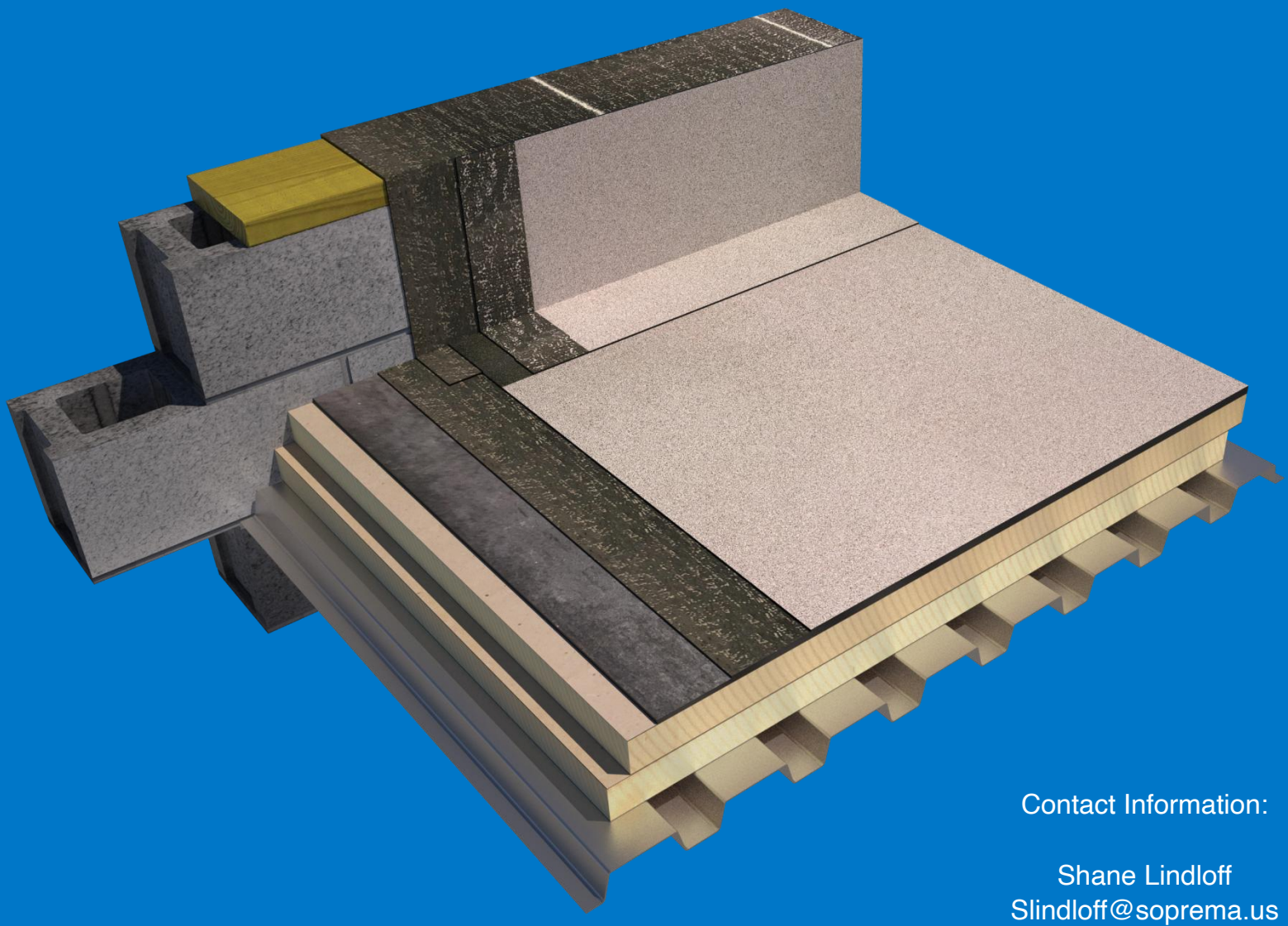
Revised 3.11.2026

SOPREMA

SBS MODIFIED BITUMEN ROOFING TECHNICAL MANUAL



Contact Information:

Shane Lindloff
Slindloff@soprema.us
(407) 304-9841

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INTRODUCTION

SOPREMA® offers a wide range of roofing products formulated and manufactured with SBS-modified bitumen technology. SBS-modified bitumen is a proven technology providing utmost in durability and reliability ensuring watertight structures for decades. SBS-modified bitumen products can be applied using a variety of methods allowing the flexibility to complete the job within project parameters in virtually any climate.

The SOPRALENE® and ELASTOPHENE® membrane product lines carry the proven durability of trusted SBS-modified bitumen formulated by SOPREMA®, while offering numerous additional physical and mechanical benefits. SOPRALENE® membranes reinforced with non-woven polyester provide exceptional puncture resistance, toughness, and high elongation properties and exhibits excellent dimensional stability.

Incorporating glass fiber reinforcement, ELASTOPHENE® membranes boast superior dimensional stability and fire resistance. Both SOPRALENE® and ELASTOPHENE® membranes have been proven to withstand superior heat and low temperatures in installation all over the world and are available in a wind range of thicknesses and mechanical properties to cover any design need.

Refer to current SOPREMA® product data sheets and safety data sheets for detailed information about each product discussed in this manual. For additional information refer to www.soprema.us or contact SOPREMA® at 800.356.3521.

DISCLAIMER

This manual is intended for use by SOPREMA® authorized roofing contractors and design professionals in order to provide instructions and details for the application of SOPREMA® SBS modified bitumen roofing when a SOPREMA® warranty will be requested upon project completion. The contents of this manual are believed to be consistent with good roofing practices, but are not specific to any particular project's needs and are not a substitute for professional design services. SOPREMA® bears no liability nor responsibility for the design of any particular project.

The roofing material applicator is responsible for ensuring compliance with contract documents, project specifications, roofing industry standards and jurisdictional codes necessary to meet the requirements for specific project applications.

GENERAL

SBS MODIFIED BITUMEN LOW-SLOPE ROOFING PRODUCT TERMINOLOGY

- **ELASTOPHENE:** Glass and glass-polyester composite reinforced SBS modified bitumen membrane plies intended for low-slope roofing applications.
    - **HR:** ASTM D6163, Type II glass reinfofcement
    - **HS:** ASTM D6162, Type III glass-polyester composite reinforcement
- **SOPRALENE:** Polyester reinforced SBS modified bitumen membrane plies intended for low-slope roofing applications.
    - **180:** Nominal 180 g/m2 weight of the polyester reinforcement.
    - **250:** Nominal 250 g/m2 weight of the polyester reinforcement.
- **SOPRAFIX**: Polyester reinforced SBS modified bitumen membrane base ply intended for fastening the sheet along the side-laps, into roof deck substrates, for low-slope roofing applications.
    - **612:** 180 g/m2 polyester reinforcement, poly burn-off film for torch-applying the subsequent ply(s).
    - **613:** 180 g/m2 polyester reinforcement, poly burn-off film for torch-applying the subsequent ply(s). 5-inch side-lap lines to accommodate the 3 in diameter Tri-Fixx and Versa-Fast plates.
    - **614:** 250 g/m2 polyester reinforcement, poly burn-off film for torch-applying the subsequent ply(s).
    - **622:** 180 g/m2 polyester reinforcement, sanded top surface for applying the subsequent ply(s) using membrane adhesives.
- **FLAM:** Poly burn-off film surfacing on the bottom surface for torch-applying the sheet to substrates, and a poly burn-off film top surface for torch-applying membrane plies onto the top surface of the sheet.
- **SANDED:** Sanded bottom surface for applying the sheet to substrates using adhesives, and a sanded top surface for applying adhesives onto the top surface.
- **STICK:** Self-adhesive SBS bottom surface with a release film that is peeled-away during application. Requires a self-adhesive primer applied to substrates.
- **FLAM STICK:** Poly burn-off film on the top surface for torch-applying to the top of the sheet, and a self-adhesive (stick) bottom surface for adhering to substrates. Requires a self-adhesive primer applied to substrates.
- **SP:** Sanded top surface and Poly burn-off film on the bottom surface. The Poly burn-off film on the bottom surface is for torch-applying the sheet to substrates. Adhesives are applied to the sanded top surface.
- **PS:** Poly burn-off film on the top surface and Sanded bottom surface. The sanded bottom surface is for applying the sheet to substrates using adhesives. The Poly burn-off film on the top surface is for torch-applying a ply to the top surface.
- **2.2, 3.0, etc.:** These numbers used in sheet names indicates the nominal thickness in mm.
- **FR GR:** Fire Retardant sheets with granule surfacing for fire performance related to ASTM E108 and UL790 Fire Classifications.
- **FR+GR:** Additional Fire Retardant added to the sheet for enhanced fire performance related to ASTM E108 and UL790 Fire Classifications.
- **LS FR GR:** Low Slope, fire retardant granule surfaced sheets with limited fire performance related to ASTM E108 and UL790 Fire Classifications.
- **GR:** Granule surfaced sheets with limited fire performance related to ASTM E108 and UL790 Fire Classifications.
- **SG:** SOPRASTAR GRANULE surfacing. Highly reflective, bright white granules.
- **ECO3:** Smog-reducing granule surfacing. The granules have a photo-catalytic coating that transform nitrogen oxides into water-soluble ions that are washed away by rainwater.

Refer to product data sheets for additional terms and complete product information.

CHEMICAL RESISTANCE

- Multi-ply SBS modified bitumen membranes provide redundant, robust protection from common environmental exposures. SOPREMA SBS modified bitumen membranes are compatible with most common natural exposures found on commercial low-slope roofs.
- The effects of incompatible materials generally depends upon the concentration and duration of the exposure. The following materials are considered incompatible with SBS modified bitumen roofing:
    - Animal fat, oil and grease.
    - Animal biproducts, waste and blood.
    - Cooking oil, fat and grease.
    - High concentrations of organic acids such as Acetic acid.
    - Strong oxidizing agents such as Hydrogen peroxide, Fluorine, Chlorine, Nitric acid, Sulfuric acid, etc.
    - Petroleum products such as diesel fuel, kerosene, gasoline, compressor oil, hydraulic oil, etc.
    - Products containing non-polar solvents such as Benzene, Carbon tetrachloride, Dichloromethane, Ethyl Ether, Heptane, Naphtha, Tetrachloroethylene, Toluene, Xylene, etc.
    - Accumulations of meat, dairy, grain, vegetable and byproducts that promote growth, “mud cracking” and decay.
- Where incompatible materials are present, eliminate the potential for roof exposure or protect the roof surface by installing sacrificial layers of protective materials. Routinely inspect roofs where incompatible materials are present and properly address exposures as necessary to prevent damage.
- Roof surfaces that are inadvertently exposed to incompatible materials should be cleaned and monitored for damage. Where significant damage is apparent, the affected materials should be repaired or removed and replaced as necessary.
- Refer to local environmental regulations and safety data sheets related to discharge and spills, as well as proper cleaning and disposal of waste materials.
- Contact SOPREMA for additional information related to material compatibility.

DRAINAGE

- Roof slope, drainage system components, drainage placement, storm water systems, rooftop equipment, and the associated requirements that affect building drainage are determined by design professionals. Design professionals are required to ensure building drainage is properly designed during new construction and building renovation projects.
- Buildings designed to retain water such as “blue roofs” or “vegetative roofs” require design professionals to ensure building loads and structural capacity are appropriate.
- For new construction and for building renovation projects where building drainage may be altered, all guidance offered by SOPREMA® related to drainage is offered for review and acceptance by appropriate design professionals.
- Refer to SOPREMA® warranty terms and conditions posted on-line or refer to your specific SOPREMA® warranty.

PONDING WATER

- When properly installed roofing and waterproofing products are exposed to surface water, the SOPREMA® warranty does not exclude such roof surface water. Such roof surface water conditions are often referred to as “ponding” or “bird baths.” These surface water conditions are defined herein as water that is considered in the building design and dissipates from the roof surface within 48 hours of precipitation. Under normal conditions, such minor roof surface water does not “void” the SOPREMA® warranty, nor does such roof surface water result in the cancelation of the SOPREMA® warranty; however, if the building is not designed to retain water, then the lack of positive slope or inadequate drainage is excluded from warranty coverage.
- For condensation discharge from HVAC equipment or other non-precipitation water sources, contact SOPREMA® for guidance related to additional surface protection recommendations.
- SOPREMA® recommends adequate drainage as well as proper roof maintenance. The consequences of roof surface water may lead to the accumulation of excessive dirt, debris, unwanted plants and biological growth. The accumulations of debris on the roof surface inhibits water flow to roof edges, gutters, roof drains and roof scuppers. For example, even minor surface water conditions, combined with the lack of cleaning and maintenance, may lead to dangerous levels of water accumulation. When drainage is inadequate, roof surface water levels can back-up, rise above roof flashings and result in building leaks. During extreme rain events, such conditions may even lead to structural damage. Such examples are excluded from SOPREMA® warranty coverage.
- Acceptance or allowance of surface water is limited by the SOPREMA® warranty. SOPREMA® offers no warranty coverage related to structural design, storm water drainage design, drainage component placement, nor the capacity for buildings to withstand ponding water loads.
- Refer to SOPREMA® warranty terms and conditions posted on-line or refer to your specific SOPREMA® warranty.

1 PRIMERS

1.1 PRIMERS FOR HEAT WELDED, COLD ADHESIVE-APPLIED AND HOT ASPHALT APPLIED SBS MEMBRANES

General:

- SOPREMA® primers are designed specifically for use with SOPREMA® SBS roofing materials and systems.
- ELASTOCOL™ 500 is a solvent-based primer used to improve adhesion between approved substrates and heat welded, cold adhesive-applied and hot asphalt applied SBS membranes.
- ELASTOCOL™ 350 is a low VOC, polymer emulsion primer used to improve the adhesion between approved substrates and heat welded, cold adhesive-applied and hot asphalt applied SBS membranes.
- Primers should be stored in a dry, protected storage area between 40°F and 105°F and away from direct sunlight. Store primers away from excessive heat and open flames. Prevent rupturing the containers, or breaking the sealed lids prior to use when handling. Refer to the PDS and SDS for additional information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Ensure all substrates are clean and dry. Conduct adhesion/peel tests by applying primer, adhesive and membrane where necessary to ensure satisfactory adhesion is achieved.

Application:

- Apply ELASTOCOL™ 500 or ELASTOCOL™ 350 primer using brush, roller, or sprayer at 1 gallon per 100 square feet. Lightly prime for a uniform coverage. Do not apply heavy or thick coats of primer.
- Apply ELASTOCOL™ 500 or ELASTOCOL™ 350 primer to clean, dry masonry, concrete, metal, wood and other compatible substrates before applying hot asphalt and heat welded membrane and flashing plies.
- ELASTOCOL™ 350 or ELASTOCOL™ 500 is optional for SBS membranes adhered using COLPLY™ ADHESIVE and COLPLY™ FLASHING CEMENT.
- Primer is not recommended for SBS membranes adhered using COLPLY™ EF ADHESIVE or COLPLY™ EF FLASHING CEMENT.

Inspection:

- Examine the primed areas before installing the SBS membrane and flashings.
- Ensure primer is fully dry before applying SBS membranes. Primer should not transfer to the finger tips when touched. Apply membrane within 24 hours of primer application, if primer becomes contaminated re-priming may be required.
- Adjust primer application methods as necessary to achieve the desired results.

1.2 PRIMERS FOR SELF-ADHESIVE SBS MEMBRANES

General:

- ELASTOCOL™ STICK is a solvent-based primer used to improve the adhesion between approved substrates and self-adhesive SBS membranes.
- ELASTOCOL™ STICK ZERO is a low VOC, solvent-based primer used to improve the adhesion between approved substrates and self-adhesive SBS membranes.
- ELASTOCOL™ STICK H2O is a water-based primer used to improve the adhesion between approved substrates and self-adhesive SBS membranes.
- A self-adhesive primer is required for all self-adhesive SBS membrane plies.
- Self-adhesive primers should be stored in a dry, protected storage area away from direct sunlight. Store primers away from excessive heat and open flames. Refer to the PDS and SDS for additional information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Ensure all substrates are clean and dry.
- Conduct adhesion/peel tests by applying primer and membrane where necessary to ensure satisfactory adhesion is achieved.

Application:

- Apply ELASTOCOL™ STICK and ELASTOCOL™ STICK ZERO primer using brush, roller, or sprayer at 0.66 to 1 gallons per 100 square feet or ELASTOCOL™ STICK H2O primer using brush, roller, or sprayer at 0.5 gallons per 100 square feet . Lightly prime for uniform coverage. Do not apply heavy or thick coats of primer.
- Apply ELASTOCOL™ STICK and ELASTOCOL™ STICK ZERO primer to clean, dry masonry, metal, wood and other compatible substrates before applying self-adhesive SBS membrane and flashing plies.
- Refer to Section 3.4 for self-adhesive membrane plies.

Inspection:

- Examine the primed areas before installing the SBS membrane and flashings.
- Ensure self-adhesive primer is tacky to-the-touch, but not wet. Primer should not transfer to the finger tips when touched. If primer becomes fully dry, dirty and loses all tack, re-prime the substrate as necessary to achieve membrane adhesion.
- Examine adhesion of self-adhesive plies during installation. Adjust primer and membrane application methods as necessary to achieve the desired results.

Table 1.2a Primers for Self-Adhesive SBS Membranes	
Substrate	**Primer Required**
Prepared structural concrete, Prepared masonry, Conditioned, un-treated wood, Approved gypsum roof boards, Approved cement roof boards, Prepared metal, Sand-surfaced SBS membrane	ELASTOCOL™ STICK, ELASTOCOL™ STICK ZERO, ELASTOCOL™ STICK H2O
SOPRABOARD™	ELASTOCOL™ STICK, ELASTOCOL™ STICK ZERO

1.3 PRIMERS FOR PMMA/PMA LIQUID-APPLIED FLASHINGS

General:

- ALSAN® RS liquid-applied flashing systems are recommended to supplement SBS modified bitumen membranes and flashings.
- SOPREMA® primers are designed specifically for use with SOPREMA® roofing and flashing materials and systems.
- Refer to details drawings, PDS and published general requirements for application rates and specific installation instructions for ALSAN® RS.
- ALSAN® RS 276 is a rapid curing polymethyl methacrylate (PMMA) primer used to promote adhesion of ALSAN® RS membranes to structural concrete, gypsum roof boards, cement roof boards and other approved substrates.
- ALSAN® RS 222 is a rapid curing polymethyl methacrylate (PMMA) primer used to promote adhesion of ALSAN® RS membranes to exposed asphalt and other approved substrates.
- ALSAN® RS CATALYST POWDER is a reactive agent used to induce curing of ALSAN® RS 276 and ALSAN® RS 222 primers.
- ALSAN® RS METAL PRIMER is a single component, acrylic primer used to promote adhesion of ALSAN® RS systems to clean, prepared metal substrates.
- Primers should be stored in a dry, protected storage area between 32°F and 77°F, and away from direct sunlight. Store primers away from excessive heat, open flames or any ignition sources. Refer to the PDS and SDS for additional information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Refer to ALSAN® RS liquid-applied flashing primer installation instructions.
- Ensure all substrates are sound, dry clean and free of dust, debris, exposed asphalt primers, adhesives, cements and mastics. Ensure substrates are properly prepared in accordance with specific installation instructions for ALSAN® RS.
- SBS modified bitumen substrates: SBS modified bitumen substrates include plies that are heat-welded, self-adhered, hot asphalt-applied or applied using COLPLY™ EF ADHESIVE or COLPLY™ EF FLASHING CEMENT. Ensure modified bitumen base ply and cap sheets are clean, dry and free of loose sand, granules, dust and debris.
- Asphalt and exposed COLPLY™ EF ADHESIVE and COLPLY™ EF FLASHING CEMENT substrates: Apply ALSAN® RS 222 primer to pre-treat asphalt and exposed COLPLY™ EF ADHESIVE and COLPLY™ EF FLASHING CEMENT before applying ALSAN® RS liquid-applied membranes or flashing systems.
- Metal substrates: Prepare approved metal surfaces to near-white finish by abrasion and wipe clean with ALSAN® RS CLEANER before applying ALSAN® RS liquid-applied membranes or flashing systems.
- Concrete and approved masonry substrates: Substrates should be smooth and free of spalls, voids, blow holes and loose materials. Use mechanical scarifying, grinding or shot blasting methods where necessary to provide a smooth, open surface free of laitance. The surface profile should be prepared to ICRI Concrete Surface Profile CSP 3, CSP 4 or CSP 5; CSP 3 being the preferred profile. Refer to ASTM D4259 and D5295.
- Other approved substrates: Refer to ALSAN® RS installation instructions for other approved substrates and priming requirements.

- Conduct adhesion/peel tests by applying primer and membrane where necessary to ensure satisfactory adhesion is achieved.

Application:

- ALSAN® RS 276 and ALSAN® RS 222
  - Refer to PDS and SDS, as well as ALSAN® RS installation instructions.
  - Using a slow-speed mechanical agitator, thoroughly stir the entire container.
  - Mix primer resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.
  - Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified waterproofing and flashing materials. Refer to Table 1.3a.
  - Apply primer using brush or roller at the rate published on the product data sheet. Do not allow heavy accumulations of primer.
  - Allow primer to fully cure before membrane application.
- ALSAN® RS METAL PRIMER
  - Refer to PDS and SBS, as well as ALSAN® RS installation instructions.
  - Using a slow-speed mechanical agitator, thoroughly stir the entire container.
  - Apply primer using brush or roller at the rate published on the product data sheet.
  - ALSAN® RS membranes and flashings should be installed to the primed surface within 24 hours of primer application.

Inspection:

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

Table 1.3a Primers for PMMA/PMA Liquid-Applied Flashings	
Substrate	**Primer Required**
Prepared structural concrete	ALSAN® RS 222 or ALSAN® RS 276
Prepared masonry	ALSAN® RS 222 or ALSAN® RS 276
Conditioned, un-treated wood	ALSAN® RS 222 or ALSAN® RS 276
Approved gypsum roof boards	ALSAN® RS 222 or ALSAN® RS 276
Approved cement roof boards	ALSAN® RS 222 or ALSAN® RS 276
Prepared metal	Optional ALSAN® RS METAL PRIMER
Sand-surfaced SBS membrane heat welded, self-adhesive and hot asphalt applied.	No primer required
Sand-surfaced SBS membrane adhered with COLPLY™ EF	ALSAN® RS 222 on all exposed COLPLY™ EF
Sand-surfaced SBS membrane adhered with COLPLY™	Not recommended for PMMA/PMA flashings. Refer to Section 4.1
Granule-surfaced SBS membrane heat welded, self-adhesive and hot asphalt applied	No primer required
Granule-surfaced SBS membrane adhered with COLPLY™ EF	ALSAN® RS 222 on all exposed COLPLY™ EF
Granule-surfaced SBS membrane adhered with COLPLY™	Not recommended for PMMA/PMA flashings. Refer to Section 4.1
Exposed, new oxidized mopping asphalt	ALSAN® RS 222

2 BASE SHEETS/ANCHOR SHEETS

2.1 MECHANICALLY FASTENED BASE SHEET/ANCHOR SHEET

General:

- SOPREMA® mechanically fastened base sheets/anchor sheets are attached to roof substrates for heat welded, cold adhesive-applied, self-adhesive and hot asphalt applied SBS base plies. Refer to Table 2.1a. Mechanically fastened base sheets/anchor sheets may also be attached to roof substrates for adhering insulation above the sheet.
- Store rolls on end and maintain in an upright position to prevent damage. Store rolls in a clean dry location and cover as necessary to protect rolls from environmental damage such as extreme cold, heat, or moisture.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional information.

Preparation:

- Ensure all substrates are smooth, free of dust and debris, dry and acceptable for installation of base sheets/anchor sheets.
- Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.
- Remove all roll packaging tape prior to installation.

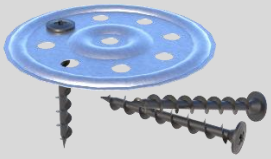
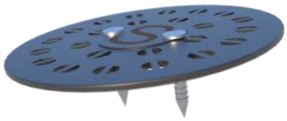
Application:

- Unroll the sheet onto the roof surface and allow time for the sheet to relax prior to installing fasteners.
- Starting at the low point of the roof, lay out the membrane to ensure all plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- Cut sheets to working lengths and widths as required to conform to rooftop conditions.
- Align side-laps to produce the consistent overlap required for attachment to meet wind uplift approvals.
- As uniform tension is applied, start fastening at the center of the sheet and work towards the end-laps. Remove wrinkles and buckles as fastening progresses.
- Install specified fasteners along the center of side-laps. Align intermediate rows of fasteners staggered between side-laps. Fasten all end-laps. Refer to Table 2.1b for fastener types. Fasten sheet as required for specified wind uplift resistance.
- ULTRA-STICK® NAIL BASE should not be left exposed. Cover ULTRA-STICK® NAIL BASE in the same day with approved SBS membrane. Refer to Table 2.1a.
- Refer to SOPREMA® website for mechanically fastened base sheet/anchor sheet fastening patterns.

Inspection:

- Examine fasteners during installation. Replace all damaged and improperly installed fasteners.
- Repair base sheet/anchor sheet wrinkles, buckles and all other installation deficiencies.

Table 2.1a Mechanically Fastened Base Sheets/Anchor Sheets			
Name	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
MODIFIED SOPRA G	Glass fiber	Sanded	All fully adhered, heat welded SBS field base plies. Refer to Table 3.1.1a.
			All fully adhered, cold adhesive-applied field base plies (Refer to Table 3.2.1a.) applied with COLPLY™ ADHESIVE.
			All fully adhered, self-adhesive field base plies. Refer to Table 3.4.1a.
			All hot asphalt-applied field base plies. Refer to Table 3.5a.
SOPRABASE™ S	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field base plies (Refer to Table 3.2.1a.) applied with COLPLY™ ADHESIVE.
			All fully adhered, self-adhesive field base plies. Refer to Table 3.4.1a.
			All hot asphalt-applied field base plies. Refer to Table 3.5a.
SOPRABASE™ TG	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field base plies. Refer to Table 3.1.1a.
SOPRA™ 4897	Glass fiber	Sanded	All fully adhered, heat welded SBS field base plies. Refer to Table 3.1.1a.
			All fully adhered, cold adhesive-applied field base plies (Refer to Table 3.2.1a.) applied with COLPLY™ ADHESIVE.
			All fully adhered, self-adhesive field base plies. Refer to Table 3.4.1a.
			All hot asphalt-applied field base plies. Refer to Table 3.5a.
ULTRA-STICK® NAIL BASE	Glass fiber	Permanent Film	ELASTOPHENE® ULTRA-STICK® or SOPRALENE® ULTRA-STICK®

Table 2.1b Base Sheet/Anchor Sheet Fasteners			
Name	**Graphic**	**Base Sheet/Anchor Sheet**	**Substrate**
FM-90 BASE SHEET FASTENER or FM-75 BASE SHEET FASTENER		MODIFIED SOPRA G, SOPRABASE™ S, SOPRABASE™ TG, SOPRA™ 4897 ULTRA-STICK® NAIL BASE	Cellular lightweight insulating concrete, Aggregate lightweight insulating concrete, Poured gypsum
TWIN LOC-NAIL		MODIFIED SOPRA G, SOPRABASE™ S, SOPRABASE™ TG, SOPRA™ 4897 ULTRA-STICK® NAIL BASE	Cementitious wood fiber, Aggregate lightweight insulating concrete, Cellular lightweight insulating concrete, Poured gypsum
VERSA-FAST® FASTENER with VERSA-FAST® PLATE		MODIFIED SOPRA G, SOPRABASE™ S, SOPRABASE™ TG, SOPRA™ 4897 ULTRA-STICK® NAIL BASE	Aggregate lightweight insulating concrete, Cellular lightweight insulating concrete, Poured gypsum
Simplex MAXX Cap®		MODIFIED SOPRA G, SOPRABASE™ S, SOPRABASE™ TG, SOPRA™ 4897 ULTRA-STICK® NAIL BASE	Wood

Name	Graphic	Base Sheet/Anchor Sheet	Substrate
Simplex Cap Nail		MODIFIED SOPRA G, SOPRABASE™ S, SOPRABASE™ TG, SOPRA™ 4897 ULTRA-STICK® NAIL BASE	Wood

2.2 HOT ASPHALT-APPLIED BASE SHEETS AND BUILT-UP ROOFING PLY SHEETS

General:

- SOPREMA® base sheets and/or ASTM D2178 ply felts may be applied using hot asphalt to produce multi-ply built-up-roofing membranes, or BUR-SBS modified bitumen hybrid membranes. Refer to Table 2.2a.
- Contact SOPREMA® for pre-approval of ASTM D312 Type III or Type IV mopping asphalt for use in multi-ply built-up membranes. ASTM D312 Type IV mopping asphalt is required for SBS modified bitumen. Refer to Section 3.5.
- Store rolls on end and maintain rolls in an upright position to prevent damage. Store rolls in a clean dry location and cover as necessary to protect rolls from environmental damage such as extreme cold, heat, or moisture.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply hot asphalt and membrane plies.
    - Take all necessary measures and monitor all conditions, to ensure the specified asphalt temperature is no less than the equiviscous temperature (EVT) at the point of contact with the specified membrane as it is unrolled into the hot asphalt.
    - Store rolls in a heated area to maintain the rolls at 70°F (21°C) during cold weather.
- Ensure all substrates are smooth, free of dust and debris, dry and acceptable for installation of the membrane.
- Ensure substrates are even at all substrate transitions to prevent membrane voids. Ensure substrates are primed where required using ELASTOCOL™ 350 or ELASTOCOL™ 500 primer. Refer to Section 1.1.
- Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.
- Refer to mopping asphalt supplier's published values for softening point, 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-applied built-up roofing is 3/4:12. Refer to Section 5.2.
- Remove all roll packaging tape prior to installation.

Application:

- Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- Apply mopping asphalt within +/- 25°F (14°C) of the published EVT and as required to obtain a nominal 23 to 25 pounds per square interply coverage rate. Refer to the EVT provided by the asphalt supplier.

- The Type III asphalt application temperature should be within 365 to 435°F (185 to 224°C), and Type IV asphalt should be within 400 to 475°F (204 to 246°C) at the point of contact with the ply as the ply is rolled into the hot asphalt.
- The asphalt application temperature should be monitored and recorded during application to ensure application temperature remains as published herein.
- TWO (2) PLY BUILT-UP ROOFING APPLICATION (Refer to Figure 2.2a):
    - First, start at the low point of the roof by installing a ply cut 18 inches wide.
    - Second, install a full 36 inch wide ply, installed along the same low point of the roof.
    - Next install a full 36 inch wide ply, installed 19 inches over the second ply (17 inches from the low point of the roof).
    - Each of the following plies should also be installed 19 inches over the preceding ply, producing the same 17 inch exposure.
    - Follow the lay-lines on the plies 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 (Refer to Figure 2.2b):
    - First, start at the low point of the roof by installing a ply cut 12 inches wide.
    - Second, install a ply cut 24 inches wide, installed along the same point of the roof.
    - Third, install a full 36 inch wide ply, installed along the same low point of the roof.
    - Next install a full 36 inch wide ply, installed 24-2/3 inches over the third ply (11-1/8 inches from the low point of the roof).
    - Each of the following plies should be installed 24-2/3 inches over the preceding ply, producing the same 11-1/8 inch exposure.
    - Follow the lay-lines on the plies 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 (Refer to Figure 2.2c):
    - First, start at the low point of the roof by installing a ply cut 9 inches wide.
    - Second, install a ply cut 18 inches wide, installed along the same low point of the roof.
    - Third, install a ply cut 27 inches wide, installed along the same low point of the roof.
    - Fourth, install a full 36 inch wide ply installed along the same low point of the roof.
    - Next install a full 36 inch wide ply, installed 27-1/2 inches over the fourth ply (8-1/2 inches from the low point of the roof).
    - Each of the following ply should be installed 27-1/2 inches over the preceding ply, producing the same 8-1/2 inch exposure.
    - Follow the lay-lines on the plies 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 plies 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 plies. Allow the asphalt to cool sufficiently before walking over the new membrane.
- Where completed built-up membrane or vapor retarder is to be left exposed during construction, apply a thin squeegee coat of hot asphalt over the membrane surface to seal the surface watertight.
- Apply approved surfacing or cap sheet.

Inspection:

- Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps and all other deficiencies each day.
- Do not leave built-up membrane 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 work day.
- Do not phase built-up roofing felt applications. Install the total number of specified built-up roofing plies each day.

- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- BUR exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the BUR is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the BUR to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 2.2a Hot Asphalt-Applied Base Sheets and BUR Ply Sheets				
Name	**Reinforcement**	**Bottom Surfacing**	**Top Surfacing**	**Overlying SBS Field Ply Options**
MODIFIED SOPRA G	Glass fiber	Sanded	Sanded	All fully adhered, heat welded SBS base plies and cap sheets. Refer to Table 3.1.1a.
				All fully adhered, cold adhesive-applied base plies and cap sheets (Refer to Table 3.2.1a) applied with COLPLY™.
				All fully adhered, self-adhesive base plies and cap sheets. Refer to Table 3.4.1a.
				All hot asphalt-applied base plies. Refer to Table 3.5a.
SOPRABASE™ S	Non-woven polyester	Sanded	Sanded	All fully adhered, cold adhesive-applied base plies and cap sheets (Refer to Table 3.2.1a) applied with COLPLY™.
				All fully adhered, self-adhesive base plies and cap sheets. Refer to Table 3.4.1a.
				All hot asphalt-applied base plies. Refer to Table 3.5a.
SOPRA™ IV, SOPRA™ VI	Glass fiber	None	None	All fully adhered, heat welded SBS base plies and cap sheets. Refer to Table 3.1.1a.
				All fully adhered, cold adhesive-applied base plies and cap sheets (Refer to Table 3.2.1a) applied with COLPLY™.
				All fully adhered, self-adhesive base plies and cap sheets. Refer to Table 3.4.1a.
				All hot asphalt-applied base plies. Refer to Table 3.5a.

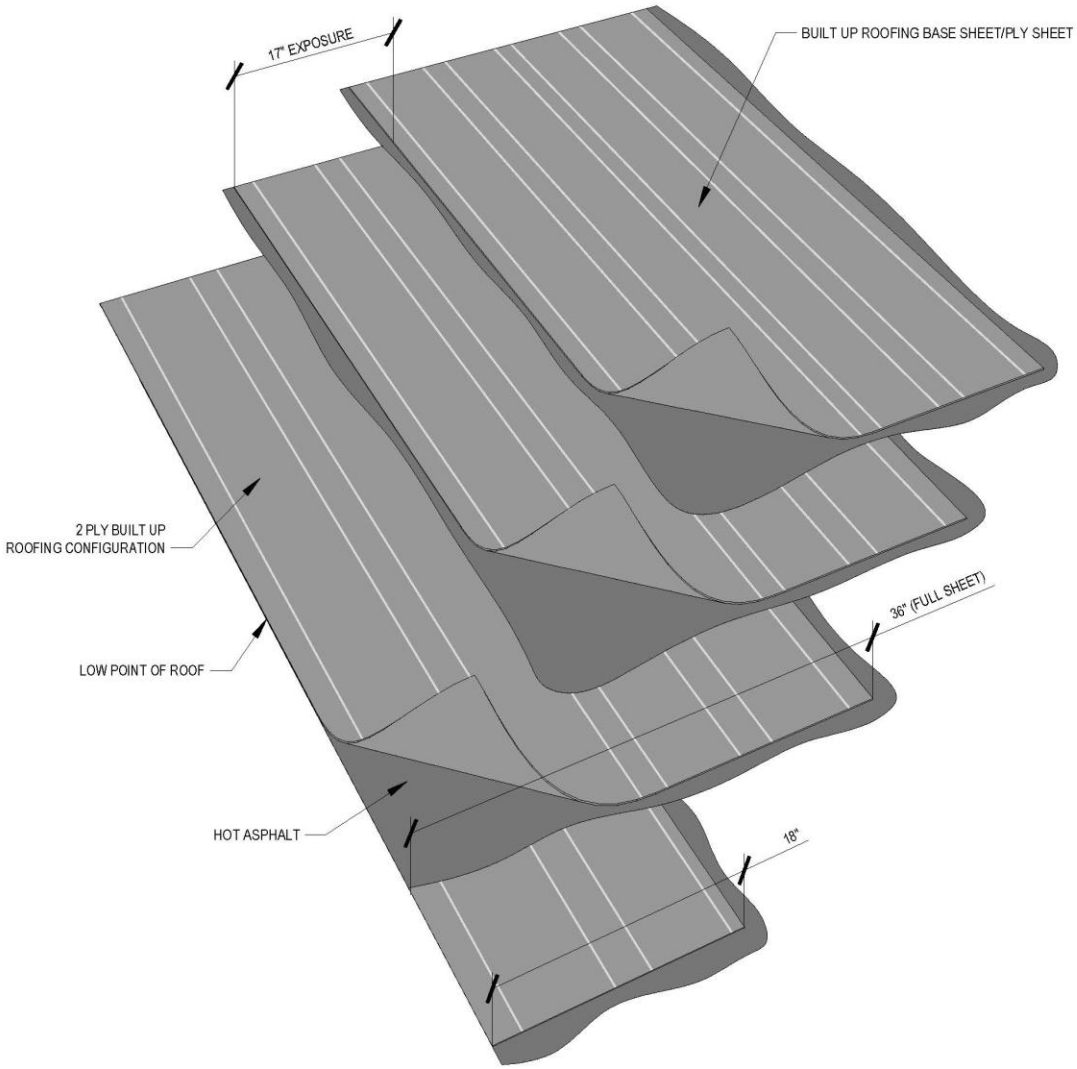


Figure 2.2a Two (2) Ply Built Up Roofing Configuration

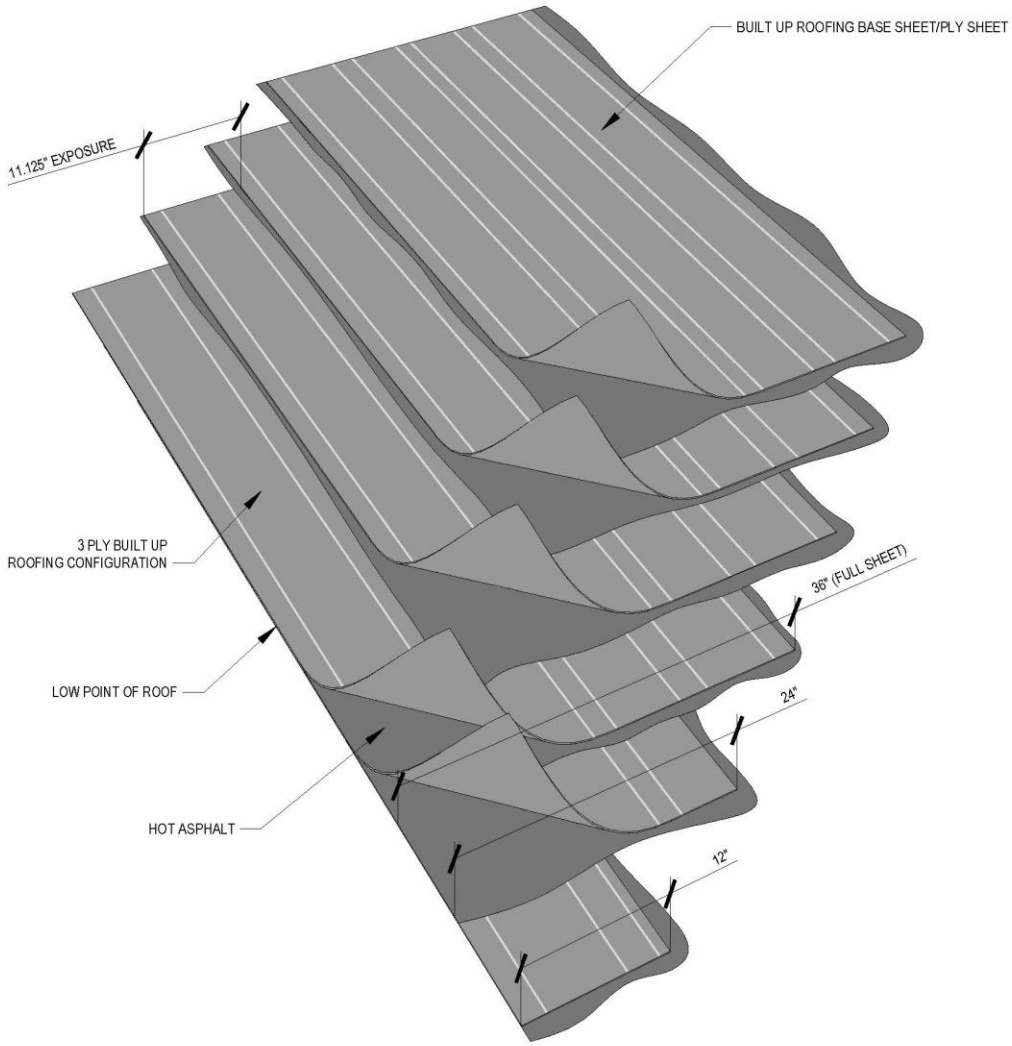


Figure 2.2b Three (3) Ply Built Up Roofing Configuration

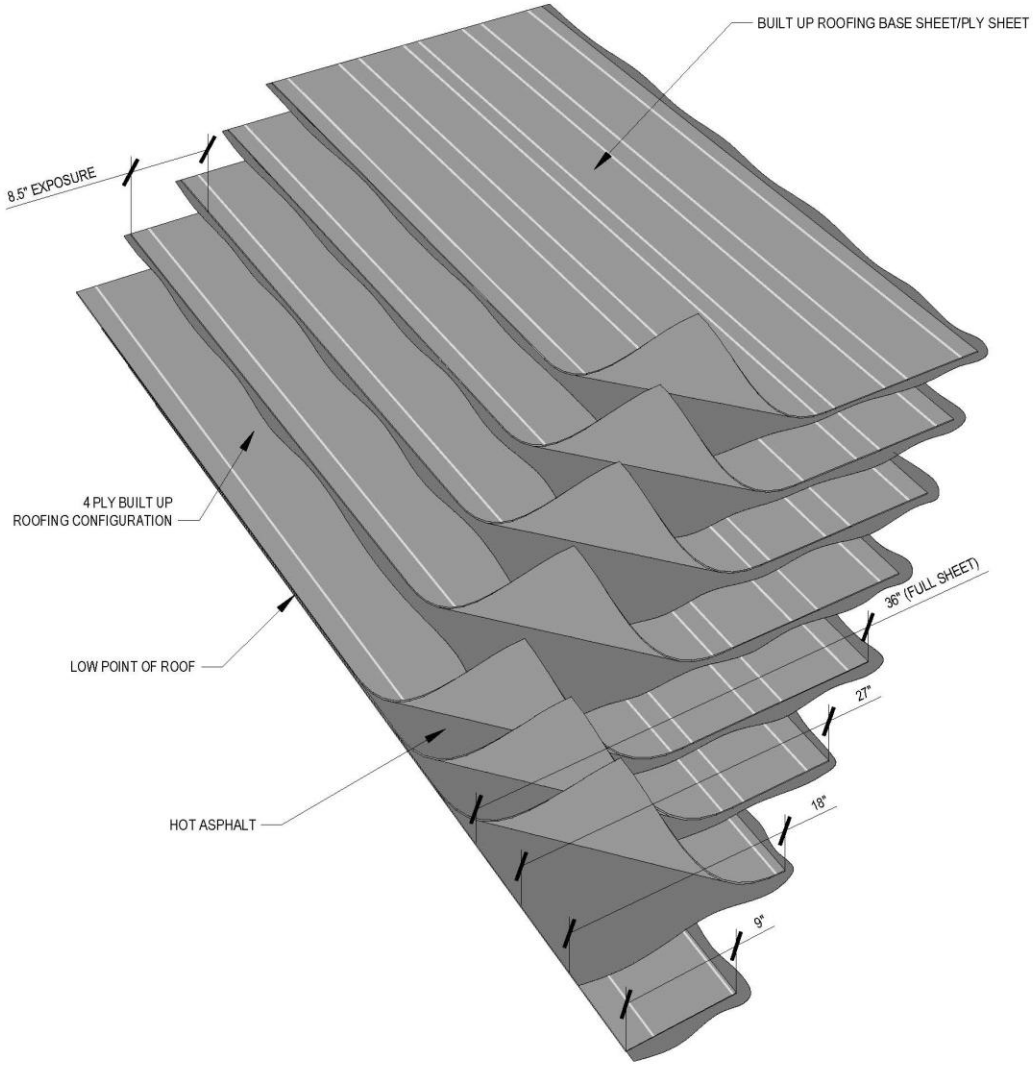


Figure 2.2c Four (4) Ply Built Up Roofing Configuration

3 SBS MODIFIED BITUMEN MEMBRANES

3.1 HEAT WELDED SBS MODIFIED BITUMEN MEMBRANES

3.1.1 FULLY ADHERED, HEAT WELDED FIELD PLIES

General:

- SOPREMA® heat welded SBS modified bitumen base plies may be installed over approved insulation substrates, mechanically fastened base sheets, and installed over other SBS modified bitumen plies that are heat welded, self-adhesive applied, hot asphalt applied or cold adhesive-applied. Heat welded SBS modified bitumen base plies may also be installed over hot asphalt-applied built-up membranes.
- Heat welded SBS modified bitumen cap sheets may be installed over SOPREMA® SBS modified bitumen base plies that are heat welded, mechanically fastened, self-adhesive applied, hot asphalt applied or cold adhesive-applied. Heat welded cap sheets may also be installed over hot asphalt-applied built-up membranes for hybrid BUR-SBS membranes.
- The underside of heat welded SBS membrane plies have a plastic burn-off film to optimize heat welding operations. Refer to the PDS and SDS for additional product information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Ensure all roofing substrates are prepared and acceptable to receive the heat-welded membrane plies.
- Ensure substrates are primed where required using ELASTOCOL™ 350 or ELASTOCOL™ 500 primer. Ensure primer is fully dry before beginning heat-welding operations. Refer to Section 1.1.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer to the clean, prepared substrate.
    - Heat weld an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Allow sufficient time for the samples to cool.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.

    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away "clean" from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.
- Where the applicator deems conditions are unsafe to use open flames, SOPREMA® alternate membrane application methods should be used to install SBS modified bitumen membranes. Acceptable alternate installation methods include self-adhesive membranes, mechanically fastened plies, cold adhesive-applied and hot asphalt-applied plies.
- Remove all roll packaging tape prior to installation.

Application:

- Single or multi-nozzle, hand-held propane roof torches should be used to install heat welded SBS field membranes.
- Multi-nozzle carts "dragon wagons" may also be utilized to install membrane plies. Seven (7) nozzle carts are recommended for uniform heat application rather than five (5) nozzle carts.
- SOPREMA® Mini MACADEN® 1000 is recommended to optimize the efficiency of heat welded SBS field membranes for large roofing and waterproofing projects. Contact SOPREMA® for more information.
- Refer to the following instructional videos for heat welded SBS modified bitumen membranes:
    - Heat Applied Granulated Cap Field Installation Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=rGeFwoTbtq8&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q&index=10
    - Heat Applied Base Field Installation Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=CsBo7outpc8&index=11&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q
- Unroll membrane sheets 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.
- 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.
- As the membrane ply is unrolled, apply heat to the underside of the ply until plastic burn-off film melts away sufficiently for full adhesion to the substrate, and full adhesion between plies.
- For hand-held roof torches, continuously move the torch side-to-side across the underside of the roll to melt the bitumen while continuously unrolling sheet.
- For multi-nozzle carts, apply uniform heat to the underside of the roll to melt the bitumen while continuously unrolling the sheet.
- While unrolling and heating the sheet, ensure approximately ¼ to 1/2 in of hot bitumen flows ahead of the roll, and there is 1/8 to 1/4 in bleed out at all laps. Ensure all side-laps are fully adhered and sealed watertight.
- Adjust application methods to accommodate varying environmental conditions as necessary to achieve the desired results.

- For gypsum coverboards and other substrates subject to potential damage, apply heat high on the roll to prevent overheating or damaging the substrate.
- At 6 in end-laps where T-Joints exist, cut a 45 degree dog-ear away from the selvage edge.
- The cap sheet should be applied parallel with the base ply so that the cap sheet side-laps do not cross over or overlap onto the base ply side-laps.
- For ELASTOPHENE® FLAM HS FR GR cap sheets, seal all cut edges and edges at end-laps with SOPRAMASTIC™ SBS ELASTIC CEMENT.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.1.1a Fully Adhered, Heat-Welded Field Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
ELASTOPHENE® FLAM, ELASTOPHENE® FLAM 2.2	Base ply	Glass fiber	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
ELASTOPHENE® FLAM HR 2.2, ELASTOPHENE® FLAM HR 3.0	Base ply	Glass grid	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
ELASTOPHENE® FLAM HS	Base ply	Composite	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRALENE® FLAM 180, SOPRALENE® FLAM 250	Base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
ELASTOPHENE® SP 2.2, ELASTOPHENE® SP 3.0	Base ply	Glass fiber	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied base plies. Refer to Table 3.5a.
SOPRALENE® 180 SP 3.0, SOPRALENE® 180 SP 3.5	Base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies . Refer to Table 3.4.1a.
				All hot asphalt-applied base plies. Refer to Table 3.5a.

Name	Application	Reinforcement	Top Surfacing	Overlying SBS Field Ply Options
ELASTOPHENE® FLAM LS FR GR, ELASTOPHENE® FLAM FR GR, ELASTOPHENE® FLAM FR+ GR, ELASTOPHENE® FLAM HR FR GR	Cap sheet	Glass fiber	Mineral granule	None
ELASTOPHENE® FLAM HS FR GR	Cap sheet	Composite	Mineral granule	None
SOPRALENE® FLAM 180 FR GR, SOPRALENE® FLAM 250 FR GR, SOPRALENE® FLAM 180 FR+ GR, SOPRALENE® FLAM 250 FR+ GR	Cap sheet	Non-woven polyester	Mineral granule	None
SOPRALAST™ 50 TV ALU	Cap sheet	Glass grid	Aluminum foil-clad	None

Table 3.1.1b Substrate Preparation, Fully Adhered, Heat-Welded SBS Field Plies	
Substrate ***	**Preparation**
Concrete	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Metal	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Masonry	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved gypsum roof boards**	Optional prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved cement roof boards	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Wood	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
SOPRABOARD™	None
All base sheets/anchor sheets. Refer to Section 2.	None
Plastic burn-off film surfaced SBS membrane	None
Sand-surfaced SBS membrane laps	None
Granule-surfaced SBS membrane laps	Embed granule surfacing. Refer to Table 3.1.1c
Foil/Film surfaced SBS membrane laps	Remove foil/film surfacing. Refer to Table 3.1.1c

*Refer to Section 1.1 for priming.
**Primer is optional. Primer is recommended for optimum performance. Contact SOPREMA®.
***Refer to NRCA CERTA recommendations for heat welding methods and recommended protection of substrates.

Table 3.1.1c Fully Adhered, Heat-Welded Field Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
ELASTOPHENE® FLAM, ELASTOPHENE® FLAM 2.2, ELASTOPHENE® FLAM HR 2.2, ELASTOPHENE® FLAM HR 3.0, ELASTOPHENE® FLAM HS, SOPRALENE® FLAM 180, SOPRALENE® FLAM 250, ELASTOPHENE® SP 2.2, ELASTOPHENE® SP 3.0, SOPRALENE® 180 SP 3.0, SOPRALENE® 180 SP 3.5	Heat welded	None
ELASTOPHENE® FLAM LS FR GR, ELASTOPHENE® FLAM FR GR, ELASTOPHENE® FLAM FR+ GR, ELASTOPHENE® FLAM HR FR GR, ELASTOPHENE® FLAM HS FR GR, SOPRALENE® FLAM 180 FR GR, SOPRALENE® FLAM 250 FR GR, SOPRALENE® FLAM 180 FR+ GR, SOPRALENE® FLAM 250 FR+ GR	Heat welded	Embed surfacing granules*
SOPRALAST™ 50 TV ALU	Heat welded	Remove foil/film surfacing**

*Refer to Section 5.3.1.
**Refer to Section 5.3.2.

3.1.2 FULLY ADHERED, HEAT-WELDED FLASHING PLIES

General:

- SOPREMA® flashing base plies may be heat welded over approved flashing substrates. Flashing substrates include concrete, masonry, metal, approved roof boards, mechanically fastened base sheets, and other SBS modified bitumen flashing plies that are heat welded, self-adhesive applied or cold adhesive-applied. Contact SOPREMA® for additional information.
- Flashing cap sheets may be installed over SOPREMA® SBS modified bitumen flashing base plies that are heat welded, mechanically fastened, self-adhesive applied or cold adhesive-applied.
- The underside of heat welded SBS flashing plies have a plastic burn-off film to optimize heat welding operations. The top surfacing varies. Refer to Table 3.1.2a. Refer to the PDS and SDS for additional product information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and flashing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Ensure all flashing substrates are prepared and acceptable to receive the heat-welded flashing plies.
- Ensure substrates are primed where required using ELASTOCOL™ 350 or ELASTOCOL™ 500 primer. Ensure primer is fully dry before beginning heat-welding operations. Refer to Section 1.1.
- Adhesion/peel tests are encouraged for concrete, masonry and for other flashing substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer to the clean, prepared substrate.
    - Heat weld an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Allow sufficient time for the samples to cool.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away “clean” from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:

    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.
- Where the applicator deems conditions are unsafe to use open flames, SOPREMA® alternate flashing application methods should be used to install SBS modified bitumen flashings. Acceptable alternate installation methods include self-adhesive flashings, mechanically fastened plies, cold adhesive-applied, or SOPREMA® ALSAN® FLASHING or ALSAN® RS flashing systems.
- Do not apply direct flames from roof torches to combustible materials such as insulation, wood and paper-faced materials. Seal all joints and penetrations using self-adhesive modified bitumen membrane plies or other acceptable methods.
- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.
- Remove all roll packaging tape prior to installation.

Application:

- Single-nozzle, hand-held, propane detail torches should be used to install heat welded SBS flashing membranes.
- Refer to the following instructional videos for heat welded SBS modified bitumen flashings:
    - Heat Applied Granulated Cap Flashing Installation Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=-La9StLJL6c&index=5&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q
    - Heat Applied Base Flashing Installation Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=jL5Jc-rJvPo
    - SOPRALAST™ TV ALU Flashing Installation Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=NGJoEkSO2CE&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q&index=1
- Unroll flashing sheets onto the roof surface and allow time to relax prior to heat welding.
- 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 in order to always install flashings to the side-lap line or selvage edge line.
- Install non-combustible cant strips at transitions where required. Cants may be omitted where specified and where SOPREMA® flashing plies meet the following requirements:
    - Flashing base ply: Heat welded, polyester reinforced.
    - Flashing cap sheet: Heat welded, polyester reinforced granule-surfaced cap sheet, or heat welded foil/film clad flashing cap sheet. Refer to Figures 3.1.2a and 3.1.2b.
- Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.
    - Before installing flashings, extend the membrane base ply up from the horizontal field of the roof to the top of the cant (if used), at all vertical roof terminations, transitions and penetrations.
    - 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 in beyond the wall/curb or base of the cant (if used) onto the horizontal roof surface. Ensure a minimum 3 in side-lap is maintained.
    - Install gussets to seal inside and outside corner transitions.

    - Install the roof membrane cap sheet in the horizontal field of the roof over the flashing base ply then up to the roof termination, transition or penetration. Extend the membrane cap sheet up to the top of the cant where present.
    - Using a chalk line, mark a line on the membrane cap sheet a minimum of 1 in beyond the underlying flashing base ply. Where granules are present, embed the cap sheet granules using a torch and trowel or granule embedder. Where foil or film surfacings are present, remove the foil or film as required. Refer to Table 3.1.2.c.
    - Install the flashing cap sheet starting at the top leading edge of the vertical substrate, down over the cant and onto the roof surface 1 in beyond the underlying flashing base ply. Install the flashing cap sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions and penetrations. Refer to Figures 3.1.2a through 3.1.2d and 3.1.2k through 3.1.2r.
- During the membrane and flashing installation, ensure all plies are completely adhered in place, with no bridging, voids or openings.
- Ensure bitumen bleed-out is present at all flashing side-laps and end-laps. Where sufficient bitumen bleed-out is not present, apply SOPRAMASTIC™ SP1 or SOPRAMASTIC™ ALU sealant 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.
- Use a damp sponge float or damp cloth to press-in the heat-welded flashing plies during installation.
- Fasten the top leading edge of the flashings 8 in on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates.
- For granule surfaced flashing cap sheet end-laps, embed granules. Refer to Table 3.1.2.c. Immediately broadcast matching granules into bitumen bleed-out at all side and end-laps.
- For SOPRALAST™ 50 TV ALU flashing cap sheet end-laps, bitumen bleed-out may be treated using SOPRALASTIC 124 ALU.
- Seal flashing fastener penetrations watertight using SOPRAMASTIC™ SP1 sealant.
- ALSAN® RS and ALSAN® FLASHING liquid-applied, reinforced flashing systems may be installed as an alternate to SBS flashing membranes. Refer to Section 4, *LIQUID-APPLIED FLASHINGS*.
- Contact SOPREMA® for other flashing options.

Inspection:

- Each day, physically inspect all side and end-laps, and ensure the flashings are 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.1.2a Fully Adhered, Heat-Welded Flashing Plies				
Name	**Application**	**Reinforcement**	**Surfacing**	**Overlying SBS Flashing Ply Options**
SOPRALENE® FLAM 180, SOPRALENE® FLAM 250	Flashing base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS flashing plies. Refer to Table 3.1.2a.
SOPRALENE® 180 SP 3.0, SOPRALENE® 180 SP 3.5	Flashing base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied flashing plies. Refer to Table 3.2.2a.
				All fully adhered, self-adhesive flashing plies. Refer to Table 3.4.2a.
SOPRALENE® FLAM 180 FR GR, SOPRALENE® FLAM 180 FR+ GR, SOPRALENE® FLAM 250 FR GR, SOPRALENE® FLAM 250 FR+ GR	Flashing cap sheet	Non-woven polyester	Mineral granule	None
SOPRALAST™ 50 TV ALU	Flashing cap sheet	Glass grid	Aluminum foil-clad	None

Table 3.1.2b Substrate Preparation, Fully Adhered, Heat-Welded Flashing Plies	
Substrate ***	**Preparation**
Concrete	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Metal	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Masonry	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved gypsum roof boards**	Optional prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved cement roof boards	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Wood	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
SOPRABOARD™	None
Base sheets/anchor sheets	None
Plastic burn-off film surfaced SBS membranes	None
Sand-surfaced SBS membranes**	None
Granule-surfaced SBS membranes	Embed granule surfacing. Refer to Section 5.3.1
Foil/Film surfaced SBS membranes	Remove foil/film surfacing. Refer to Section 5.3.2

*Refer to Section 1.1 for priming.
**Primer is optional, primer is recommended for optimum performance. Contact SOPREMA®.
***Refer to NRCA CERTA recommendations for heat welding application methods and protection of substrates.

Table 3.1.2c Fully Adhered, Heat-Welded Field Plies End-Lap Preparation		
Cap Sheet Name	**End Lap Application Method**	**Preparation**
SOPRALENE® FLAM 180, SOPRALENE® FLAM 250, SOPRALENE® 180 SP 3.0, SOPRALENE® 180 SP 3.5	Heat welded	None
SOPRALENE® FLAM 180 FR GR, SOPRALENE® FLAM 250 FR GR, SOPRALENE® FLAM 180 FR+ GR, SOPRALENE® FLAM 250 FR+ GR	Heat welded	Embed surfacing granules*
SOPRALAST™ 50 TV ALU	Heat welded	Remove foil/film surfacing**

*Refer to Section 5.3.1.
**Refer to Section 5.3.2.

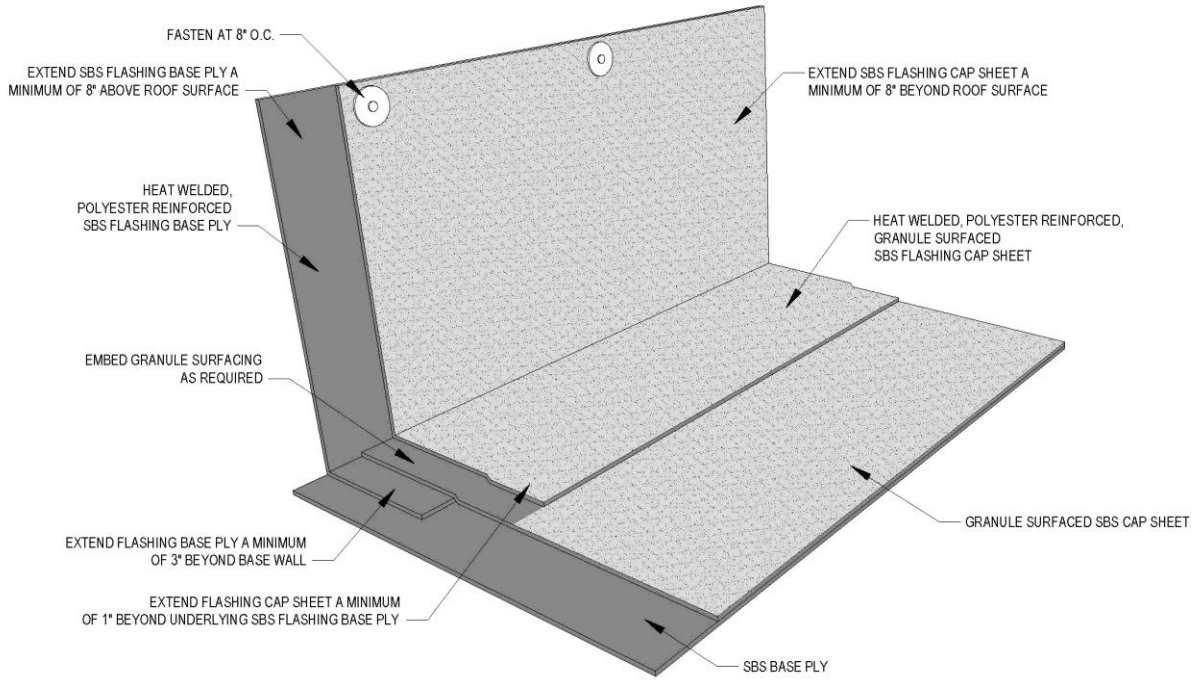


Figure 3.1.2a Fully Adhered, Heat Welded Wall/Curb Flashing On Granular Surfaced Cap Sheet Without Cant

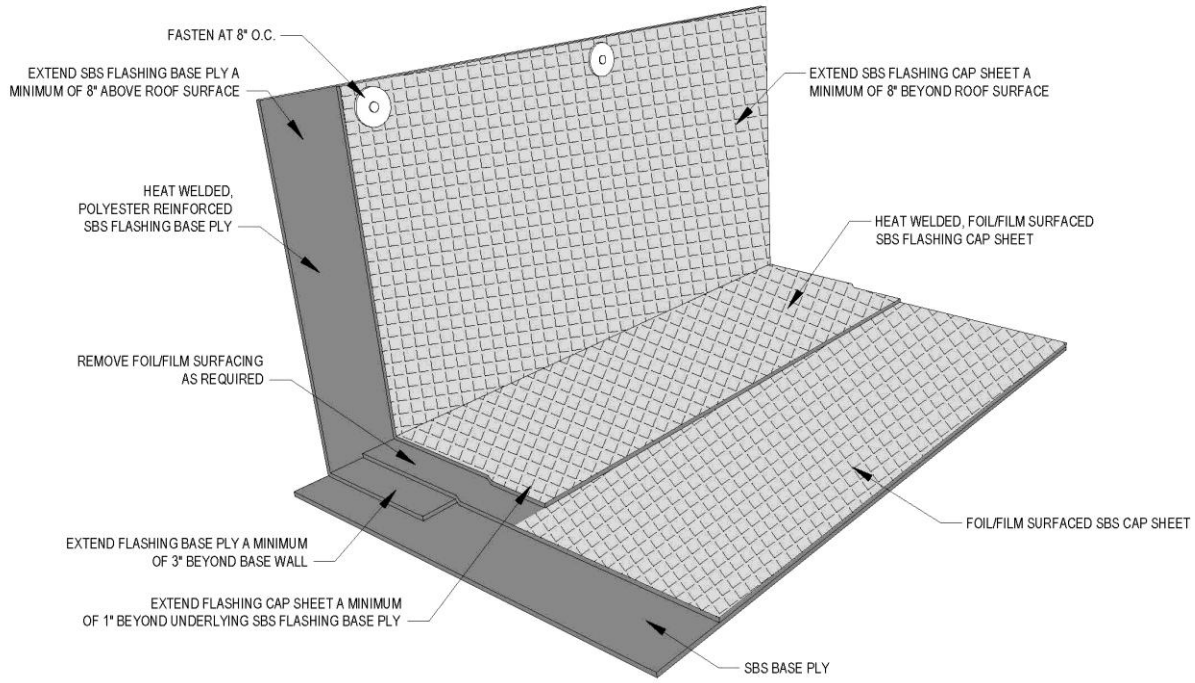


Figure 3.1.2b Fully Adhered, Heat Welded Wall/Curb Flashing On Foil/Film Surfaced Cap Sheet Without Cant

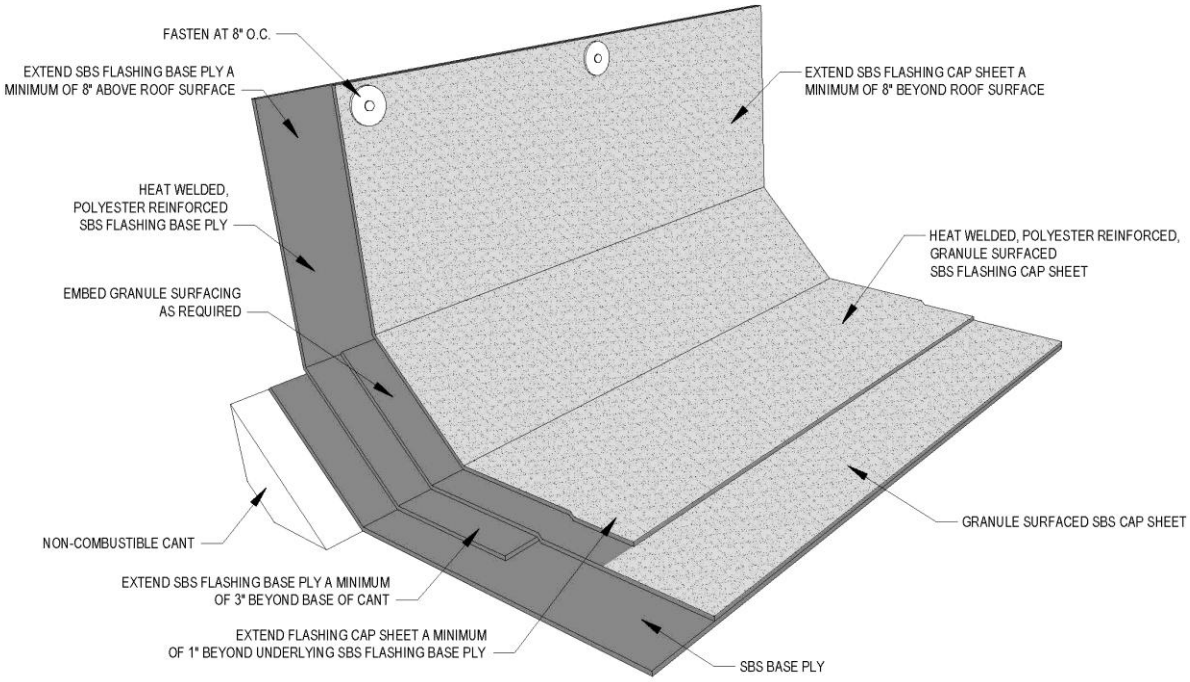


Figure 3.1.2c Fully Adhered, Heat Welded Wall/Curb Flashing On Granular Surfaced Cap Sheet With Cant

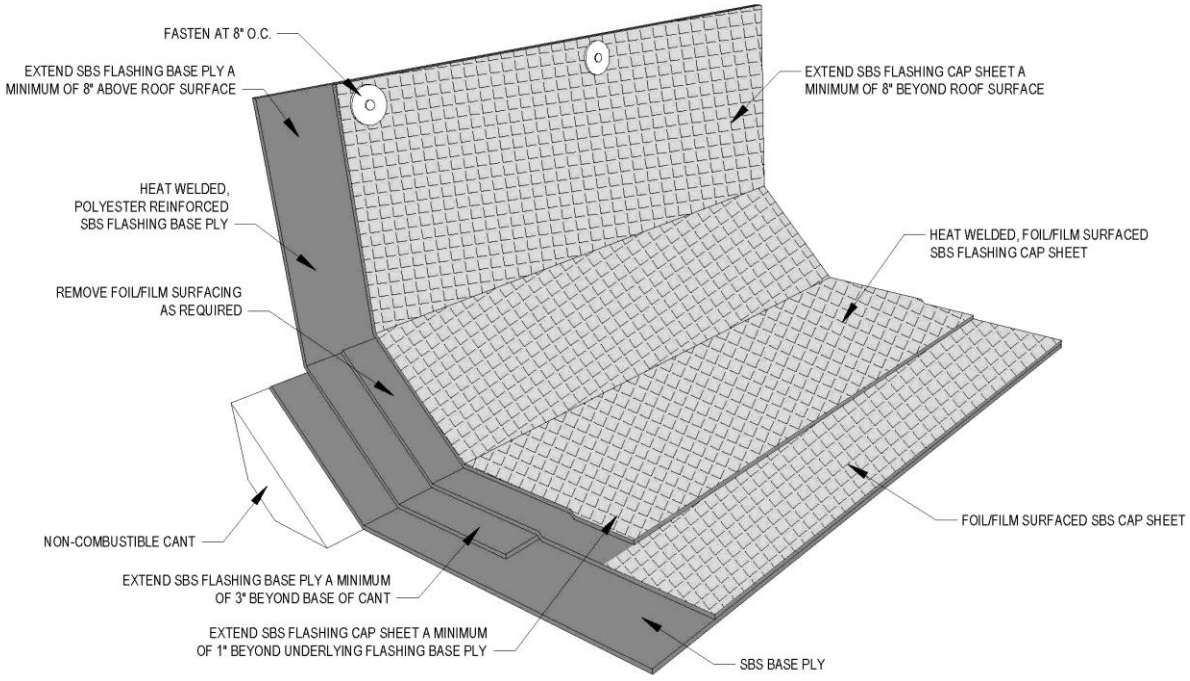


Figure 3.1.2d Fully Adhered, Heat Welded Wall/Curb Flashing On Foil/Film Surfaced Cap Sheet With Cant

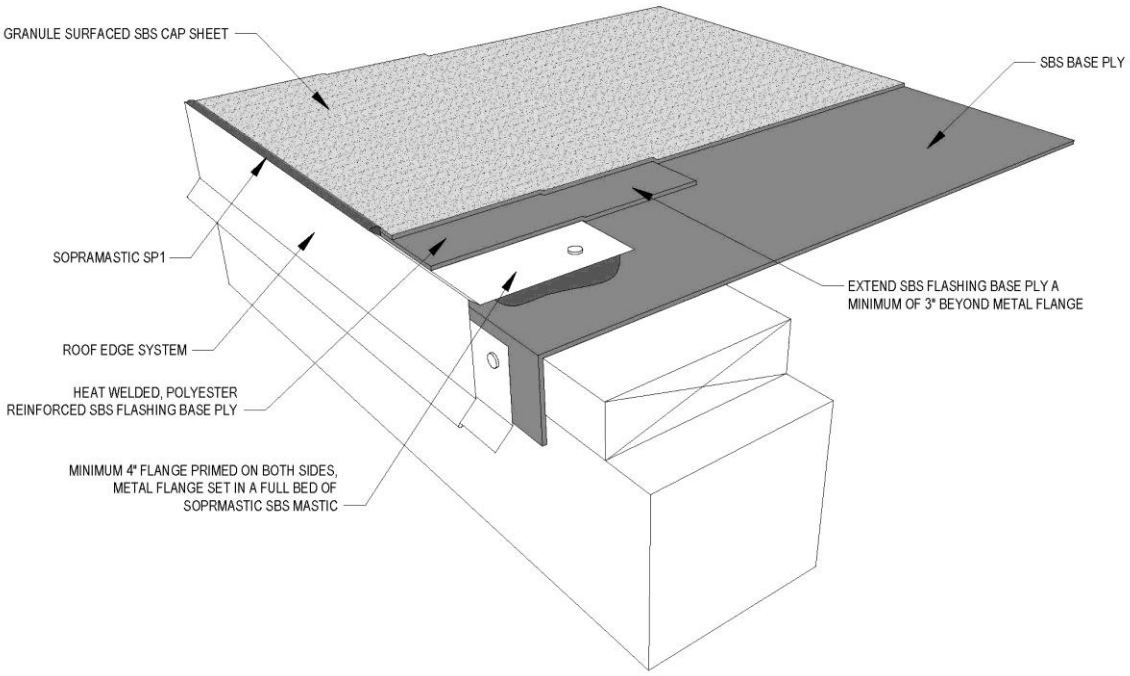


Figure 3.1.2e Fully Adhered, Heat Welded Edge Flashing With Granular Surfaced Cap Sheet

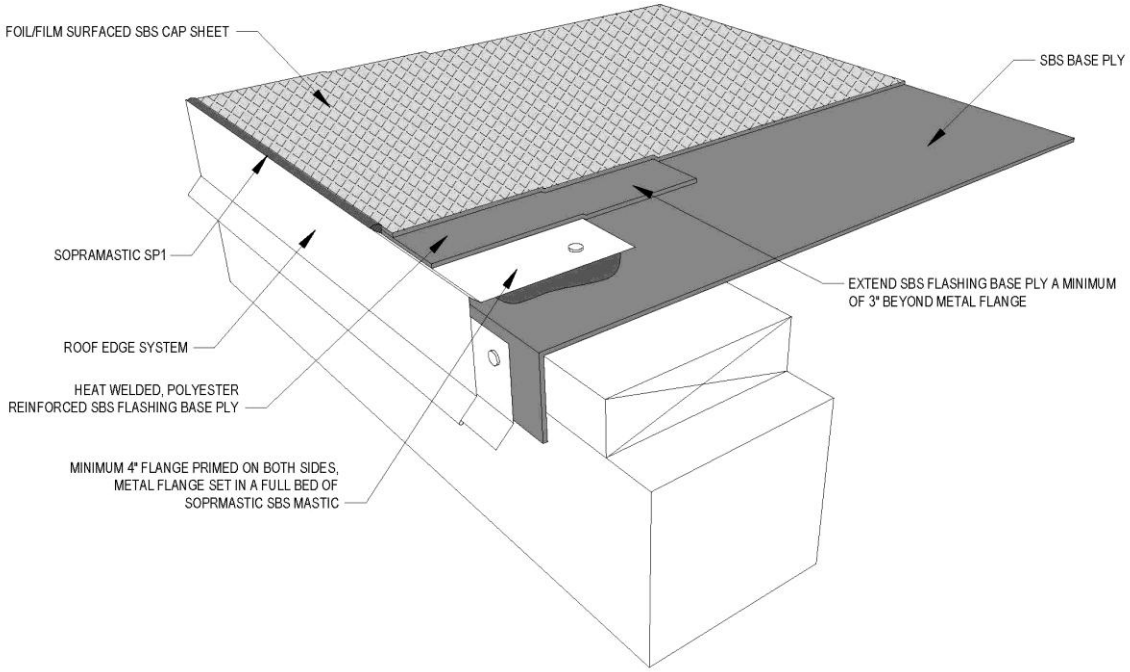


Figure 3.1.2f Fully Adhered, Heat Welded Edge Flashing With Foil/Film Surfaced Cap Sheet

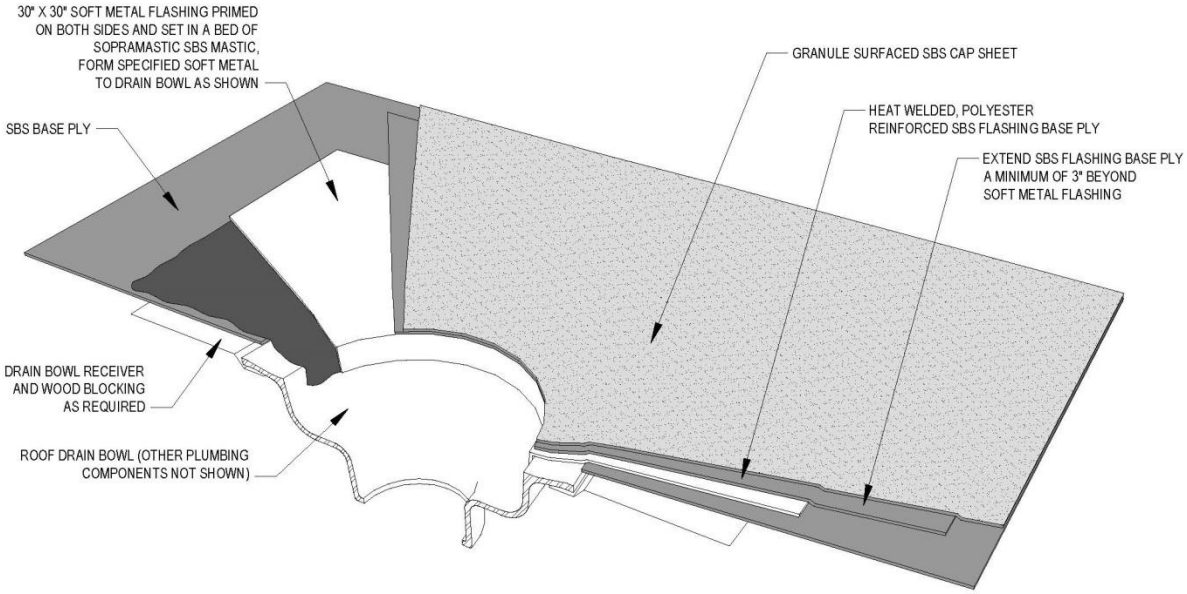


Figure 3.1.2g Fully Adhered, Heat Welded Roof Drain Flashing With Granular Surfaced Cap Sheet

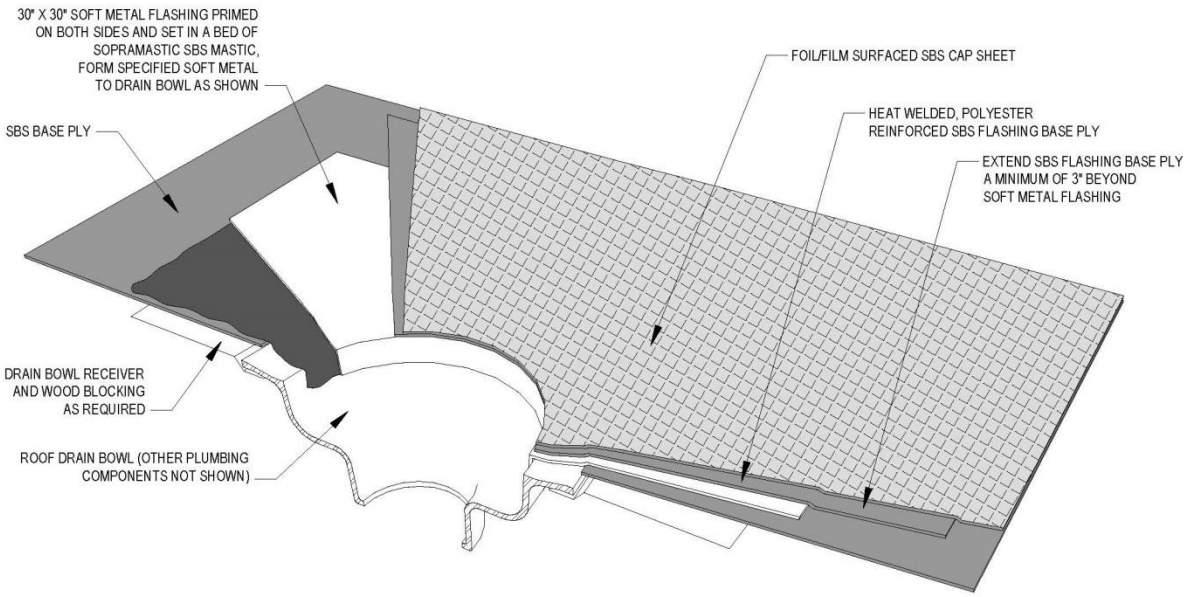


Figure 3.1.2h Fully Adhered, Heat Welded Roof Drain Flashing With Foil/Film Surfaced Cap Sheet

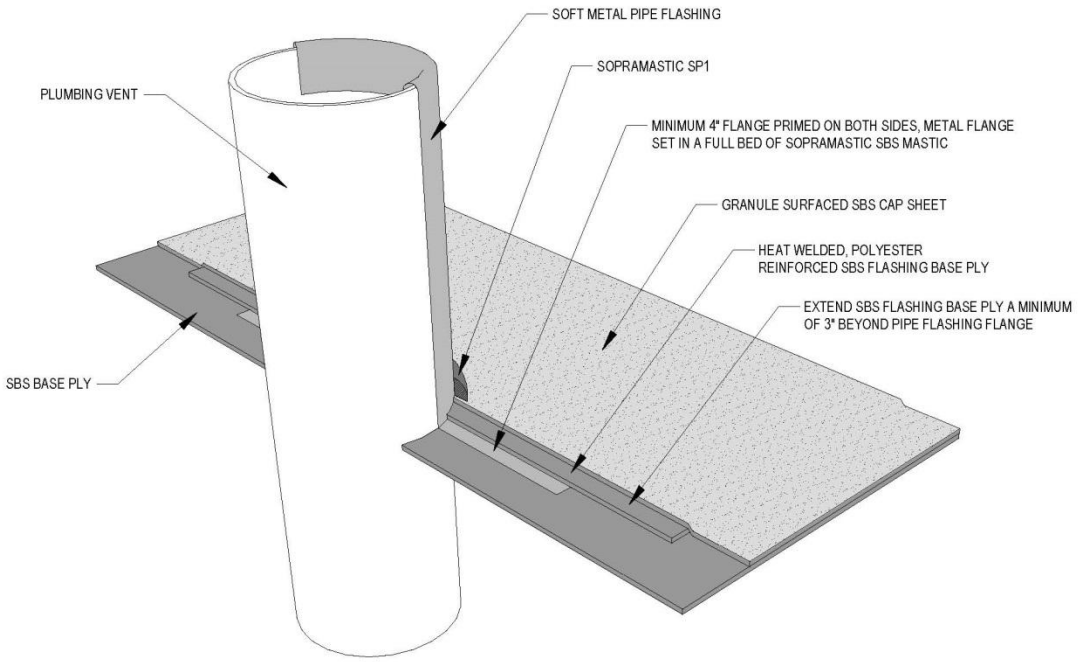


Figure 3.1.2i Fully Adhered, Heat Welded Plumbing Vent Flashing With Granule Surfaced Cap Sheet

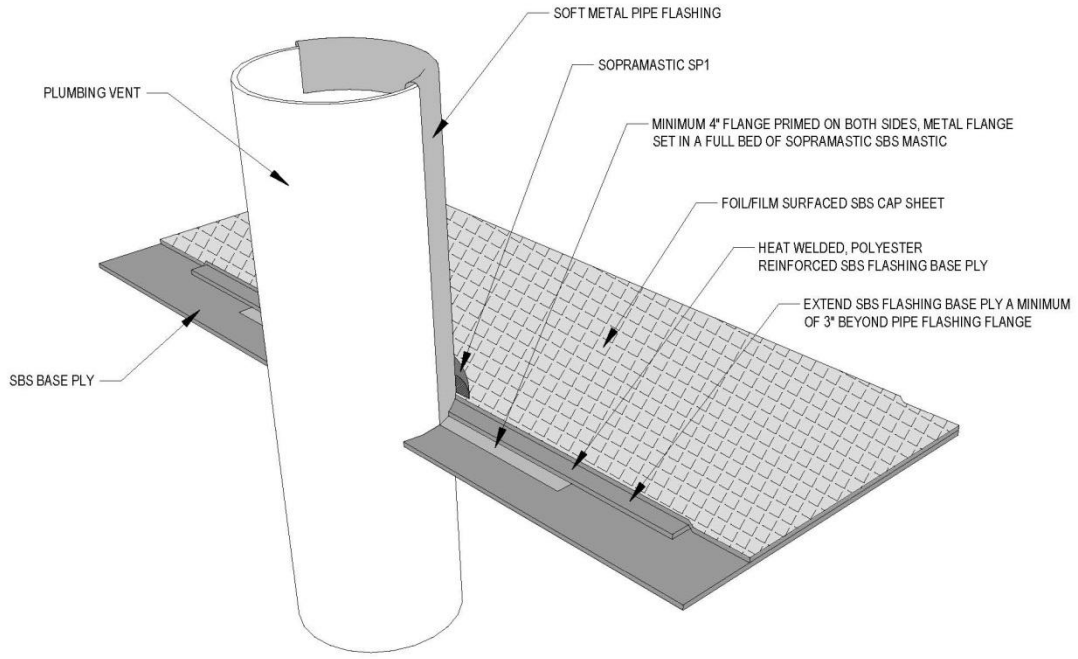


Figure 3.1.2j Fully Adhered, Heat Welded Plumbing Vent Flashing With Foil/Film Surfaced Cap Sheet

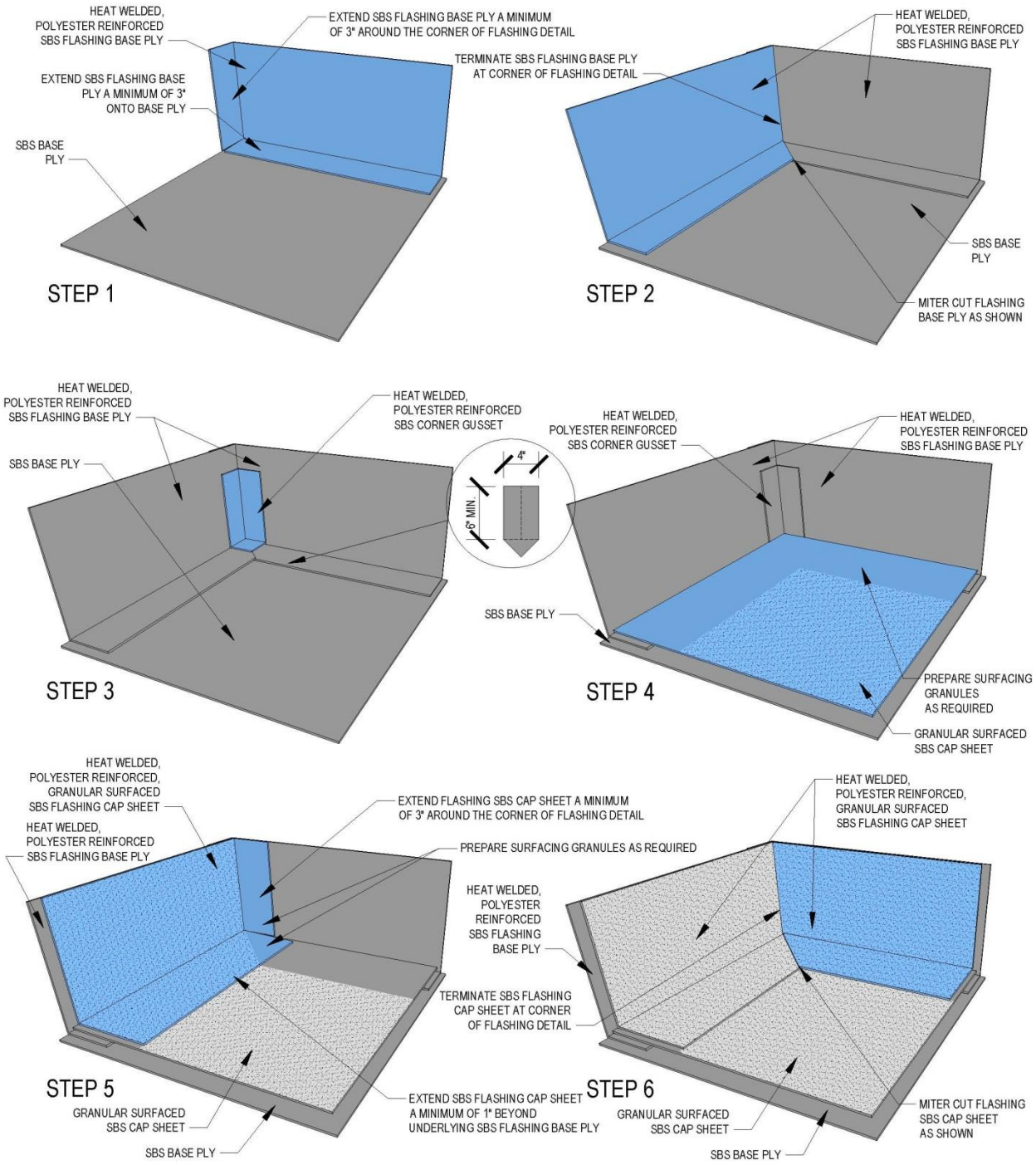


Figure 3.1.2k Fully Adhered, Heat Welded Inside Corner Flashing On Granular Surfaced Cap Sheet Without Cant

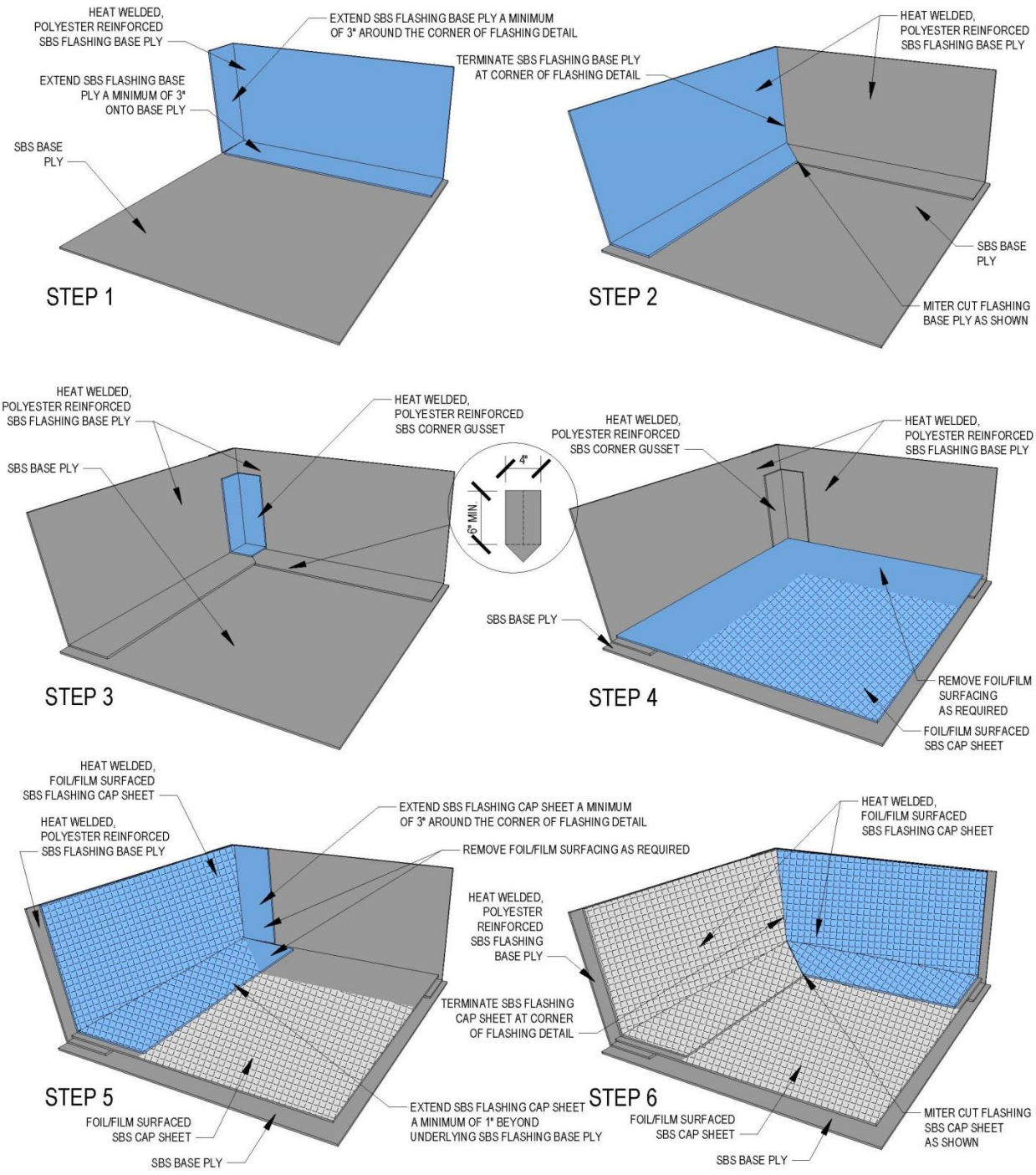


Figure 3.1.2l Fully Adhered, Heat Welded Inside Corner Flashing On Foil/Film Surfaced Cap Sheet Without Cant

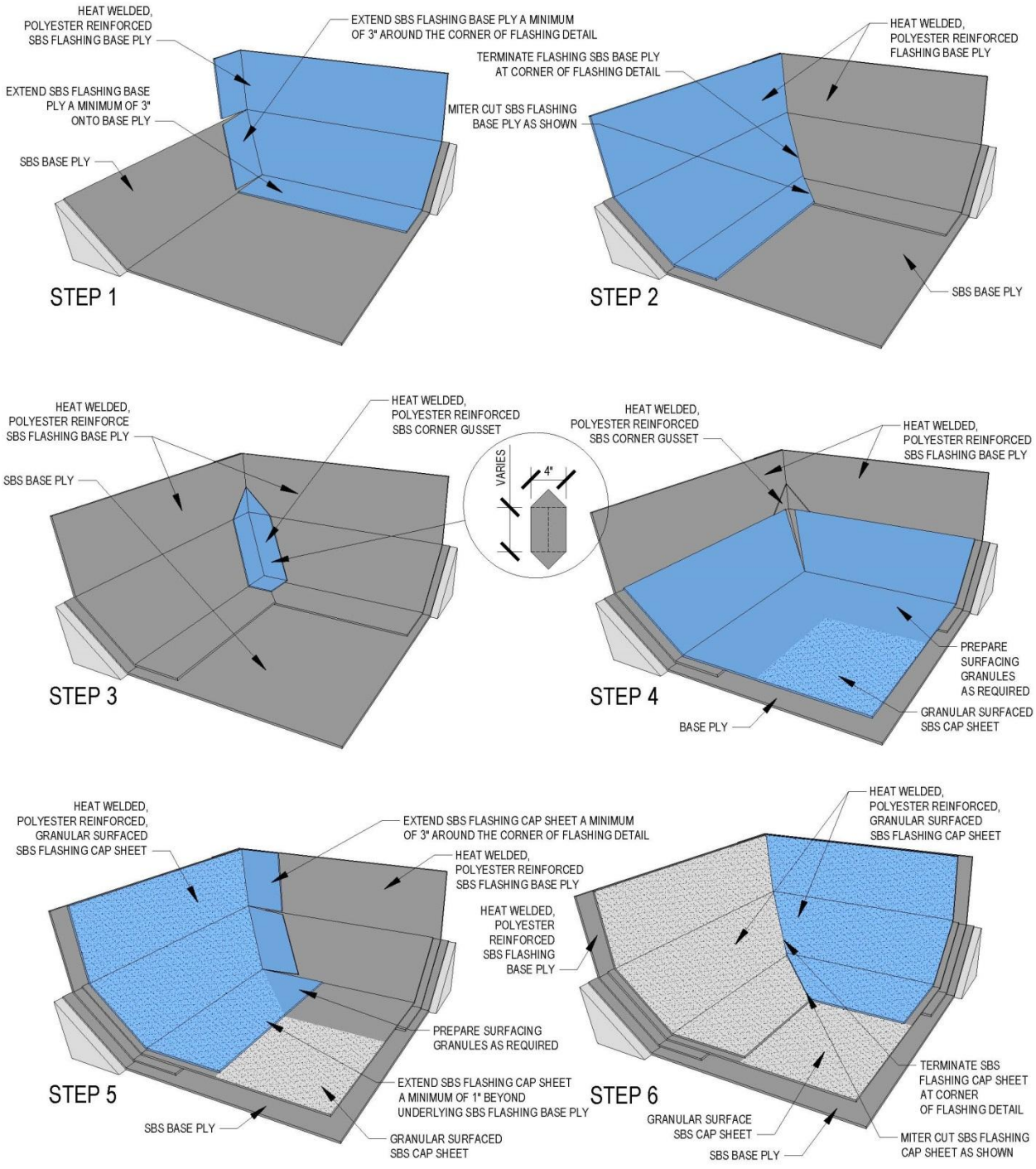


Figure 3.1.2m Fully Adhered, Heat Welded Inside Corner Flashing On Granular Surfaced Cap Sheet With Cant

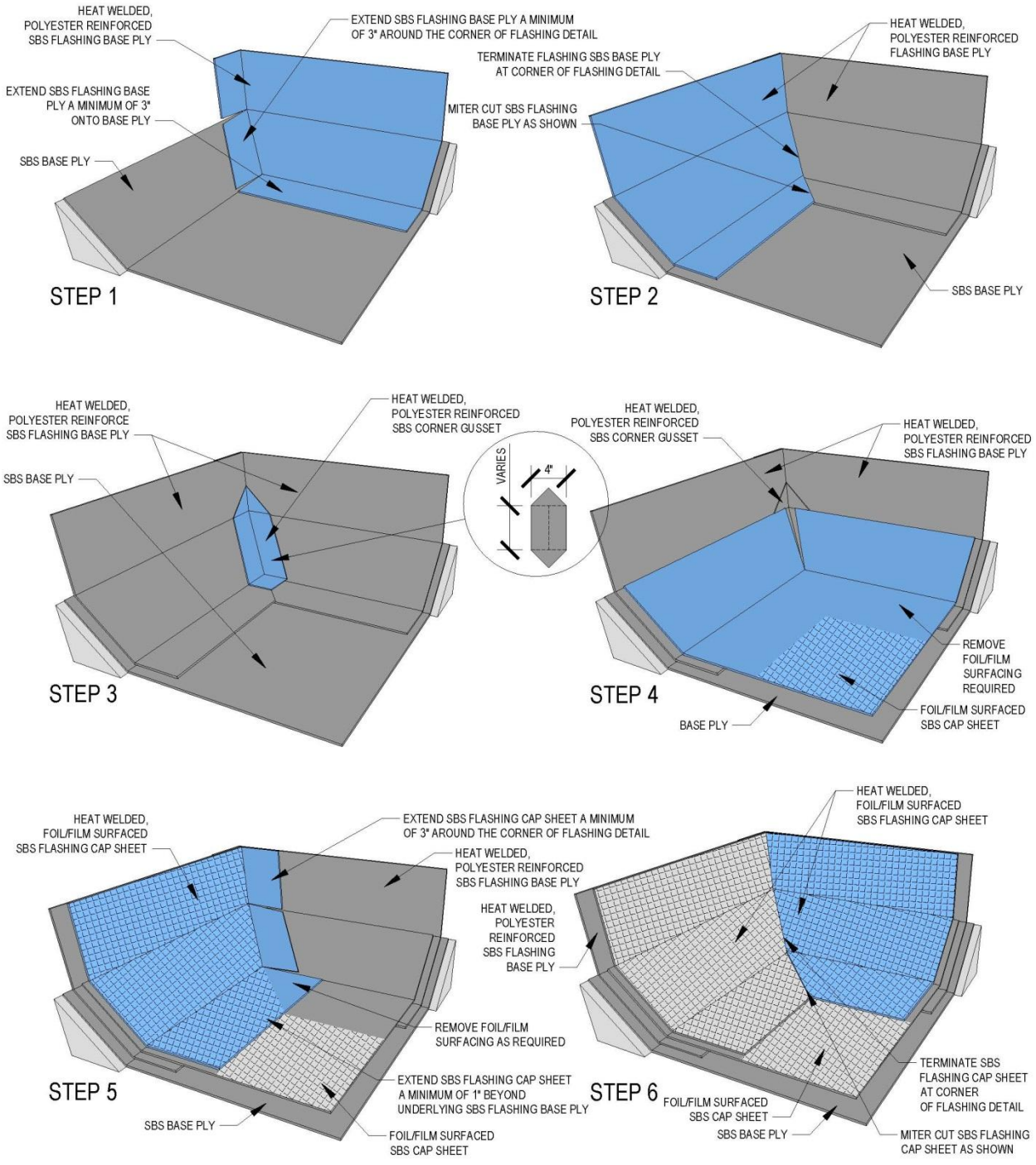


Figure 3.1.2n Fully Adhered, Heat Welded Inside Corner Flashing On Foil/Film Surfaced Cap Sheet With Cant

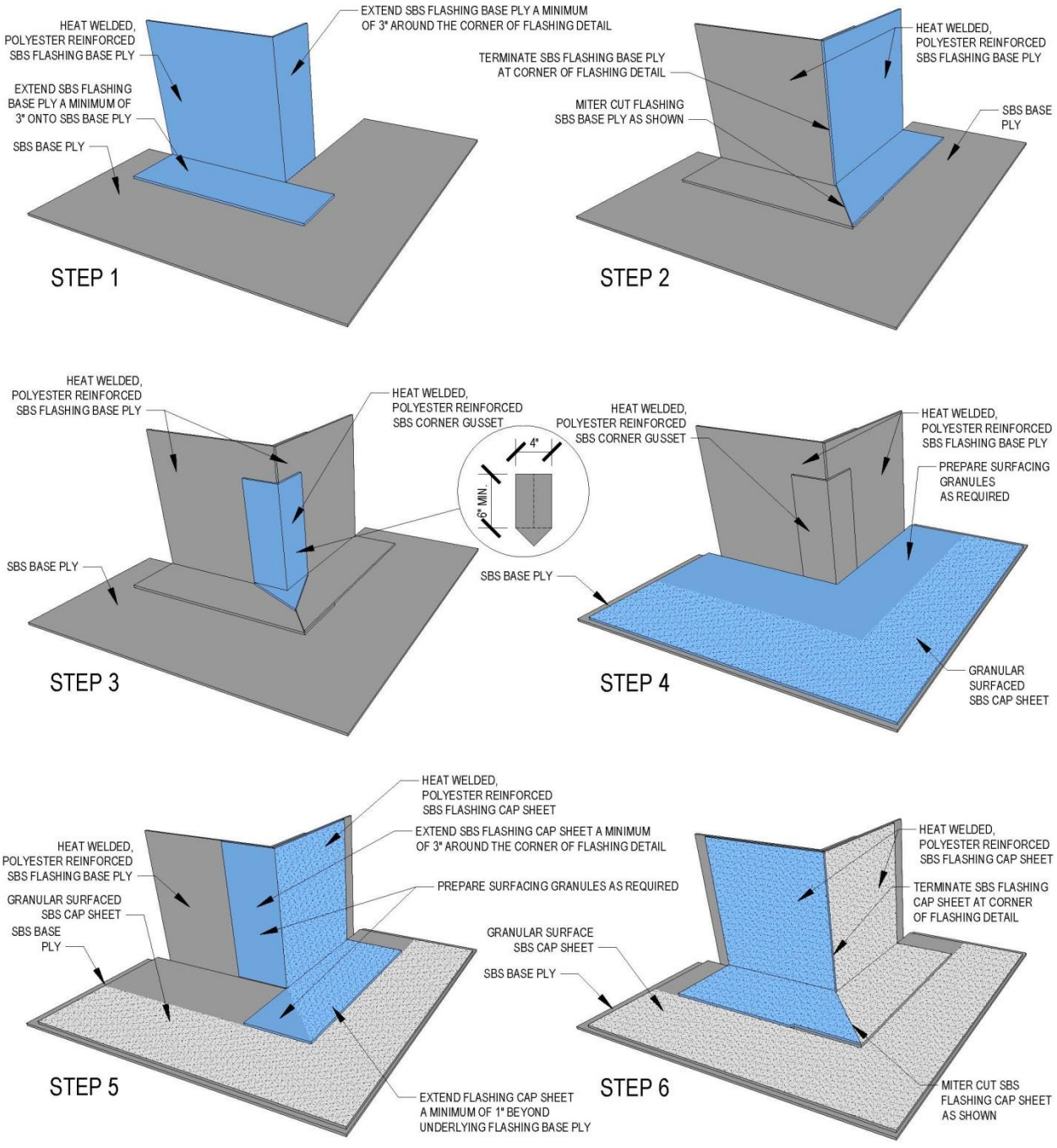


Figure 3.1.2o Fully Adhered, Heat Welded Outside Corner Flashing On Granular Surfaced Cap Sheet Without Cant

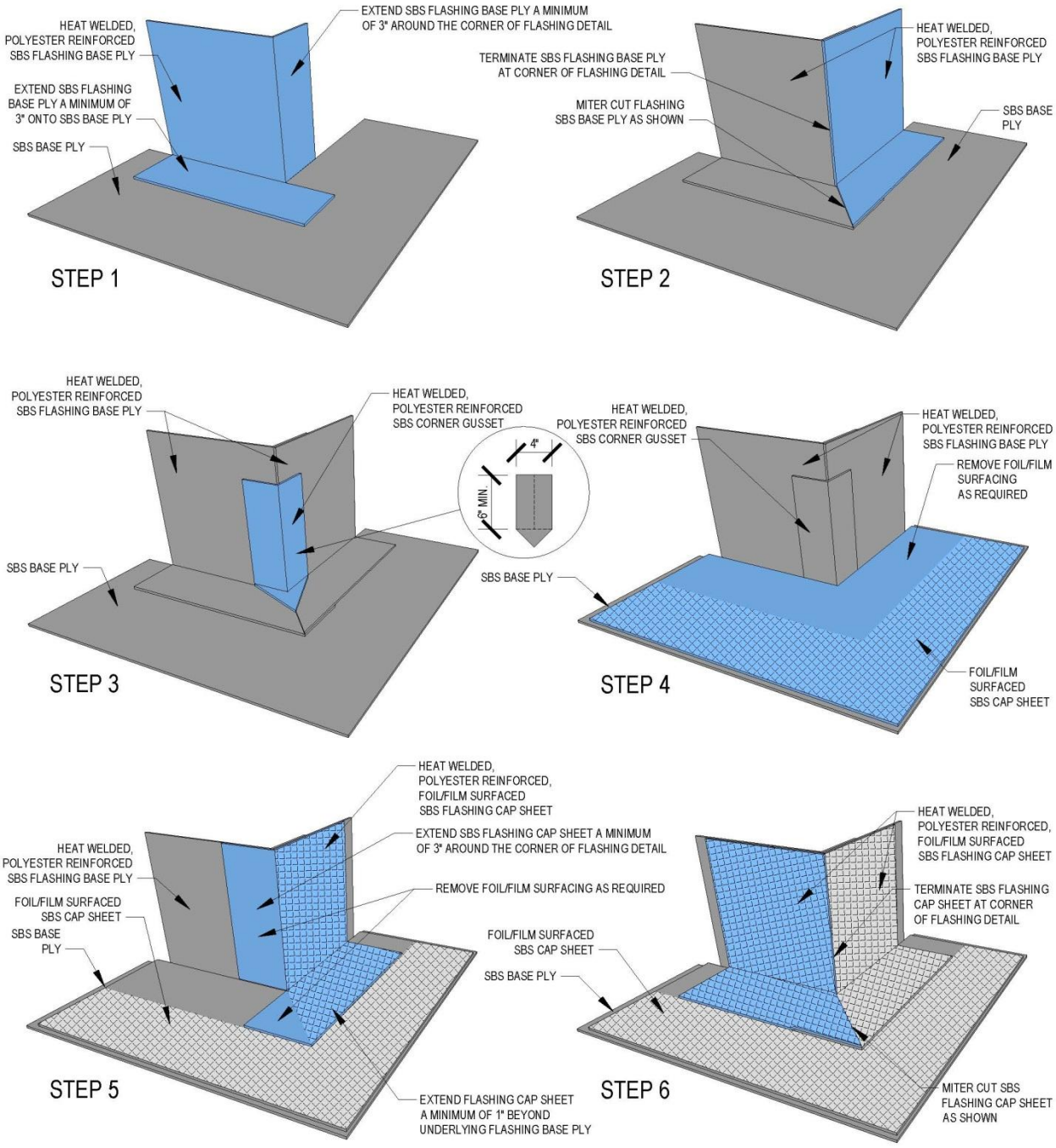


Figure 3.1.2p Fully Adhered, Heat Welded Outside Corner Flashing On Foil/Film Surfaced Cap Sheet Without Cant

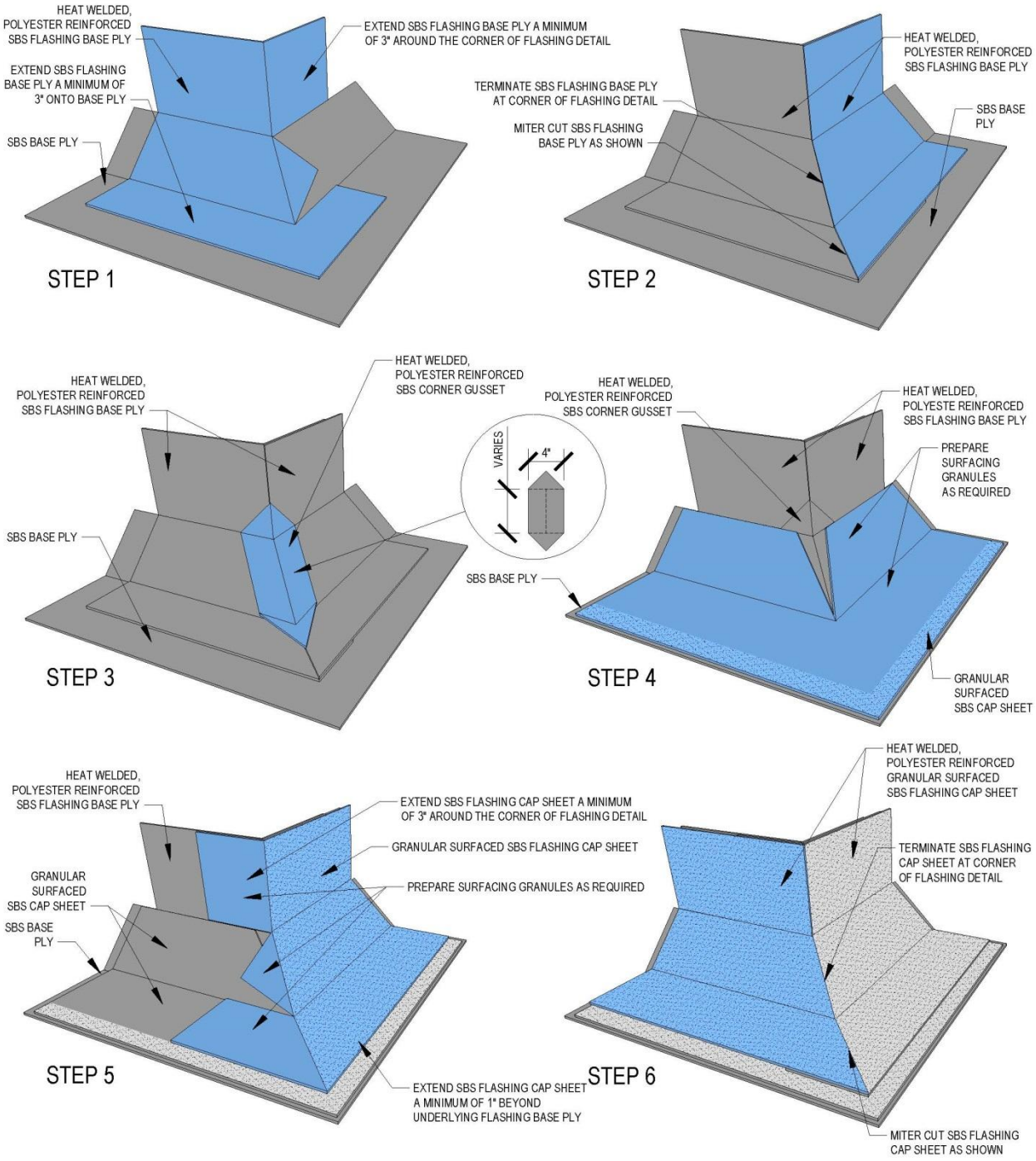


Figure 3.1.2q Fully Adhered, Heat Welded Outside Corner Flashing On Granular Surfaced Cap Sheet With Cant

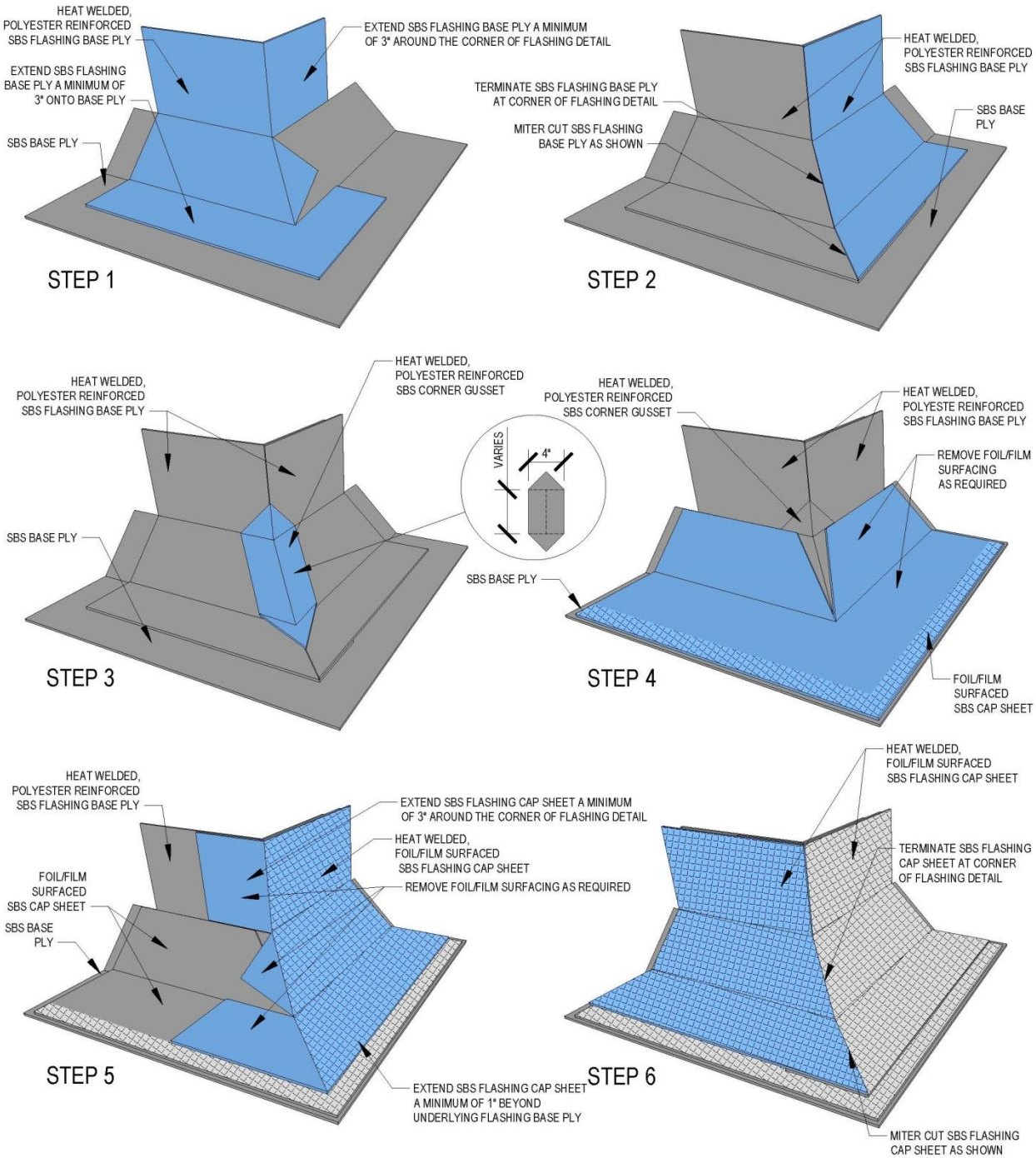


Figure 3.1.2r Fully Adhered, Heat Welded Outside Corner Flashing On Foil/Film Surfaced Cap Sheet With Cant

3.1.3 PARTIALLY ADHERED, HEAT WELDED FIELD BASE PLIES

General:

- SOPREMA® COLVENT™ partially adhered, heat welded SBS modified bitumen base ply are manufactured with ribbons of SBS modified bitumen adhesive separated by sanded venting channels on the underside of the sheet. The sanded venting channels prevent adhesion to the substrate. The un-adhered sanded venting pattern allows vapor pressure to dissipate to the atmosphere where venting channels are open at flashing terminations. Refer to Table 3.1.3a.
- Partially adhered, heat welded base plies may be installed over approved substrates as the base ply of a multi-ply membrane over approved substrates. Refer to Table 3.1.3b.
- Fully adhered SBS modified bitumen cap sheets may be installed over the partially adhered, heat welded base ply.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.
- Ensure all substrates are prepared and are acceptable to receive the heat-welded membrane.
- Ensure primer, where installed, is fully dry before beginning heat-welding operations. Refer to Table 3.1.3b.
- Where the applicator deems conditions are unsafe to use open flames, alternate membrane application methods may be considered. Acceptable alternate installation methods include mechanically fastened base sheets, ribbon-applied cold adhesive or partially adhered self-adhesive base ply options.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 6ft length of membrane from a roll.
    - Apply the specified primer to the clean, prepared substrate.
    - Heat weld the sample to the prepared substrate using the roof torch. Leave a 6in "dry tail" un-adhered.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
- Contact SOPREMA® for additional information.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll membrane sheets 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.
- Cut membrane to working lengths and widths to conform to rooftop conditions, and lay out to always work to a selvage edge.
- Cut rolls to working lengths to conform to roof conditions, and lay out to always work to a selvage edge. In order to maintain the venting pattern on the underside of the membrane, the membrane may be butted at each end. Strip-in the butted end laps using a fully-adhered heat-welded strip-in ply. If end-laps are over-lapped, the venting channels much be maintained and all T-joints sealed watertight.
- As the membrane is un-rolled, apply heat to the underside of the membrane until the plastic burn-off film melts away from the ribbons of bitumen. Direct the torch high on the roll as required to prevent lifting the sheet.
- Continuously move the roof torch side-to-side across the underside of the roll as required melt the bitumen ribbons on the underside of the sheet while not melting the sanded bitumen between ribbons.
- While unrolling and heating the membrane, ensure the melted bitumen ribbons maintain contact with the substrate as necessary to adequately adhere the ribbons to the substrate.
- Adjust the application of heat as required for varying substrates and environmental conditions.
- At membrane terminations, ensure the venting pattern is maintained as required to continue the venting pattern to adjacent flashing details.
- At all side-laps, ensure side-laps are heat-welded across the full width, and there is approximately 1/8 to 1/4 in bleed-out.
- At 6 in end-laps where T-Joints exist, cut a 45 degree dog-ear away from the selvage edge.. Refer to Table 3.1.3c for end-lap preparation.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of base ply laps.
- The cap sheet should be applied parallel with the base ply so that the cap sheet side-laps do not cross over or overlap onto the base ply side-laps.
- For lightweight insulating concrete substrates, and where specified, install one-way spun aluminum roof vents evenly spaced to cover 1,000 sq ft per vent.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation to ensure venting channels are maintained as specified.
- Each day, ensure all vented flashing details are flashed watertight to prevent moisture infiltration into the venting channels.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.1.3a Partially-Adhered, Heat-Welded Field Base Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
COLVENT™ 180 TG	Base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied field base plies. Refer to Table 3.5a.
COLVENT™ FLAM 180 TG	Base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.

Table 3.1.3b Substrates For Partially-Adhered, Heat-Welded Field Base Plies	
Substrate* **	**Preparation**
Wood	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Concrete	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Masonry	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved gypsum roof boards**	Optional prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved cement roof boards**	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved cellular lightweight insulating concrete over vented steel form deck**	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
	No primer required pending satisfactory peel results

*Refer to Section 1.1 for primer application.
** Contact SOPREMA® for additional information.
***Refer to NRCA CERTA recommendations for heat welding application methods and protection of substrates.

Table 3.1.3c Partially-Adhered, Heat-Welded Field Base Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
COLVENT™ 180 TG, COLVENT™ FLAM 180 TG	Heat welded	None

3.1.4 PARTIALLY ADHERED, HEAT WELDED FLASHING BASE PLIES

General:

- SOPREMA® COLVENT™ partially adhered, heat welded SBS modified bitumen flashing base ply are manufactured with ribbons of SBS modified bitumen adhesive separated by sanded venting channels on the underside of the sheet. The sanded venting channels prevent adhesion to the substrate. The un-adhered sanded venting pattern allows vapor pressure to dissipate to the atmosphere where venting channels are open at flashing terminations. Refer to Table 3.1.4a.
- Partially adhered, heat welded flashing base plies may be installed over approved substrates as the base ply of a multi-ply flashing system. Refer to Table 3.1.4b. Flashing substrates include concrete, masonry, metal, approved roof boards, mechanically fastened base sheets, and other SBS modified bitumen plies that are heat welded, self-adhesive applied, or cold adhesive-applied. Contact SOPREMA® for additional information.
- Fully adhered SBS modified bitumen flashing cap sheets may be installed over the partially adhered flashing base ply.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.
- Ensure all substrates are prepared and are acceptable to receive the heat-welded membrane.
- Ensure primer is fully dry before beginning heat-welding operations. Refer to Section 1.1.
- Where the applicator deems conditions are unsafe to use open flames, SOPREMA® alternate membrane application methods may be considered. Acceptable alternate installation methods include fastened base sheet options or partially adhered self-adhered flashing base ply options.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 6ft length of membrane from a roll.
    - Apply the specified primer to the clean, prepared substrate.
    - Heat weld the sample to the prepared substrate using the roof torch. Leave a 6in "dry tail" un-adhered.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll membrane onto the roof surface and allow time to relax prior to installing the membrane.

- Ensure all flashing substrates are prepared and acceptable to receive the heat-welded membrane.
- Cut rolls to working lengths to conform to flashing conditions, and lay out to always work to a selvage edge. In order to maintain the venting pattern on the underside of the flashing, the base ply may be butted at each end. Strip-in the butted end laps using a fully-adhered heat-welded strip-in ply. If end-laps are over-lapped, the venting channels much be maintained and all T-joints sealed watertight.
- As the membrane is un-rolled, apply heat to the underside of the membrane until the plastic burn-off film melts away from the ribbons of bitumen. Direct the torch high on the roll as required to prevent lifting the sheet. Continuously move the torch side-to-side across the underside of the roll as required melt the bitumen ribbons on the underside of the sheet while not melting the sanded bitumen between ribbons.
- While unrolling and heating the membrane, ensure the melted bitumen ribbons maintain contact with the substrate as necessary to adequately adhere the ribbons to the substrate.
- At all side-laps, ensure side-laps are heat-welded across the full width, and there is approximately 1/8 to 1/4 in bleed-out.
- Adjust the application of heat as required for varying substrates and environmental conditions.
- Ensure the venting pattern is maintained as required to continue the venting pattern at the flashing termination.
- 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.
- Partially adhered, heat welded flashing base plies are limited to vertical flashing applications such as walls and curbs.
- The flashing base ply at all horizontal details should be fully adhered by heat welding, cold adhesive-applied using the specified flashing cement or self-adhesive applied. Refer to Sections 3.1.2 for fully adhered heat welded flashing base plies, Section 3.2.2 for fully adhered cold adhesive-applied flashing base plies or Section 3.4.2 for fully adhered self-adhesive applied flashing base plies.
- Other partial attachment methods for vertical flashings may include the following:
    - Mechanically fastened base sheets. Refer to Section 2.1.
    - Mechanically fastened SOPRABOARD™ or approved cement roof board.
- Counterflashing, or other flashing must be installed along the top leading edge of partially adhered membrane flashing details as required to prevent moisture infiltration into the opened venting channels.
- Refer to flashing application guidelines indicated herein.
- Contact SOPREMA® for additional flashing options.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation to ensure venting channels are maintained as specified.
- Each day, ensure all vented flashing details are flashed watertight to prevent moisture infiltration into the venting channels.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.1.4a Partially-Adhered, Heat-Welded Flashing Base Plies				
Name	**Application**	**Reinforcement**	**Surfacing**	**Overlying SBS Flashing Ply Options**
COLVENT™ 180 TG	Flashing base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied flashing plies. Refer to Table 3.2.2a.
				All fully adhered, self-adhesive flashing plies. Refer to Table 3.4.2a.
COLVENT™ FLAM 180 TG	Flashing base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS flashing plies. Refer to Table 3.1.2a.

Table 3.1.4b Substrates For Partially-Adhered, Heat-Welded Field Base Plies	
Substrate* **	**Preparation**
Wood	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Concrete	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Masonry	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved gypsum roof boards**	Optional prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
Approved cement roof boards**	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*

*Refer to Section 1.1 for primer application.
** Contact SOPREMA® for additional information.
***Refer to NRCA CERTA recommendations for heat welding application methods and protection of substrates.

Table 3.1.4c Partially-Adhered, Heat-Welded Field Base Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
COLVENT™ 180 TG, COLVENT™ FLAM 180 TG	Heat welded	None

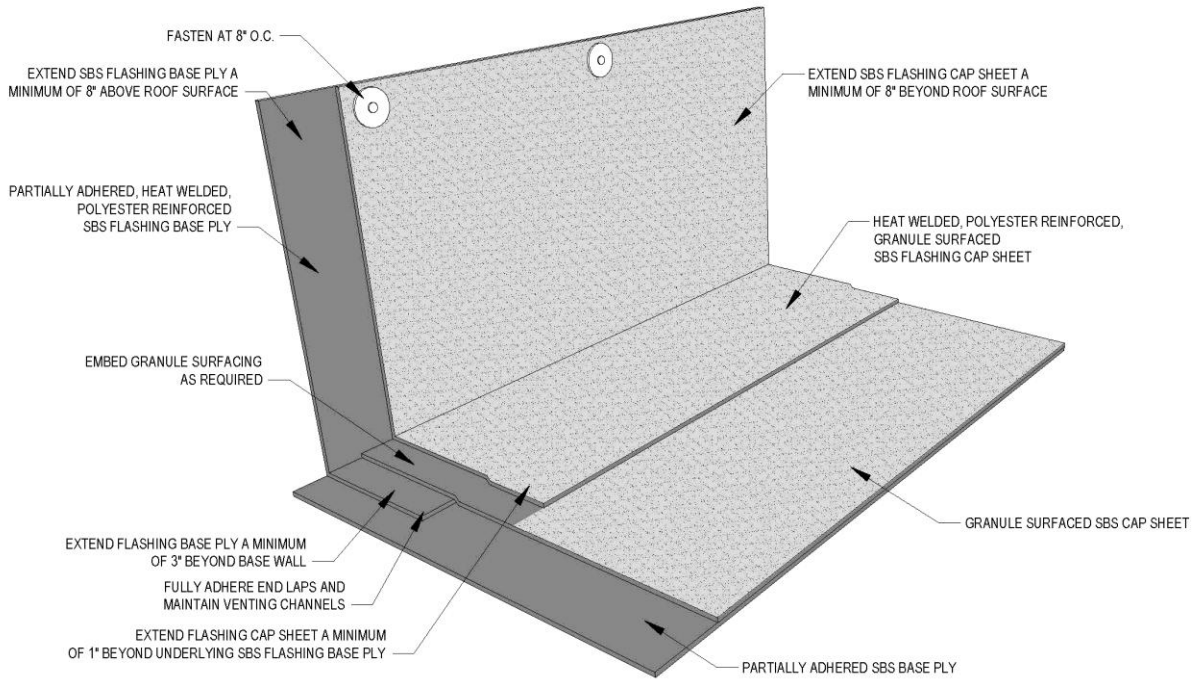


Figure 3.1.4a Partially Adhered, Heat Welded Wall/Curb Flashing Base Ply On Granular Surfaced Cap Sheet Without Cant

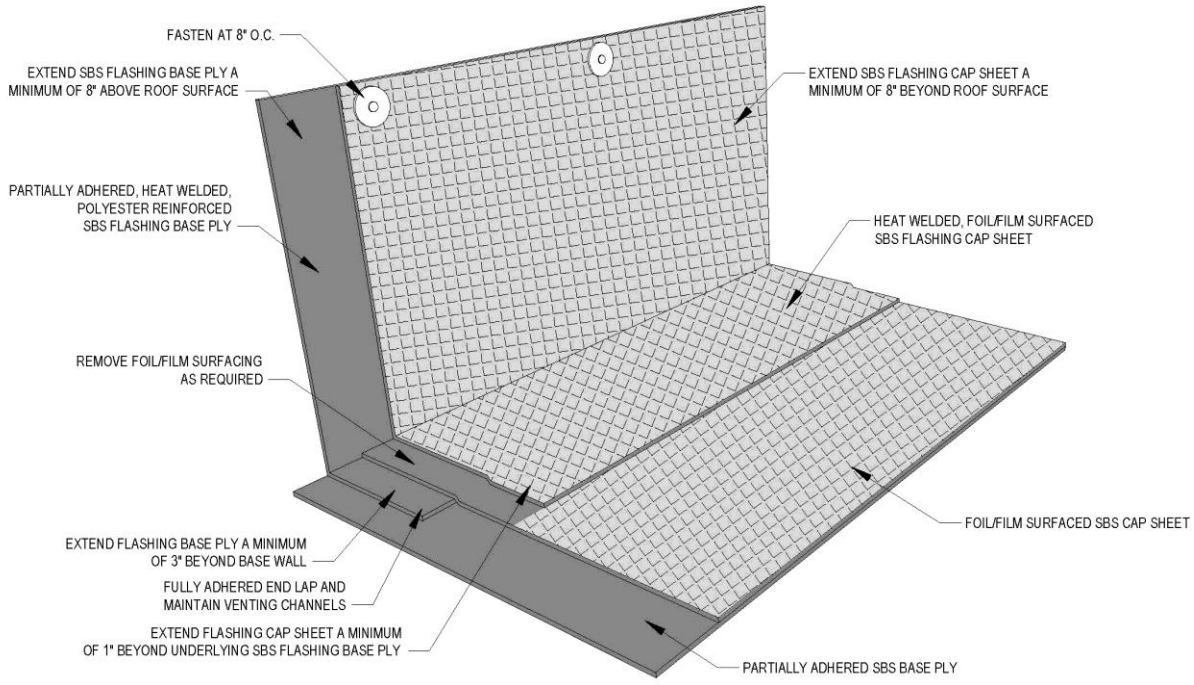


Figure 3.1.4b Partially Adhered, Heat Welded Wall/Curb Flashing Base Ply On Foil/Film Surfaced Cap Sheet Without Cant

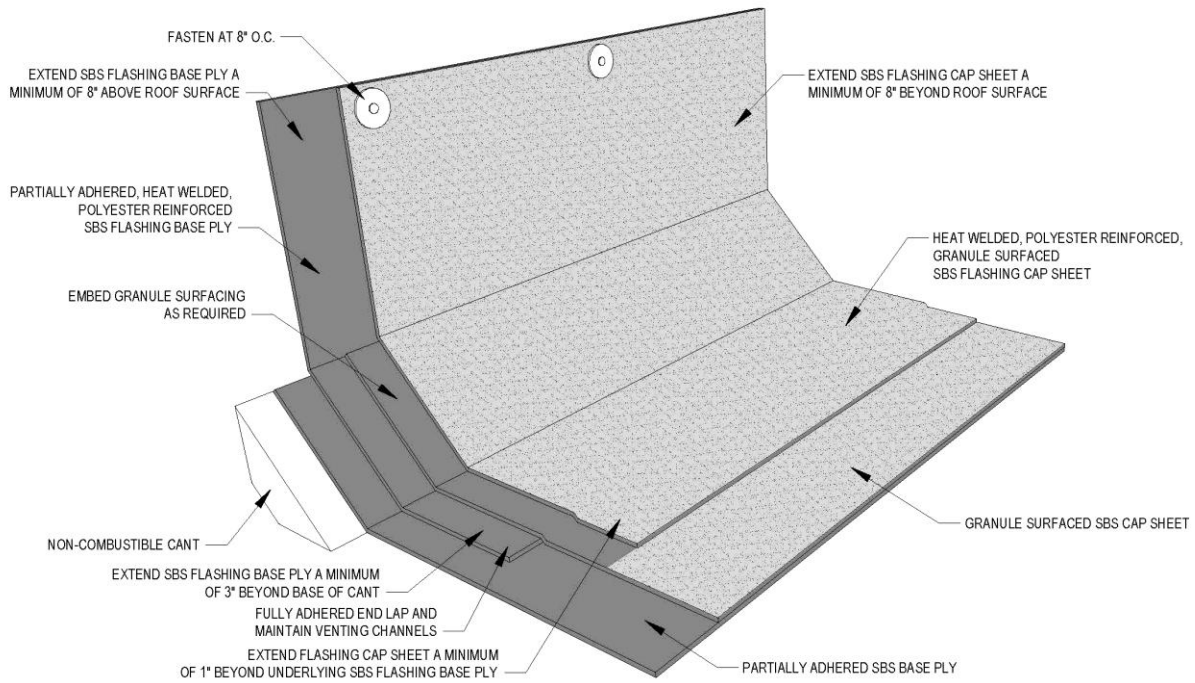


Figure 3.1.4c Partially Adhered, Heat Welded Wall/Curb Flashing Base Ply On Granular Surfaced Cap Sheet With Cant

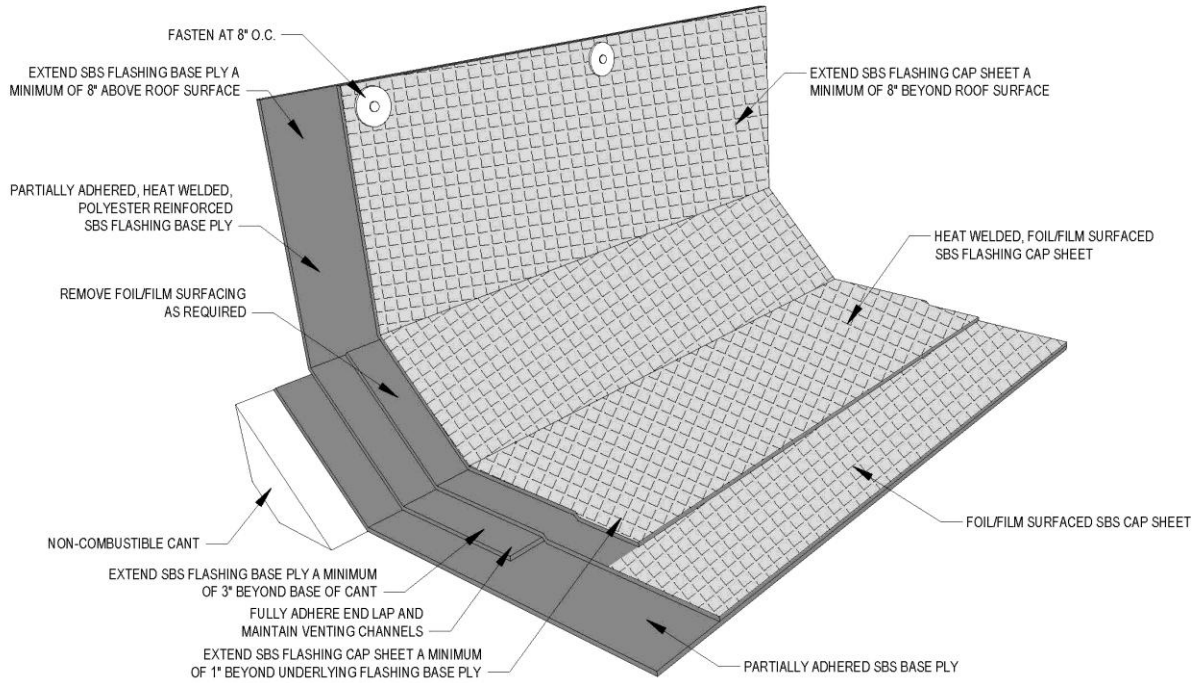


Figure 3.1.4d Partially Adhered, Heat Welded Wall/Curb Flashing Base Ply On Foil/Film Surfaced Cap Sheet With Cant

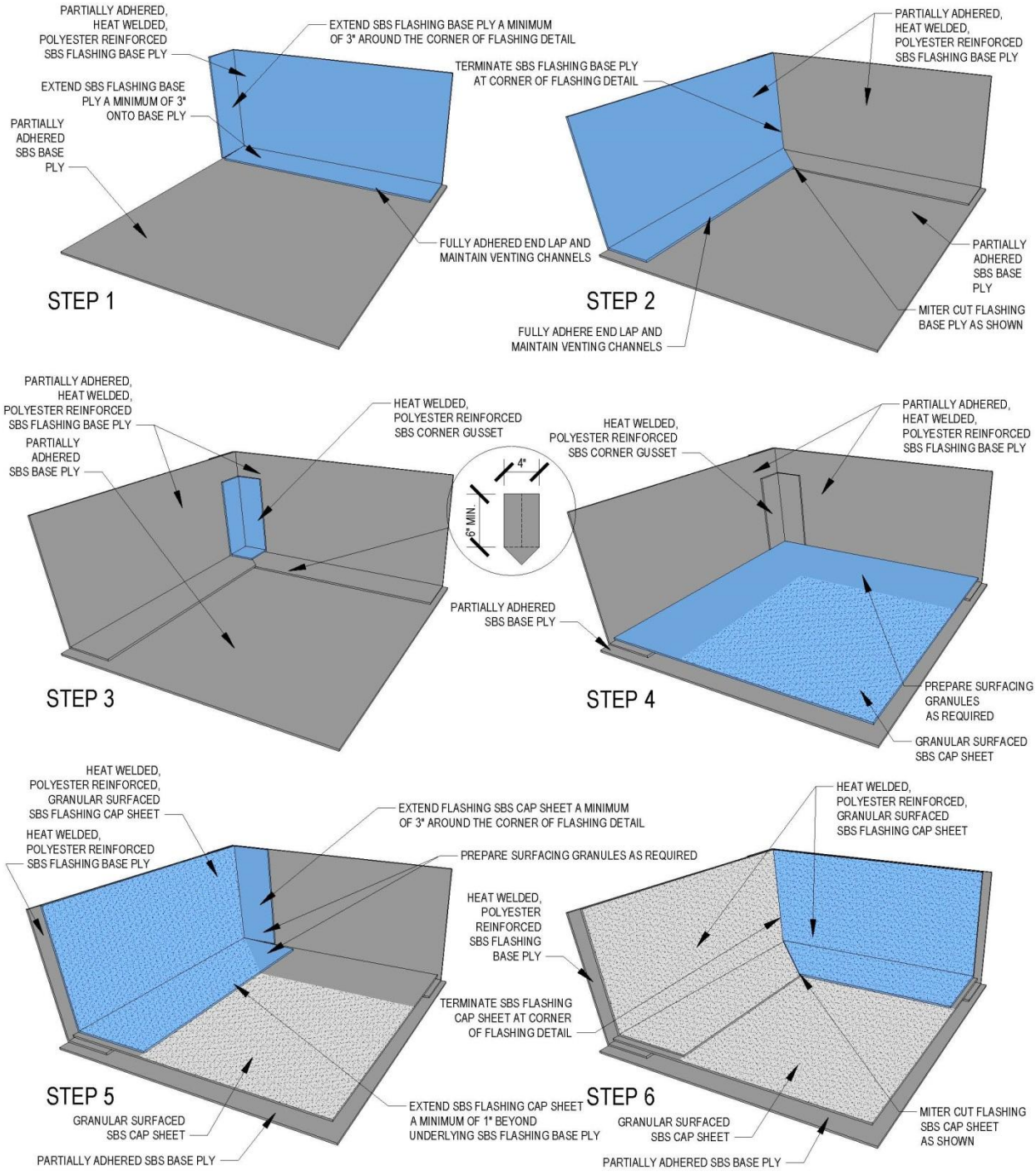


Figure 3.1.4e Partially Adhered, Heat Welded Inside Corner Flashing Base Ply On Granular Surfaced Cap Sheet Without Cant

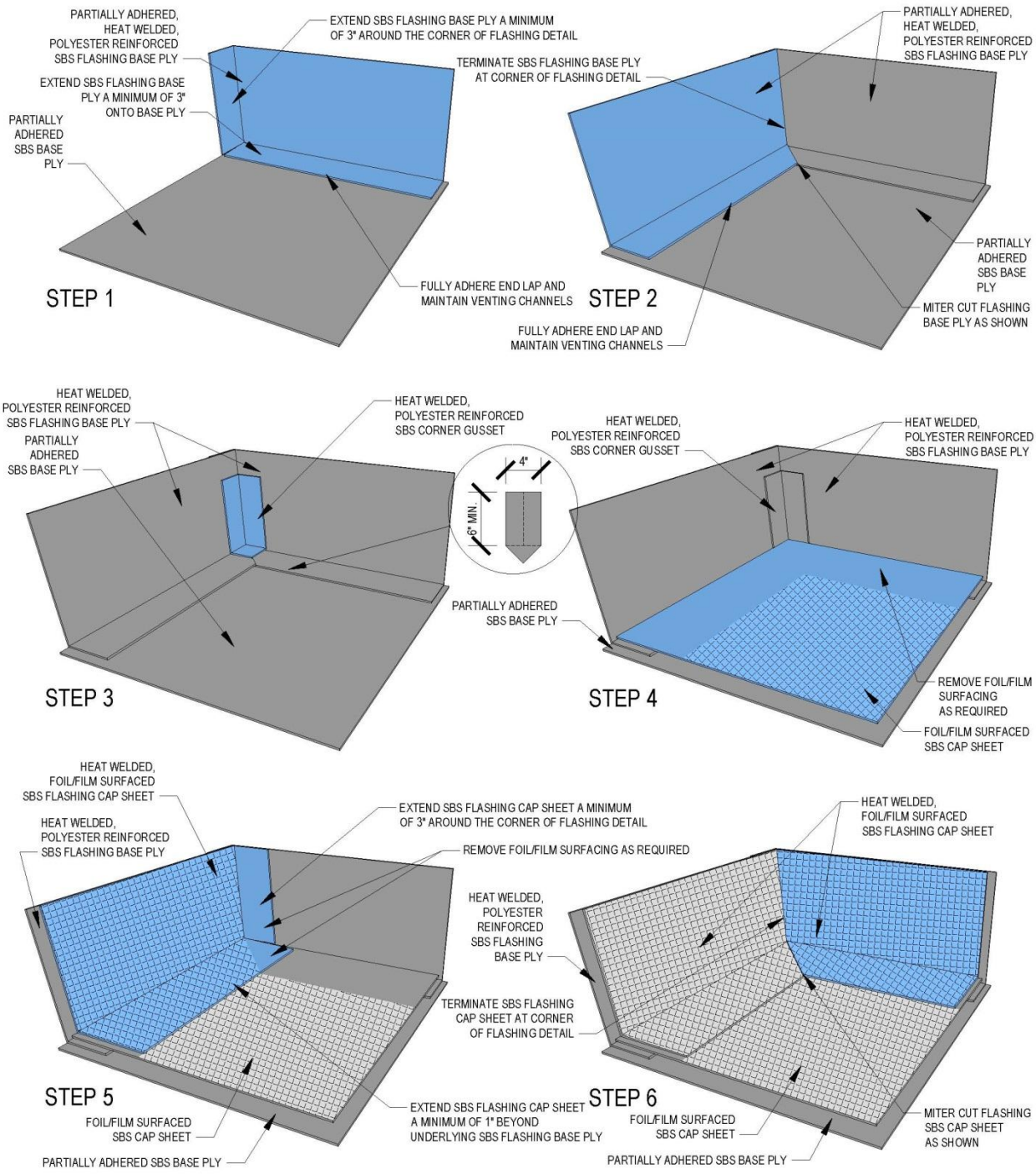


Figure 3.1.4f Partially Adhered, Heat Welded Inside Corner Flashing Base Ply On Foil/Film Surfaced Cap Sheet Without Cant

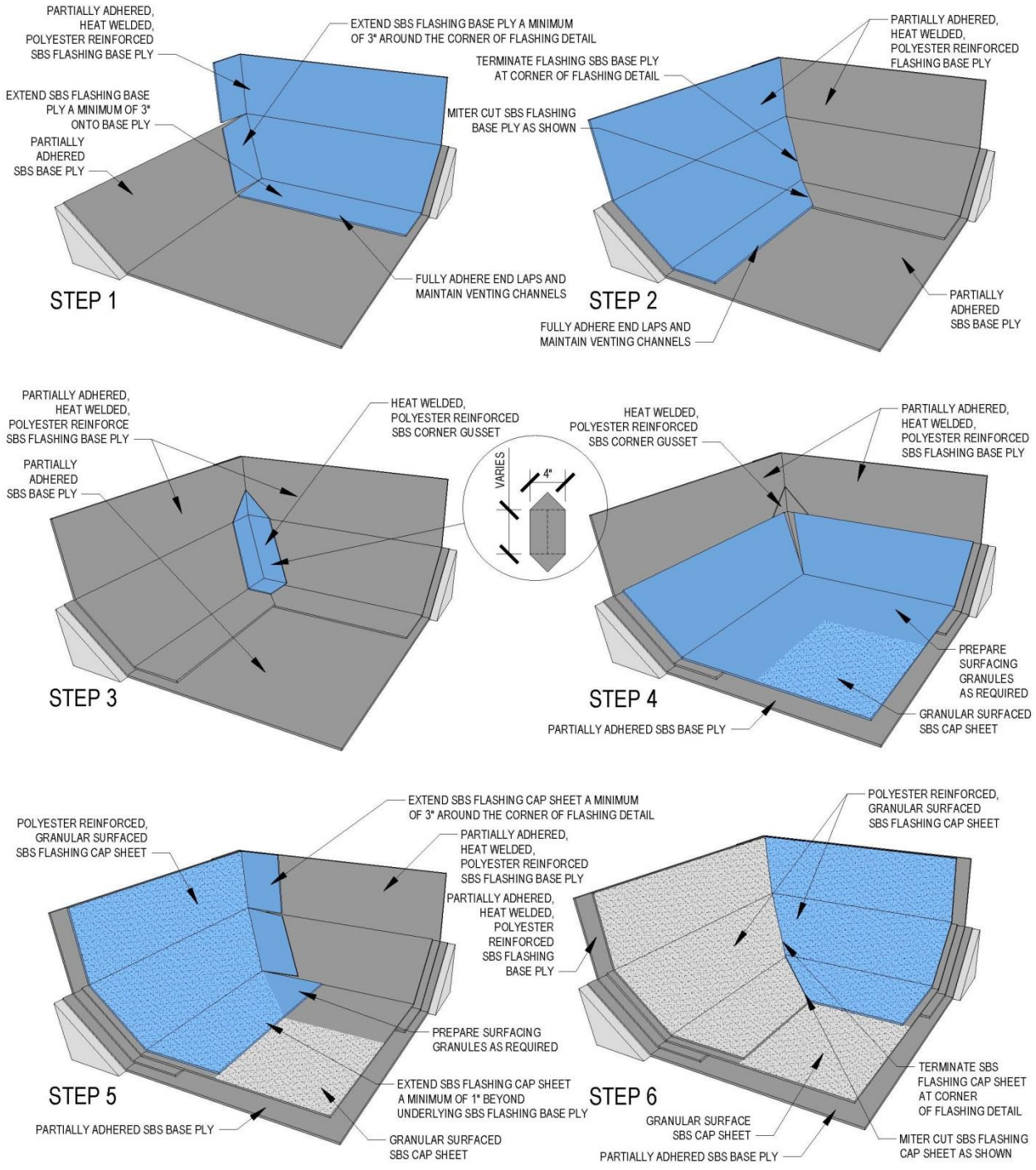


Figure 3.1.4g Partially Adhered, Heat Welded Inside Corner Flashing Base Ply On Granular Surfaced Cap Sheet With Cant

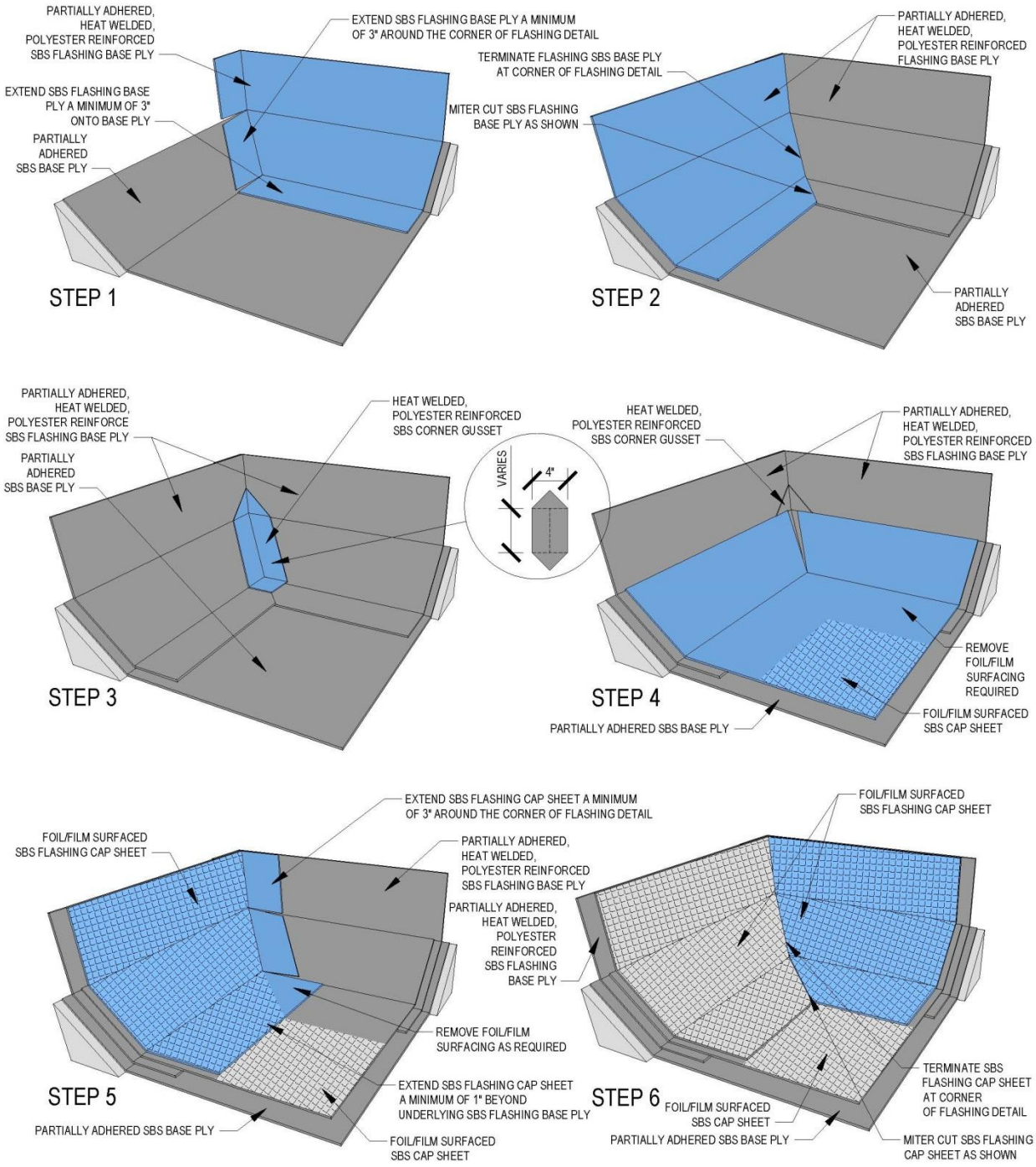


Figure 3.1.4h Partially Adhered, Heat Welded Inside Corner Flashing Base Ply On Foil/Film Surfaced Cap Sheet With Cant

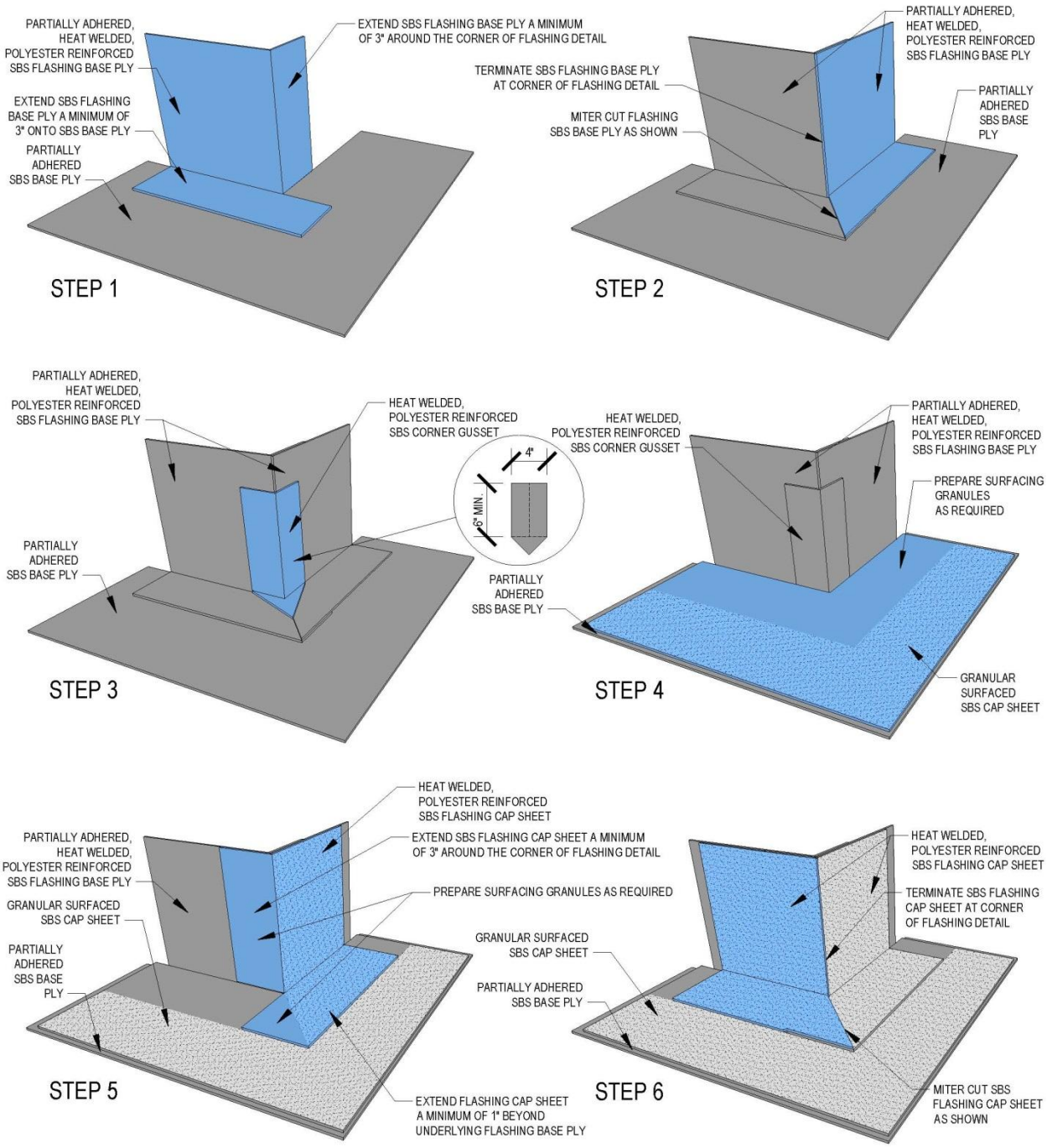


Figure 3.1.4i Partially Adhered, Heat Welded Outside Corner Flashing Base Ply On Granular Surfaced Cap Sheet Without Cant

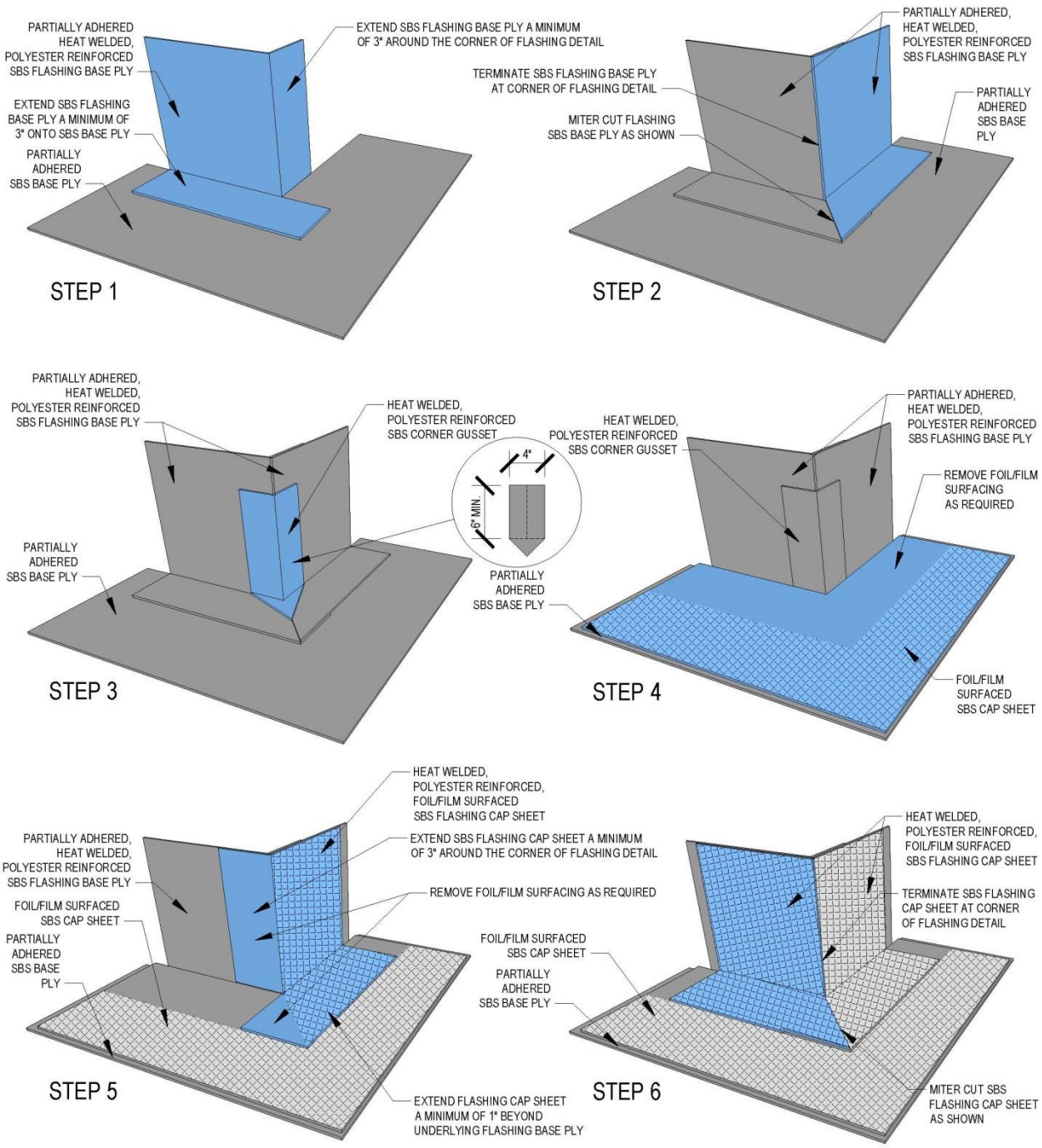


Figure 3.1.4j Partially Adhered, Heat Welded Outside Corner Flashing Base Ply On Foil/Film Surfaced Cap Sheet Without Cant

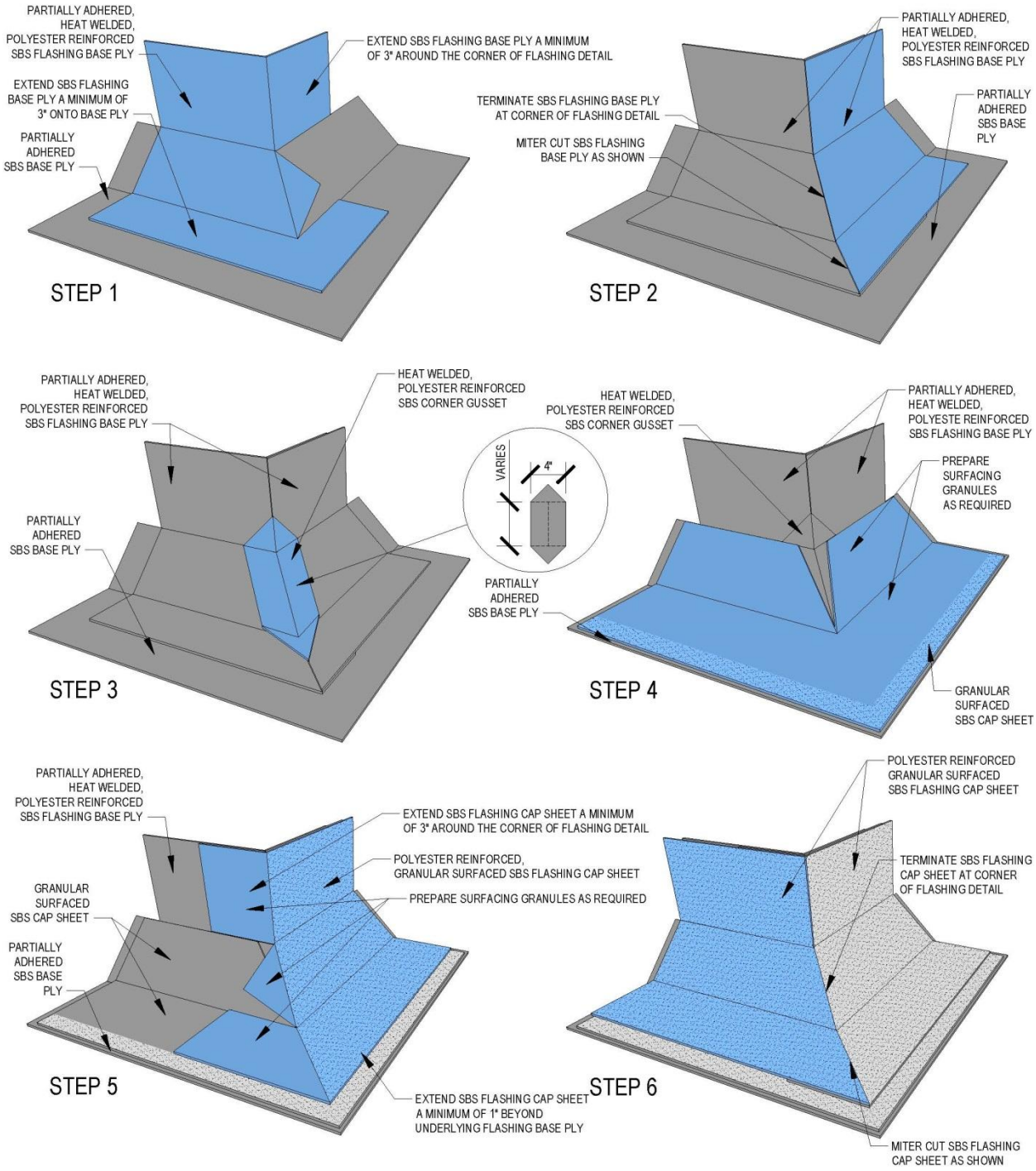


Figure 3.1.4k Partially Adhered, Heat Welded Outside Corner Flashing Base Ply On Granular Surfaced Cap Sheet With Cant

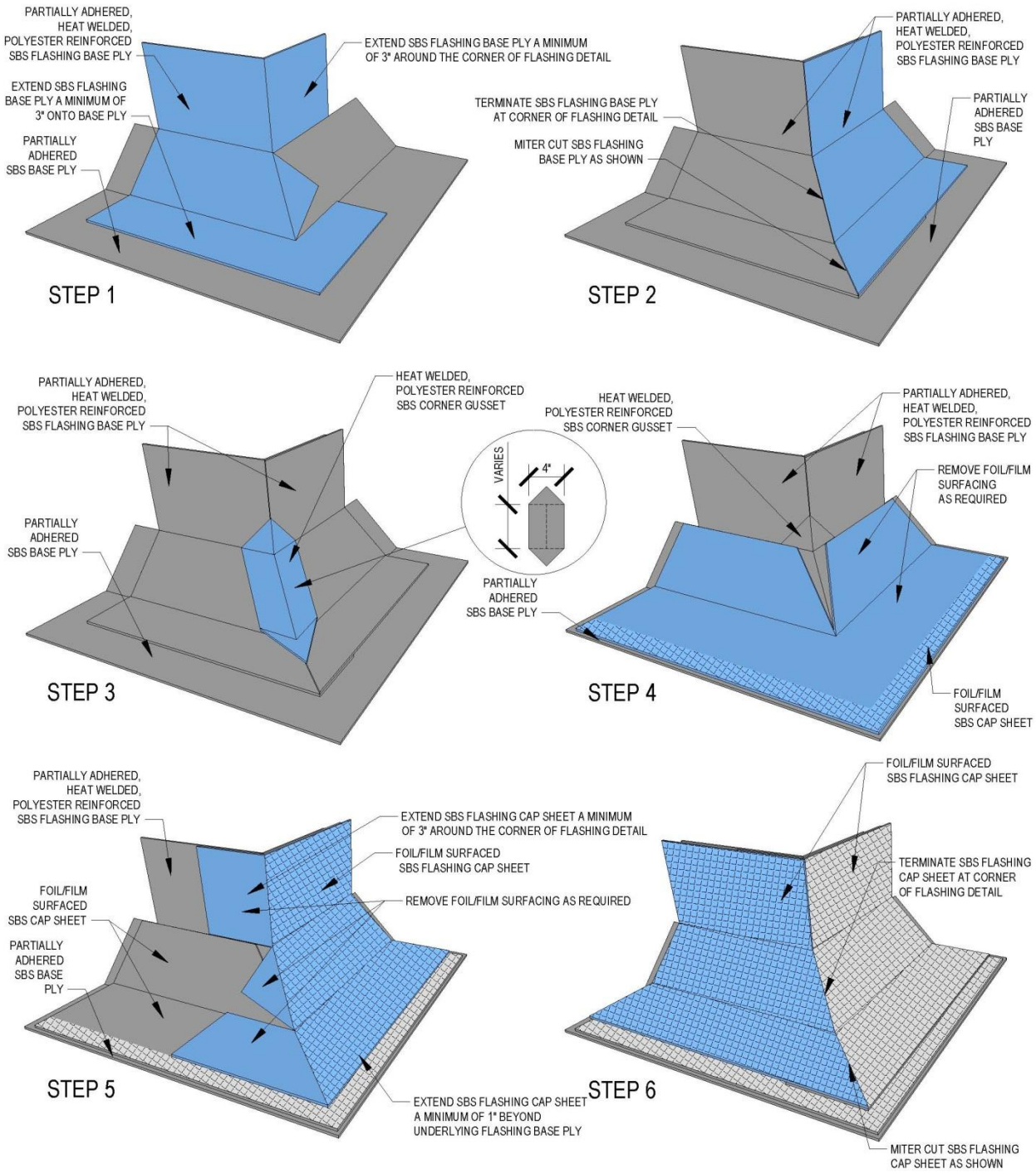


Figure 3.1.4l Partially Adhered, Heat Welded Outside Corner Flashing Base Ply On Foil/Film Surfaced Cap Sheet With Cant

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3.2 COLD ADHESIVE-APPLIED SBS MODIFIED BITUMEN MEMBRANES

3.2.1 FULLY ADHERED, COLD ADHESIVE-APPLIED FIELD PLIES

General:

- SOPREMA® cold adhesive-applied SBS modified bitumen base plies may be installed over approved insulation substrates, mechanically fastened base sheets, and installed over other SBS modified bitumen plies with sanded top surfacing that are heat welded, self-adhesive applied, hot asphalt applied or cold adhesive-applied. Cold adhesive-applied SBS modified bitumen base plies may also be installed over hot asphalt-applied built-up membranes.
- Cold adhesive-applied SBS modified bitumen cap sheets may be installed over SBS modified bitumen base plies with sanded top surfacing that are heat welded, mechanically fastened, self-adhesive applied, hot asphalt applied or cold adhesive-applied. Cold adhesive-applied cap sheets may also be installed over hot asphalt-applied built-up membranes.
- The underside of cold adhesive-applied SBS plies have a sanded surface for installation in cold adhesives. Top surfacings vary. Refer to Table 3.2.1a.
- SOPREMA® cold adhesives include the following:
    - COLPLY™ ADHESIVE: Low VOC (< 250 g/L) polymer-modified membrane adhesive.
    - COLPLY™ EF ADHESIVE: Non-toxic, low-odor, solvent free, polymeric membrane adhesive
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply adhesive and membrane plies.
    - Ice and frost may be difficult to detect on concrete, lightweight insulating concrete and other substrates. During extended periods of cold weather when the substrate is exposed to freezing conditions, the substrate should be heated as necessary to eliminate ice crystals and ensure the substrate is dry. Examine adhesion closely when conditions are below freezing.
    - The adhesive and membrane temperature should be 70°F (21°C) or more 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 should be stored in heated areas. Drums and 5 gallon pails exposed to cold temperature on the roof should be provided with heaters when necessary to ensure the minimum application temperature is maintained.
    - Store rolls in a heated area to maintain the rolls at 70°F (21°C) during cold weather.
- Priming substrates is optional when COLPLY™ ADHESIVE is used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates. Refer to Section 1.1.
- Primer is not recommended for COLPLY™ EF ADHESIVE. Refer to Section 1.1.

- Ensure all substrates are clean, free of ice or frost, dry and prepared to receive the specified adhesive and membrane plies.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer, where required, to the clean, prepared substrate.
    - Adhere an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Allow sufficient time for the samples to cure.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lineal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away "clean" from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- Remove all roll packaging tape prior to installation.

Application:

- Before beginning the installation, 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 unrolled into the adhesive while ensuring the specified side and end-laps are maintained.
- Adhesive application:
    - COLPLY™ ADHESIVE may be applied using a 3/16 – 3/8 in notched squeegee, brush or spray-applied using approved equipment.
    - COLPLY™ EF ADHESIVE may be applied using a 3/16 – 3/8 in notched squeegee or brush. COLPLY™ EF ADHESIVE is not spray-applied.
    - Apply adhesive to clean, dry and prepared compatible substrates as required to ensure full adhesion.
    - Apply adhesive at 1-1/2 to 2-1/2 gallons per square.
    - Apply adhesive at 3 to 4 gallons per square or more over absorptive substrates and granule surfaces. Adjust the application rate based upon conditions to ensure full coverage.
- 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.
- 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.
- 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 and prevent adhesive displacement or damage during application.
- Where laps are adhered using membrane adhesive, apply sufficient adhesive coverage to ensure 1/8 to 1/4 in of adhesive bleed-out at all laps.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of base ply laps.
- At 6 in end-laps, cut a 45 degree dog-ear away from the selvage edge for all T-joints. Refer to Table 3.2.1c for end-lap preparation.
- 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" in order to hot-air weld or torch all laps watertight.
- The cap sheet should be applied parallel with the base ply so that the cap sheet side-laps do not cross over or overlap onto the base ply side-laps.
- For granule surfaced cap sheet end-laps, prepare granules as required. Refer to Table 3.2.1c. Immediately broadcast matching granules into adhesive or bitumen bleed-out at all side and end-laps.
- For ELASTOPHENE® HS FR GR cap sheets, seal all cut edges and edges at end-laps with SOPRAMASTIC™ SBS ELASTIC CEMENT.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation.
- When applying additional materials over new cold adhesive-applied materials, ensure the adhesive has sufficiently cured to allow the application of the subsequent materials. Adhesive should be cured sufficiently to prevent damage from construction-related traffic or the application of overburden.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.2.1a Fully Adhered, Cold Adhesive-Applied Field Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
ELASTOPHENE® SANDED 2.2, ELASTOPHENE® SANDED 3.0, ELASTOPHENE® HR SANDED 2.2, ELASTOPHENE® HR SANDED 3.0	Base ply(s)	Glass fiber	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied field base plies. Refer to Table 3.5a.
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Base ply(s)	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied field base plies. Refer to Table 3.5a.
ELASTOPHENE® HS SANDED	Base ply(s)	Composite	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied field base plies. Refer to Table 3.5a.
ELASTOPHENE® PS 2.2, ELASTOPHENE® PS 3.0	Base ply(s)	Glass fiber	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Base ply(s)	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.

Name	Application	Reinforcement	Top Surfacing	Overlying SBS Field Ply Options
ELASTOPHENE® LS FR GR, ELASTOPHENE® FR GR, ELASTOPHENE® FR+ GR	Cap sheet	Glass fiber	Mineral granule	None
ELASTOPHENE® HR FR GR	Cap sheet	Glass grid	Mineral granule	None
ELASTOPHENE® HS FR GR	Cap sheet	Composite	Mineral granule	None
SOPRALENE® 180 FR GR, SOPRALENE® 180 FR+ GR, SOPRALENE® 250 FR GR, SOPRALENE® 250 FR+ GR	Cap sheet	Non-woven polyester	Mineral granule	None
SOPRALAST™ 50 TV ALU SANDED	Cap Sheet	Glass grid	Aluminum foil-clad	None

Table 3.2.1b Substrate Preparation, Fully Adhered, Cold Adhesive-Applied Field Plies			
SBS Membrane Ply	**Adhesive**	**Substrate**	**Primer**
All cold adhesive-applied SBS field base plies. Refer to Table 3.2.1a.	COLPLY™ ADHESIVE	Concrete	Optional prime with ELASTOCOL™ 500*or ELASTOCOL™ 350*
		Metal	
		Masonry	
		Approved gypsum roof boards	
		Approved cement roof boards	
		Wood	
		SOPRABOARD™	None
		All mechanically fastened base sheets with sanded top surfacing. Refer to Table 2.1a.	
		All hot asphalt-applied base sheets and BUR ply sheets. Refer to Table 2.2a.	
		All SBS base field plies with sanded top surfacing.	
	COLPLY™ EF ADHESIVE	Concrete	None
		Metal	
		Masonry	
		Approved gypsum roof boards	
		Approved cement roof boards	
		Wood	
		SOPRABOARD™	
		All SBS field base plies with sanded top surfacing.	
All cold adhesive-applied SBS field cap sheets with granule surfacing. Refer to Table 3.2.1a.	COLPLY™ ADHESIVE, COLPLY™ EF ADHESIVE	All SBS base plies with sanded top surfacing.	None
SOPRALAST™ 50 TV ALU SANDED	COLPLY™ EF ADHESIVE	All SBS field base plies with sanded top surfacing.	None

* Refer to Section 1.1 for primer application.

Table 3.2.1c Fully Adhered, Cold Adhesive-Applied Field Plies End-Lap Preparation		
SBS Membrane Ply	**End Lap Application Method**	**Preparation**
ELASTOPHENE® SANDED 2.2, ELASTOPHENE® SANDED 3.0, ELASTOPHENE® HR SANDED 2.2, ELASTOPHENE® HR SANDED 3.0,	Heat welded	None
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED, ELASTOPHENE® HS SANDED	Adhered with COLPLY™ or COLPLY™ EF	None
ELASTOPHENE® PS 2.2, ELASTOPHENE® PS 3.0, SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Heat welded	None
ELASTOPHENE® LS FR GR, ELASTOPHENE® FR GR, ELASTOPHENE® FR+ GR,	Heat welded	Embed surfacing granules**
ELASTOPHENE® HR FR GR, ELASTOPHENE® HS FR GR, SOPRALENE® 180 FR GR,	Adhered with COLPLY™	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
SOPRALENE® 180 FR+ GR, SOPRALENE® 250 FR GR, SOPRALENE® 250 FR+ GR	Adhered with COLPLY™ EF	None
SOPRALAST™ 50 TV ALU SANDED	Adhered with COLPLY™ EF	Remove foil/film surfacing***

* Refer to Section 1.1 for priming guidelines.
**Refer to Section 5.3.1.
***Refer to Section 5.3.2.

3.2.2 FULLY ADHERED, COLD ADHESIVE-APPLIED FLASHING PLIES

General:

- SOPREMA® SBS modified bitumen flashing base plies may be installed using SOPREMA® cold-applied flashing cement over approved substrates.
- SBS modified bitumen flashing cap sheets may be installed using flashing cement over SBS modified bitumen flashing base plies that are heat welded, mechanically fastened, self-adhesive applied or applied using flashing cement.
- Flashing substrates include concrete, masonry, metal, wood, approved roof boards, mechanically fastened base sheets, and other SBS modified bitumen plies that are heat welded or self-adhesive applied. SBS modified bitumen substrates must have a sanded top surface. Contact SOPREMA® for additional information.
- The underside of SBS plies has a sanded surface for installation using flashing cement. The top surfacing varies. Refer to Table 3.2.2.a.
- SOPREMA® flashing cements include the following:
    - COLPLY™ FLASHING CEMENT: Low VOC (< 250 g/L) polymer-modified flashing adhesive.
    - COLPLY™ EF FLASHING CEMENT: Non-toxic, low-odor, solvent free, polymeric flashing adhesive
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to SOPREMA® PDS and SDS for additional product information.
- Refer to detail drawings and product data sheets for more information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and flashing applications.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during flashing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply flashing cement and flashing plies.
    - Ice and frost may be difficult to detect on concrete, lightweight insulating concrete and other substrates. During extended periods of cold weather when the substrate is exposed to freezing conditions, the substrate should be heated as necessary to eliminate ice crystals and ensure the substrate is dry. Examine adhesion closely when conditions are below freezing.
    - The flashing cement and flashing ply temperature should be 70°F (21°C) or more at the point of application.
    - To ensure the flashing cement is applied at 70°F (21°C) during cold weather, pails should be stored in heated areas. Pails exposed to cold temperature on the roof should be provided with heaters when necessary to ensure the minimum application temperature is maintained.
- Priming substrates is optional for COLPLY™ FLASHING CEMENT. Primer may be applied to reduce flashing cement consumption rates for some absorptive substrates. Refer to Section 1.1.
- Primer is not recommended for COLPLY™ EF FLASHING CEMENT. Refer to Section 1.1.
- Ensure all substrates are clean, free of ice or frost, dry and prepared to receive the specified flashing cement and flashing plies.

- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer, where required, to the clean, prepared substrate.
    - Adhere an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Allow sufficient time for the samples to cure.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away “clean” from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll flashing sheets onto the roof surface and allow time to relax prior to installation.
- 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 in order to always install flashings to the side-lap line or selvage edge line.
- Install cants at all vertical roof transitions.
- Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.
    - Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, then extend the base ply up to the top of the cant at vertical terminations, transitions and penetrations.
    - Install the flashing base ply starting at the top leading edge of the vertical substrate, then down over the cant and onto the horizontal surface of the roof a minimum of 3 in 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.
    - Install the roof membrane cap sheet onto the horizontal field of the roof over the flashing base ply, then up to the vertical roof termination, transition or penetration, and up to the top of the cant.

    - Using a chalk line, mark a line on the membrane cap sheet a minimum of 1 in beyond the underlying flashing base ply. Prepare the cap sheet surfacing as required. Refer to Table 3.2.2c.
    - Install the flashing cap sheet starting at the top leading edge on the vertical flashing substrate, down over the cant and onto the roof surface a minimum of 1 in beyond the underlying flashing base ply.
    - Install the flashing cap sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions and penetrations. Refer to Figures 3.2.2a through 3.2.1b and 3.2.2i through 3.2.2l.
- Apply flashing cement at 2.0 – 2.5 gallons per square using a ¼ inch notched trowel. Apply flashing cement to the flashing substrate, and apply flashing cement to the underside of the flashing ply as required to ensure full adhesion. Application rates vary based on substrate and environmental conditions.
- During the membrane and flashing installation, ensure all plies are completely adhered into place with no bridging, voids or openings. Ensure bleed-out is present at all flashing side-laps and end-laps.
- Use a roller and press-in the flashing plies during installation to ensure plies are in full contact with the substrate below.
- Where sufficient bleed-out is not present, apply SOPRAMASTIC™ SP1 or SOPRAMASTIC™ ALU sealant 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 the edge of flashing plies watertight.
- Fasten the top leading edge of vertical flashings 8 in on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates. Seal fastener penetrations watertight using SOPRAMASTIC™ SP1 sealant or SOPRAMASTIC™ SBS ELASTIC CEMENT mastic.
- For granule surfaced flashing cap sheet end-laps, prepare granules as required. Refer to Table 3.2.2c. Immediately broadcast matching granules into adhesive or bitumen bleed-out at all side and end-laps.
- For SOPRALAST™ 50 TV ALU SANDED flashing cap sheet end-laps, adhesive or bitumen bleed-out may be treated using SOPRALASTIC 124 ALU.
- ALSAN® RS and ALSAN® FLASHING liquid-applied, reinforced flashing systems may be installed as an alternate to SBS flashing membranes. Refer to Section 4, *LIQUID APPLIED FLASHINGS*.
- Contact SOPREMA® for other flashing options.

Inspection:

- Each day, physically inspect all side and end-laps, and ensure the flashings are 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.2.2a Fully Adhered, Cold Adhesive-Applied Flashing Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Flashing Ply Options**
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Flashing base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied flashing plies. Refer to Table 3.2.2a. All fully adhered, self-adhesive flashing plies. Refer to Table 3.4.2a.
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Flashing base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS flashing plies. Refer to Table 3.1.2a.
SOPRALENE® 180 FR GR, SOPRALENE® 180 FR+ GR, SOPRALENE® 250 FR GR, SOPRALENE® 250 FR+ GR	Flashing cap sheet	Non-woven polyester	Mineral granule	None
SOPRALAST™ 50 TV ALU SANDED	Flashing cap sheet	Glass grid	Aluminum foil-clad	None

Table 3.2.2b Substrate Preparation, Fully Adhered, Cold Adhesive-Applied Flashing Plies			
SBS Flashing Ply	**Adhesive**	**Substrate**	**Primer**
All fully adhered, cold adhesive-applied SBS flashing base plies. Refer to Table 3.2.2a.	COLPLY™ FLASHING CEMENT	Concrete	Optional prime with ELASTOCOL™ 500*or ELASTOCOL™ 350*
		Metal	
		Masonry	
		Approved gypsum roof boards	
		Approved cement roof boards	
		Wood	
		SOPRABOARD™	None
		All mechanically fastened base sheets with sanded top surfacing. Refer to Table 2.1a.	
		All hot asphalt-applied base sheets and BUR ply sheets. Refer to Table 2.2a.	
		All SBS flashing base plies with sanded top surfacing.	
	COLPLY™ EF FLASHING CEMENT	Concrete	None
		Metal	
		Masonry	
		Approved gypsum roof boards	
		Approved cement roof boards	
		Wood	
		SOPRABOARD™	
		All mechanically fastened base sheets with sanded top surfacing. Refer to Table 2.1a.	
		All SBS flashing base plies with sanded top surfacing.	
All fully adhered, cold adhesive-applied SBS flashing cap sheets with granule surfacing. Refer to Table 3.2.2a.	COLPLY™ FLASHING CEMENT, COLPLY™ EF FLASHING CEMENT	All SBS flashing base plies with sanded top surfacing.	None
SOPRALAST™ 50 TV ALU SANDED	COLPLY™ EF FLASHING CEMENT	All SBS flashing base plies with sanded top surfacing.	None

* Refer to Section 1.1 for primer application.

Table 3.2.2c Fully Adhered, Cold Adhesive-Applied Flashing Plies End-Lap Preparation		
Flashing Ply	**End Lap Application Method**	**Preparation**
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Heat welded	None
	Adhered with COLPLY™ FLASHING CEMENT, or COLPLY™ EF FLASHING CEMENT	None
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Heat welded	None
SOPRALENE® 180 FR GR, SOPRALENE® 180 FR+ GR, SOPRALENE® 250 FR GR, SOPRALENE® 250 FR+ GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™ FLASHING CEMENT	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF FLASHING CEMENT	None
SOPRALAST™ 50 TV ALU SANDED	Adhered with COLPLY™ EF FLASHING CEMENT	Remove foil/film surfacing***

* Refer to Section 1.1 for priming guidelines.
**Refer to Section 5.3.1.
***Refer to Section 5.3.2.

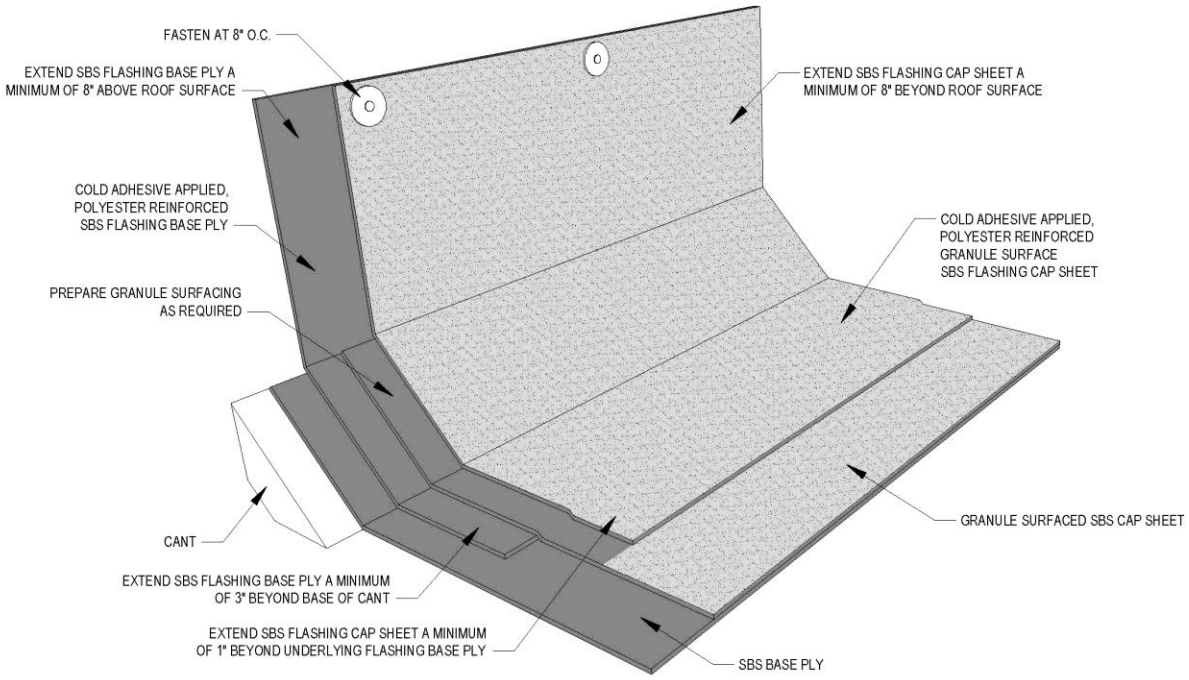


Figure 3.2.2a Fully Adhered, Cold Adhesive-Applied Wall/Curb Flashing on Granule Surfaced Cap Sheet

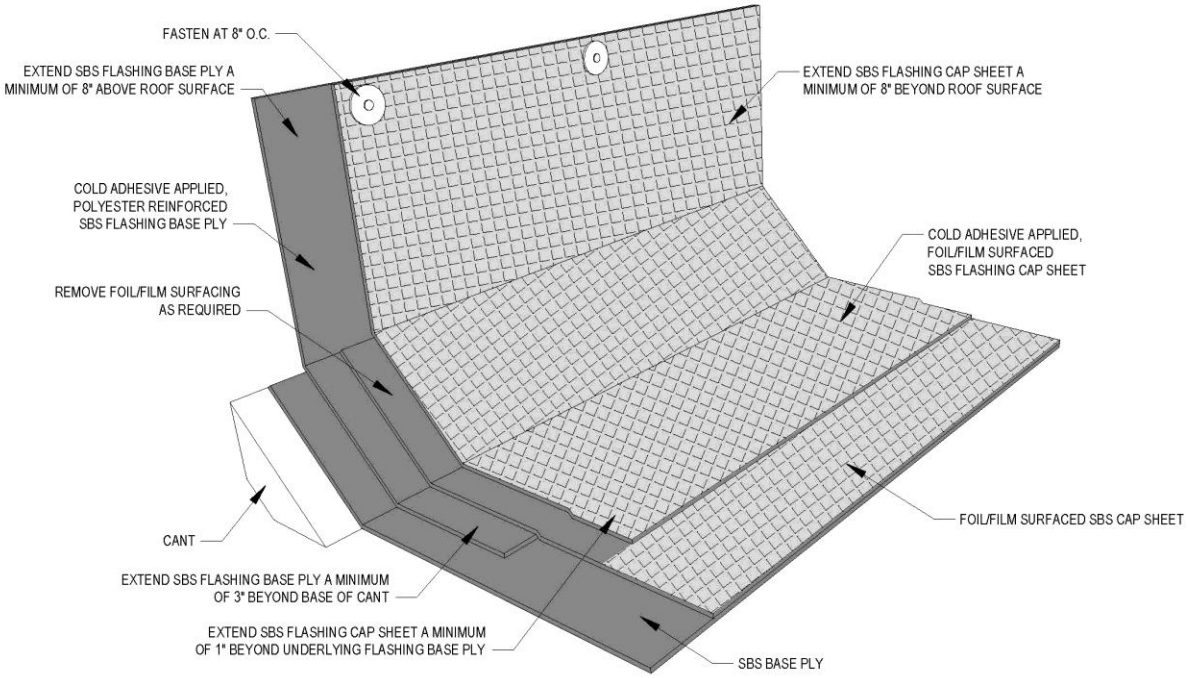


Figure 3.2.2b Fully Adhered, Cold Adhesive-Applied Wall/Curb Flashing on Foil/Film Surfaced Cap Sheet

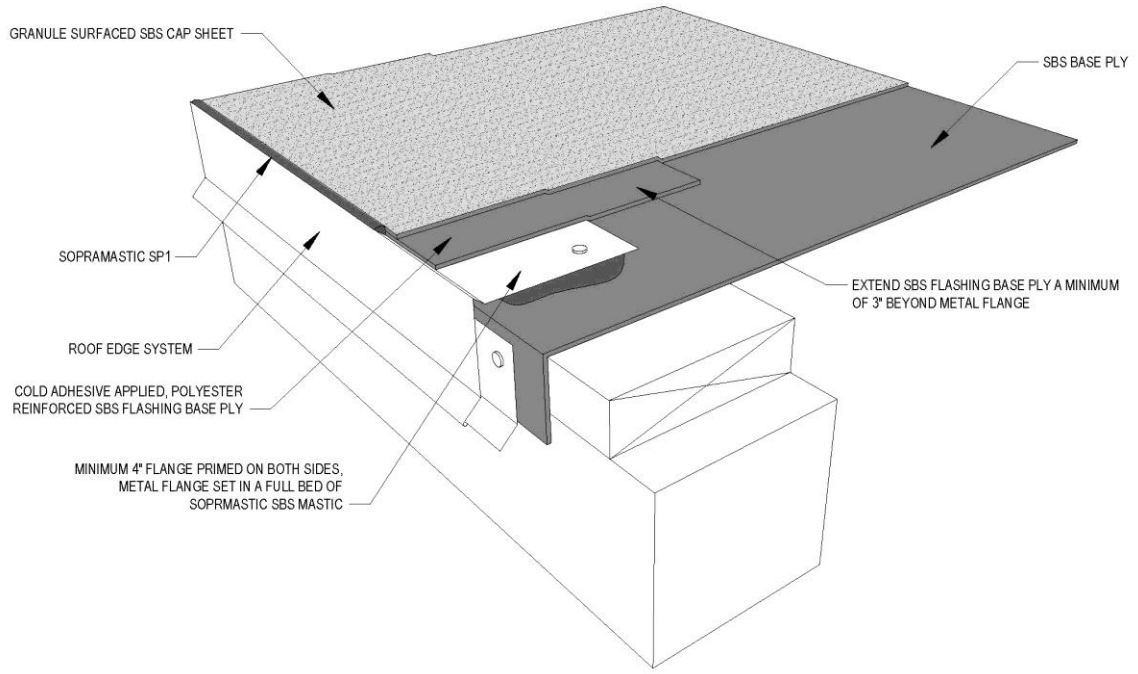


Figure 3.2.2c Fully Adhered, Cold Adhesive-Applied Edge Flashing With Granule Surfaced Cap Sheet

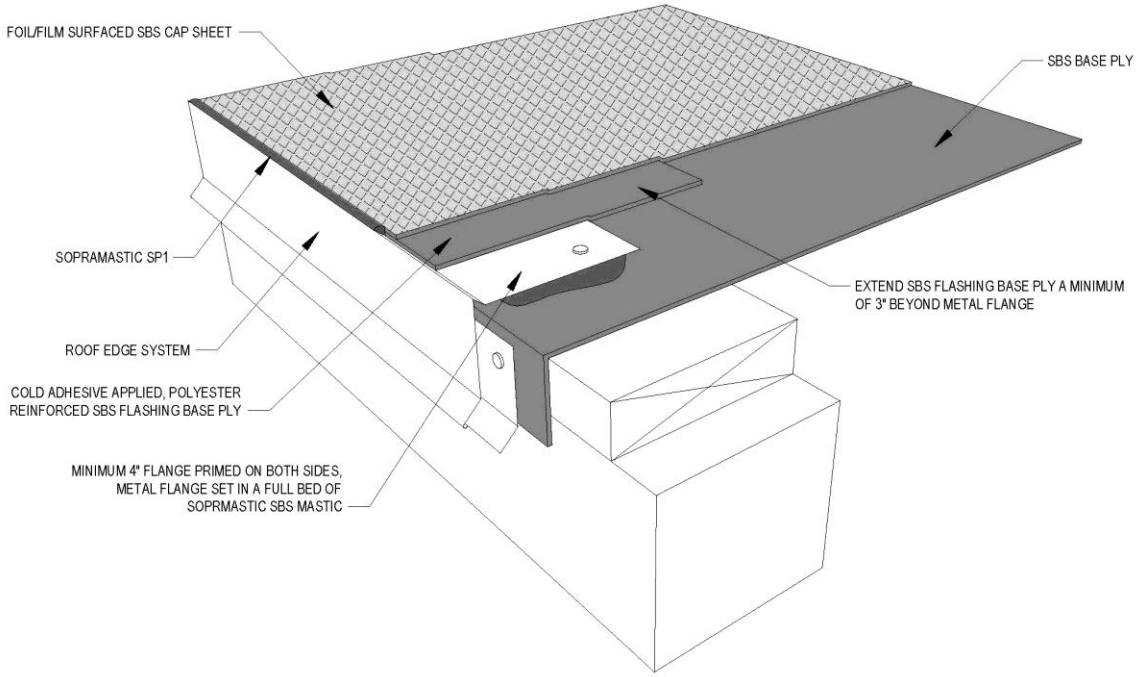


Figure 3.2.2d Fully Adhered, Cold Adhesive-Applied Edge Flashing With Foil/Film Surfaced Cap Sheet

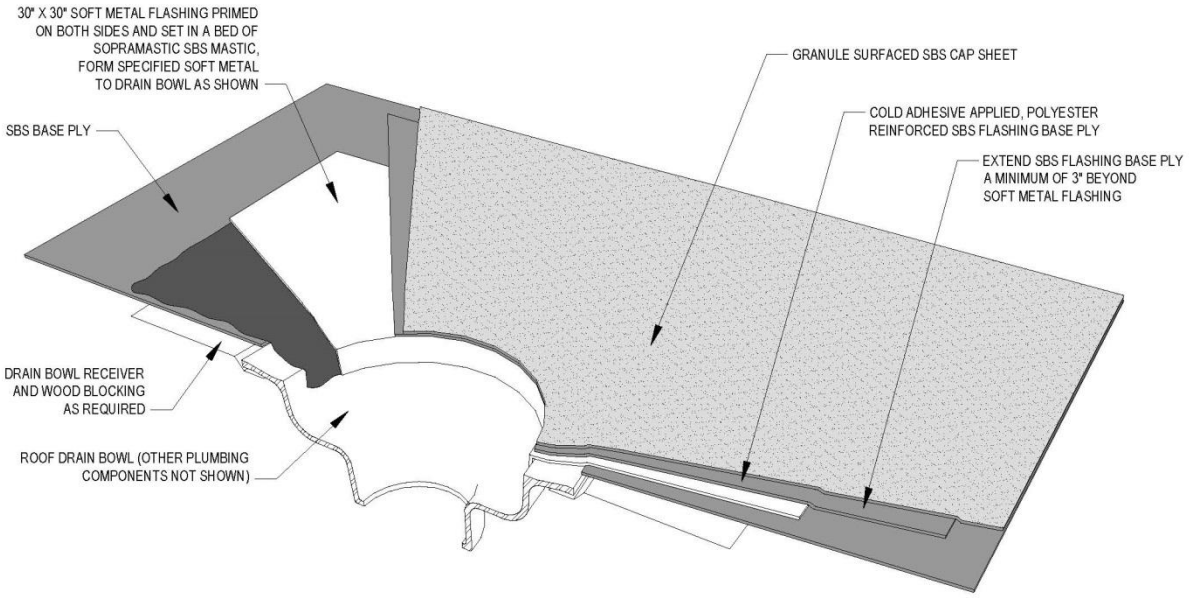


Figure 3.2.2e Fully Adhered, Cold Adhesive-Applied Roof Drain Flashing With Granule Surfaced Cap Sheet

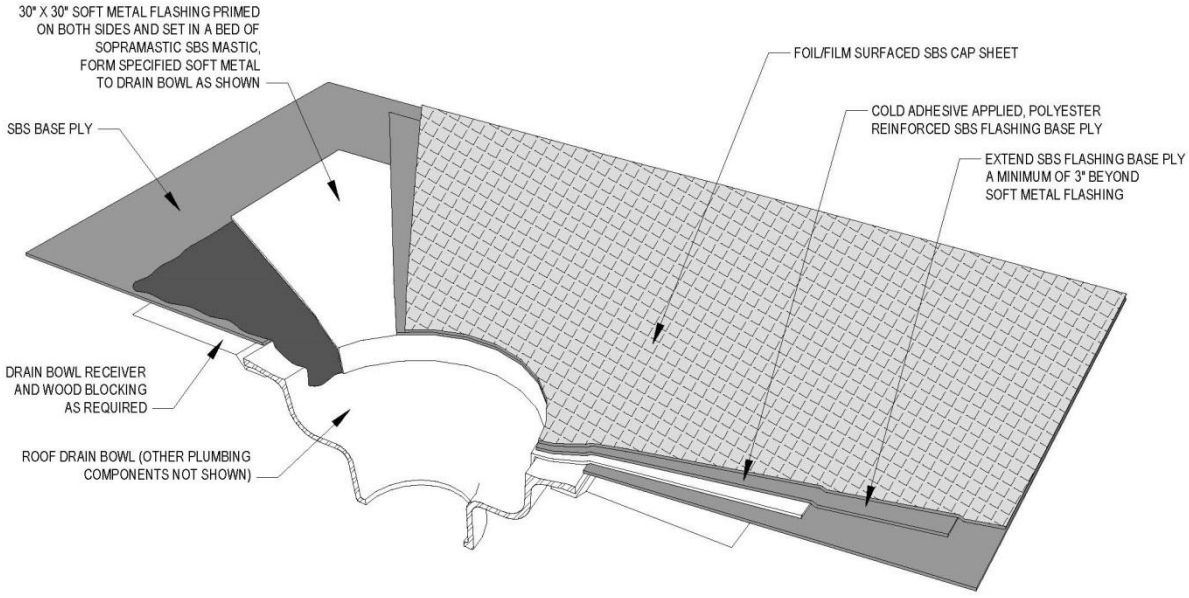


Figure 3.2.2f Fully Adhered, Cold Adhesive-Applied Roof Drain Flashing With Foil/Film Surfaced Cap Sheet

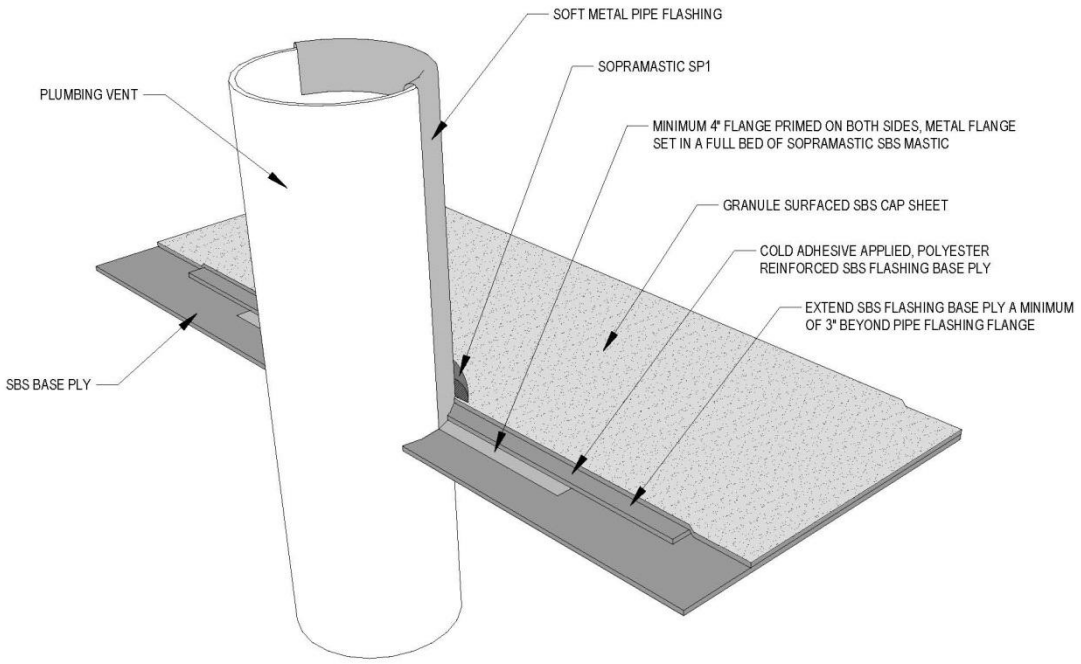


Figure 3.2.2g Fully Adhered, Cold Adhesive-Applied Plumbing Vent Flashing With Granule Surfaced Cap Sheet

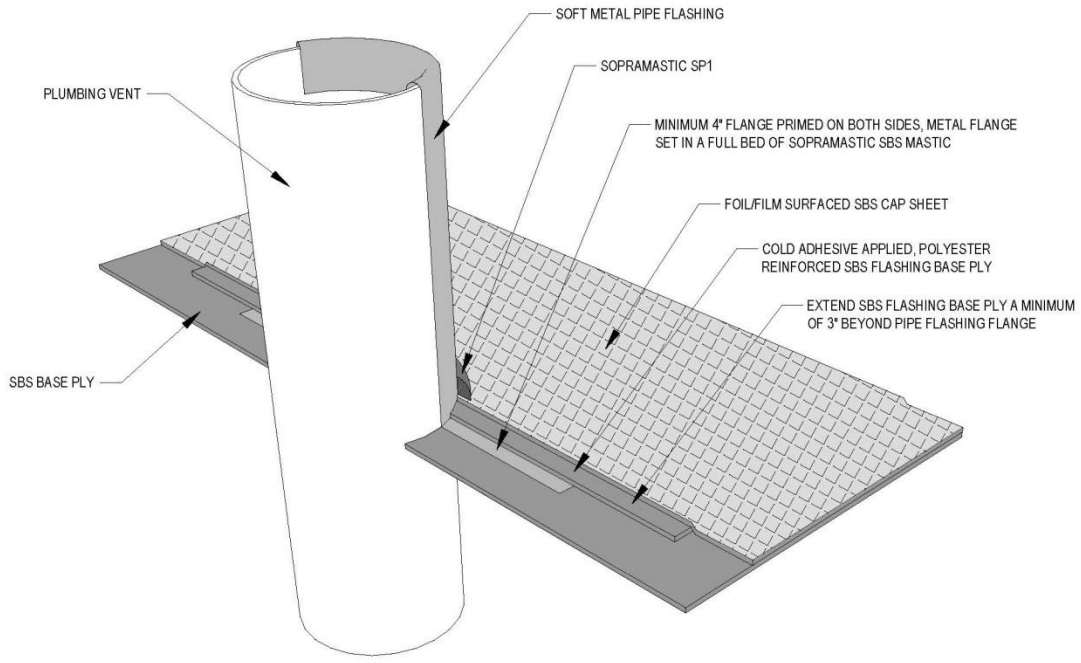


Figure 3.2.2h Fully Adhered, Cold Adhesive-Applied Plumbing Vent Flashing With Foil/Film Surfaced Cap Sheet

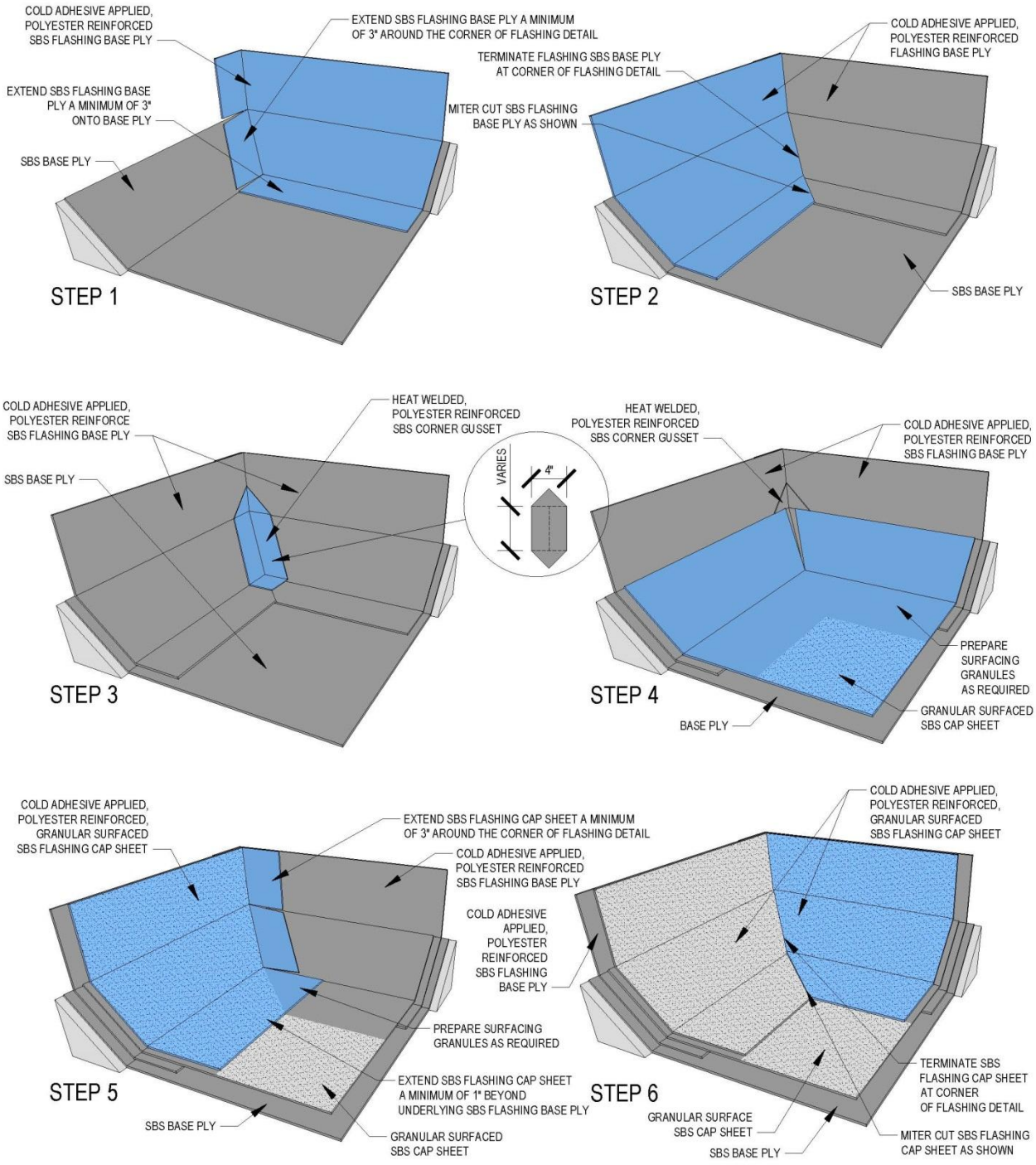


Figure 3.2.2i Fully Adhered, Cold Adhesive-Applied Inside Corner Flashing On Granular Surfaced Cap Sheet With Cant

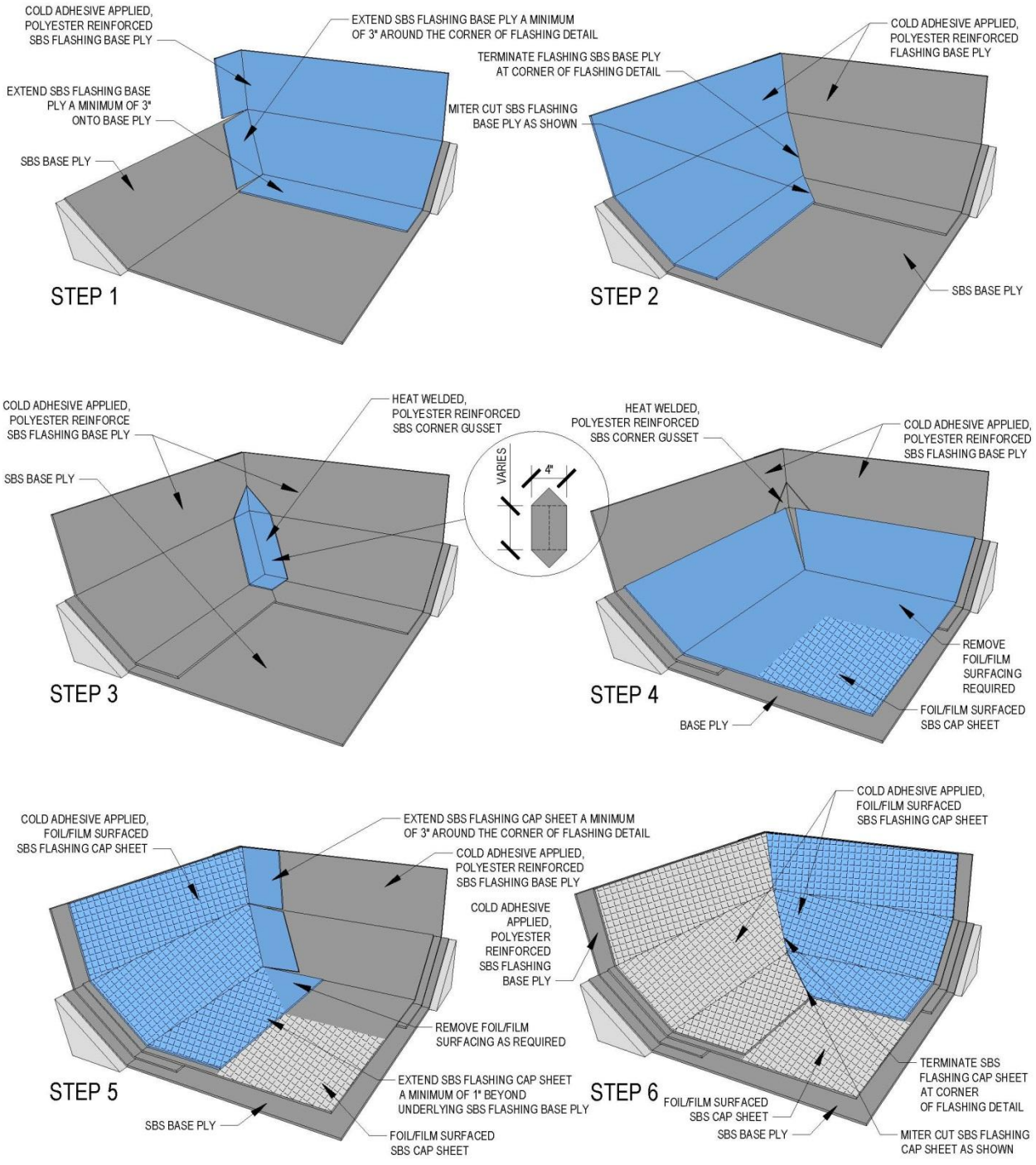


Figure 3.2.2j Fully Adhered, Cold Adhesive-Applied Inside Corner Flashing On Foil/Film Surfaced Cap Sheet With Cant

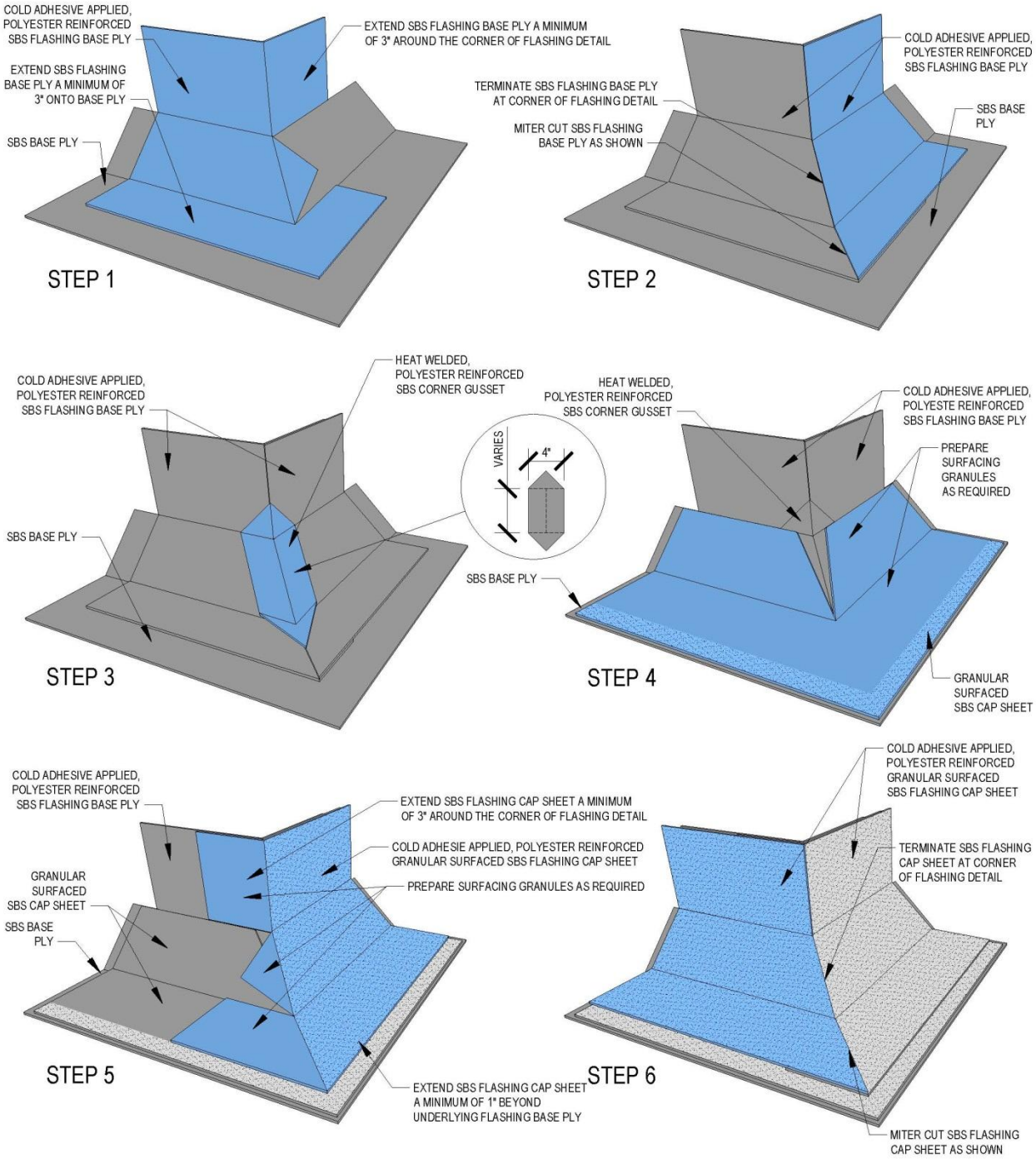


Figure 3.2.2k Fully Adhered, Cold Adhesive-Applied Outside Corner Flashing On Granular Surfaced Cap Sheet With Cant

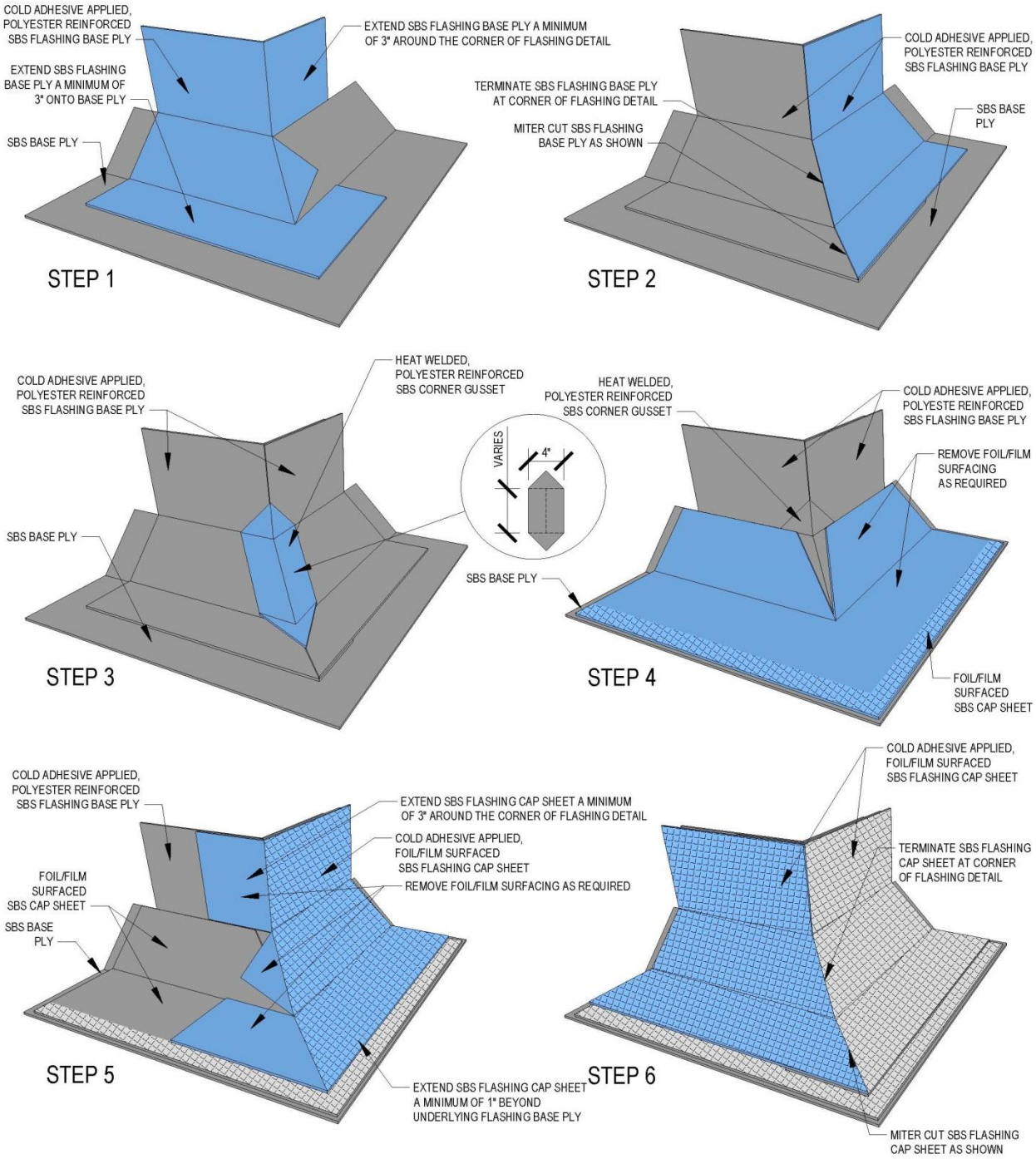


Figure 3.2.2l Fully Adhered, Cold Adhesive-Applied Outside Corner Flashing On Foil/Film Surfaced Cap Sheet With Cant

3.2.3 PARTIALLY ADHERED/RIBBON-APPLIED, COLD ADHESIVE-APPLIED FIELD BASE PLIES

General:

- Partially-adhered base plies may be installed using ribbon-applied SOPREMA® COLPLY™ EF ADHESIVE over approved cellular lightweight insulating concrete, gypsum, concrete and other approved substrates.
- COLPLY™ EF ADHESIVE is ribbon-applied to partially attach SBS modified bitumen base plies. The un-adhered portions between adhesive ribbons allow for vapor pressure to dissipate to the atmosphere where the venting channels are open to flashing terminations.
- The underside of the SBS base ply has a sanded surface for installation in ribbons of COLPLY™ EF ADHESIVE. The top surface may be sanded for the application of adhesives, or the top surface may have plastic burn-off film for the application of heat welded plies. Refer to SOPREMA® website for ribbon-adhered, SBS base ply fastening patterns.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply adhesive ribbons and membrane plies.
    - The adhesive and membrane temperature should be 70°F (21°C) or more at the point of membrane application.
    - Ice and frost may be difficult to detect on concrete, lightweight insulating concrete and other substrates. During extended periods of cold weather when the substrate is exposed to freezing conditions, the substrate should be heated as necessary to eliminate ice crystals and ensure the substrate is dry. Examine adhesion closely when conditions are below freezing.
    - To ensure the adhesive is applied at 70°F (21°C) during cold weather, drums, 5 gallon pails and cartridges should be stored in heated areas. Drums and 5 gallon pails exposed to cold temperature on the roof should be provided with heaters when necessary to ensure the minimum application temperature is maintained.
- Primer is not recommended for COLPLY™ EF ADHESIVE.
- Ensure all substrates are clean and prepared to receive the specified adhesive and membrane ply.
- Surfaces must be dry to the touch and free of water, ice, and frost.
- Adhesion/peel tests are encouraged for lightweight concrete, concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Adhere an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip COLPLY™ EF ADHESIVE, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.

    - Allow sufficient time for the samples to cure.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away "clean" from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Remove all roll packaging tape prior to installation.

Application:

- Refer to the following instructional videos for partially adhere, cold adhesive-applied base plies:
    - COLPLY EF Ribbon-Adhered Base Ply – Instructional Video
        - Link: https://www.youtube.com/watch?v=Ss4pqVgyyg8
- Before beginning the installation, 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 unrolled into the adhesive while ensuring the specified side and end-laps are maintained
- Adhesive application:
    - Apply COLPLY™ EF ADHESIVE in ribbons or beads using a spreader cart, or dispense COLPLY™ EF ADHESIVE from cartridges and guns.
    - Ribbons of adhesive should be ½ to ¾ in wide at the point of application, and should spread 2-1/2 to 3 in when rolled-in using a weighted roller.
    - Application rate for the minimum ½ in ribbons is approximately 1 gallon per 100 linear feet based on smooth substrate conditions. Adjust the application rate based upon conditions.
    - Side-laps and end-laps are sealed watertight using beads of COLPLY™ EF ADHESIVE dispensed from cartridges and guns, or laps may be heat-welded and sealed watertight.
    - To allow for cross-venting, provide a 6 in "skip" in adhesive to allow for a 2in "break" in the ribbons spaced 33 to 45 ft apart or less as necessary to accommodate rooftop and roof perimeter conditions.
    - For lightweight insulating concrete substrates, and where specified, install one-way spun aluminum roof vents evenly spaced to cover 1,000 sq ft per vent.
- 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.
- 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.
- Use a weighted roller to ensure the membrane is fully adhered to the ribbons of adhesive. Roll the membrane working forward and outward as necessary to remove wrinkles.
- Where laps are adhered using membrane adhesive, apply sufficient adhesive coverage to ensure 1/8 to 1/4 in of adhesive bleed-out at all laps.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of base ply laps.

- At 6 in end-laps, cut a 45 degree dog-ear away from the selvage edge for all T-joints. Refer to Table 3.2.3b for end-lap preparation.
- 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" in order to hot-air weld or torch all laps watertight.
- Subsequent plies and/or cap sheets are fully adhered to the partially adhered base ply.
- Where specified, the perimeter details should be partially adhered, or otherwise designed to allow for venting vapor pressure.
- Partially adhered flashing base plies are limited to vertical flashing applications such as walls and curbs. Flashing base plies at roof drains and all horizontal details should be fully adhered by heat welding or fully adhered using specified flashing cement. Refer to Table 3.1.2a for heat welded flashing base plies and Table 3.2.2a for cold adhesive-applied flashing base plies.
- Partial attachment of vertical flashings may include the following:
    - Mechanically fastened base sheets. Refer to Table 2.1a.
    - Mechanically fastened SOPRABOARD™ or approved cement roof board.
    - Partially adhered, heat welded flashing base plies. Refer to Table 3.1.4a.
- Refer to flashing application guidelines indicated herein. Contact SOPREMA® for additional flashing options.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation to ensure venting channels are maintained as specified.
- Each day, ensure all vented flashing details are flashed watertight to prevent moisture infiltration into the venting channels between ribbons of adhesive.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.2.3a Partially-Adhered, Cold Adhesive-Applied Field Base Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a.
				All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.
				All hot asphalt-applied field base plies. Refer to Table 3.5a.
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.

Table 3.2.3b Partially Adhered, Cold Adhesive-Applied Field Base Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Heat welded	None
	Adhered with COLPLY™ or COLPLY™ EF	None
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Heat welded	None

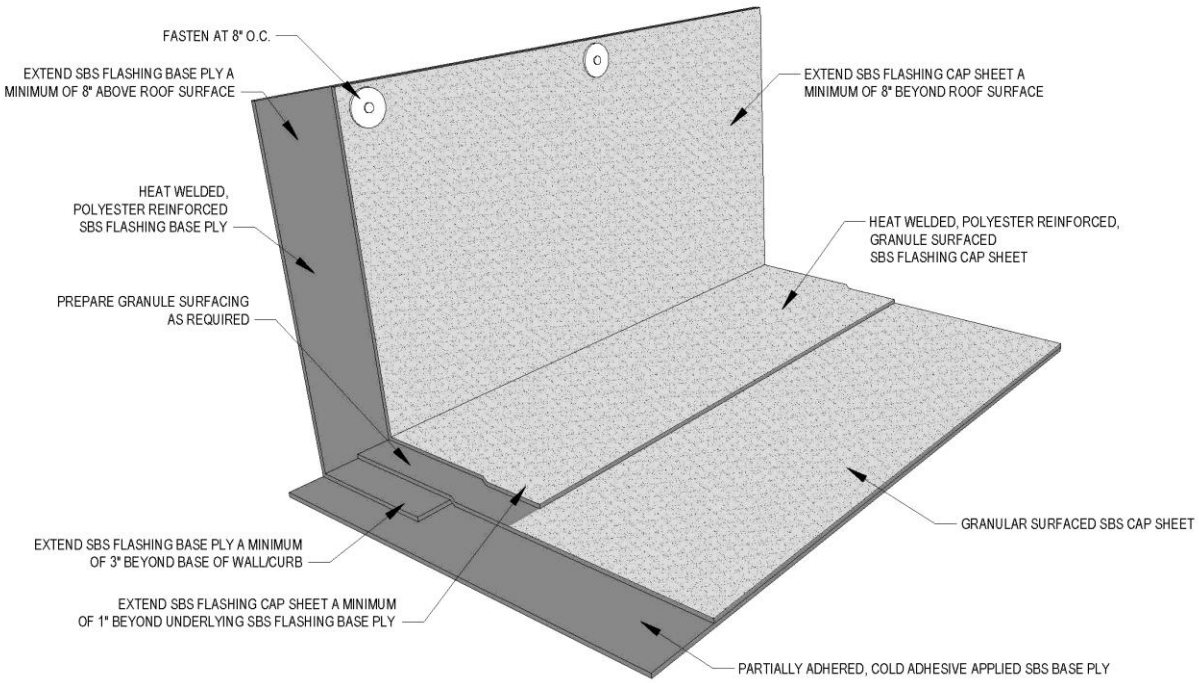


Figure 3.2.3a Partially Adhered, Cold Adhesive-Applied Base Ply at Wall/Curb With Granule Surfaced Cap Sheet Without Cant

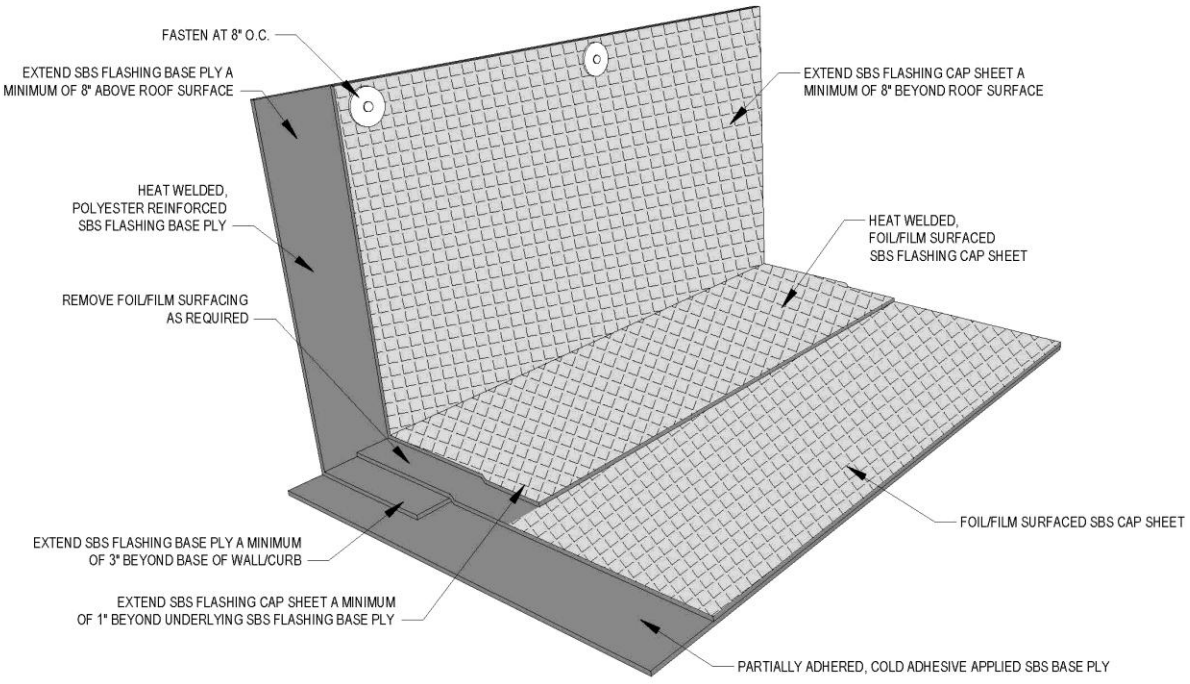


Figure 3.2.3b Partially Adhered, Cold Adhesive-Applied Base Ply at Wall/Curb With Foil/Film Surfaced Cap Sheet Without Cant

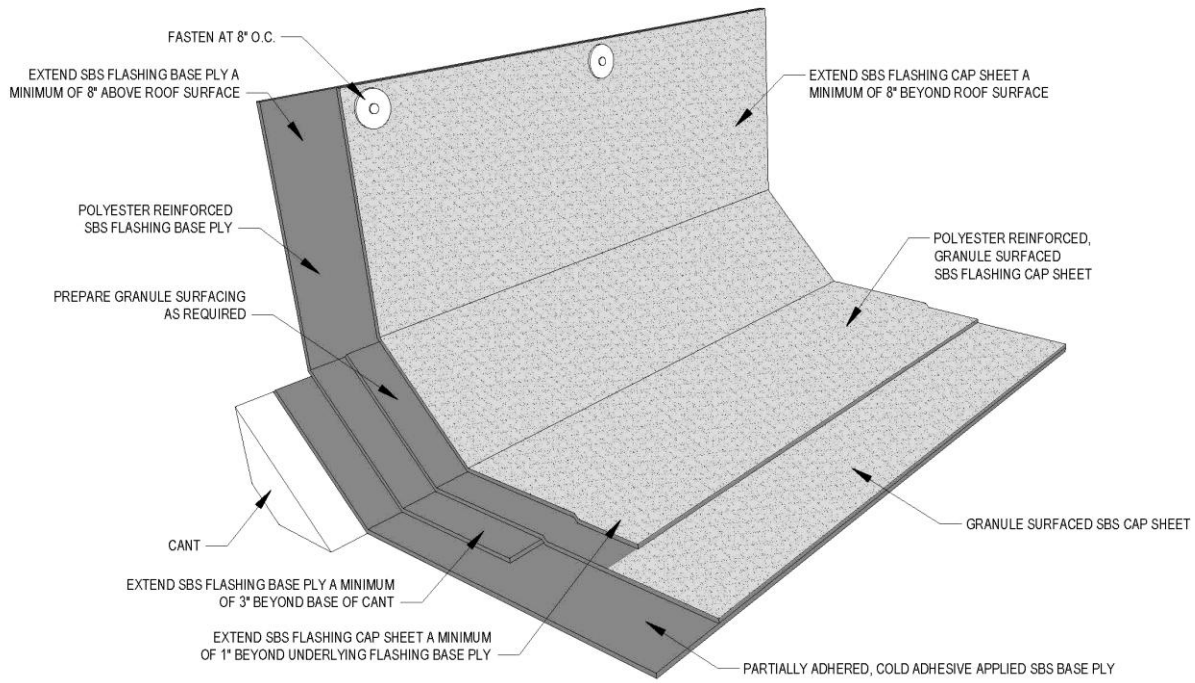


Figure 3.2.3c Partially Adhered, Cold Adhesive-Applied Base Ply at Wall/Curb With Granule Surfaced Cap Sheet With Cant

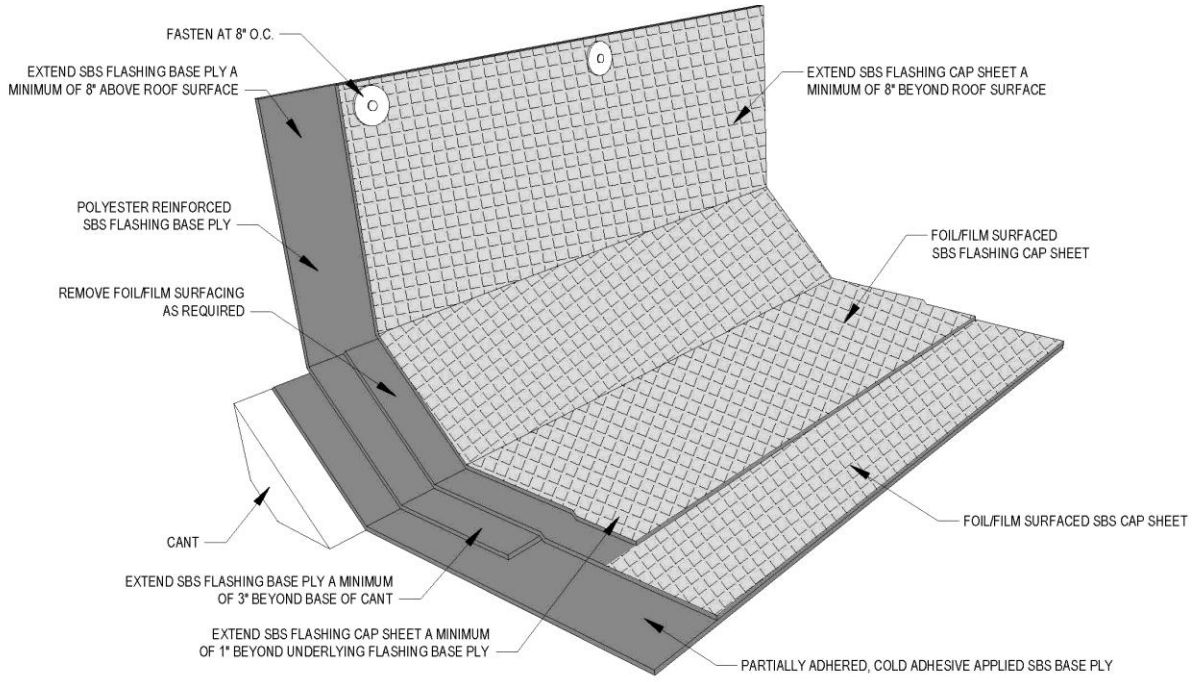


Figure 3.2.3d Partially Adhered, Cold Adhesive-Applied Base Ply at Wall/Curb With Foil/Film Surfaced Cap Sheet With Cant

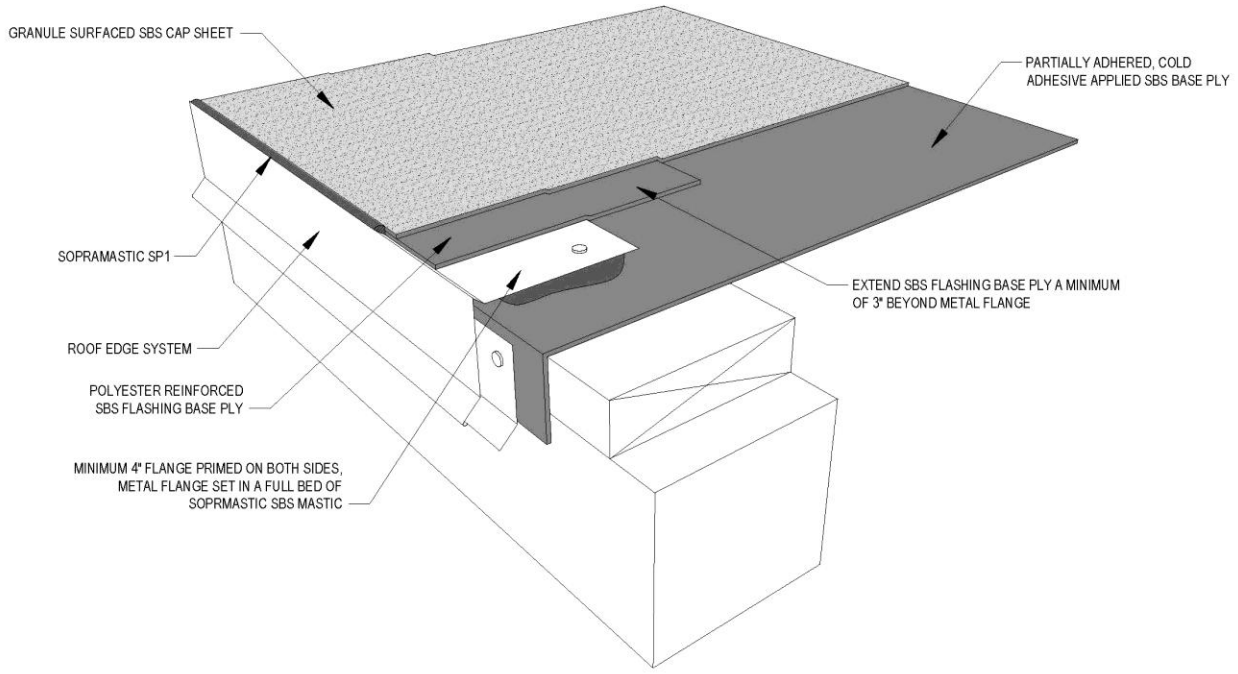


Figure 3.2.3e Partially Adhered, Cold Adhesive-Applied Base Ply at Edge With Granule Surfaced Cap

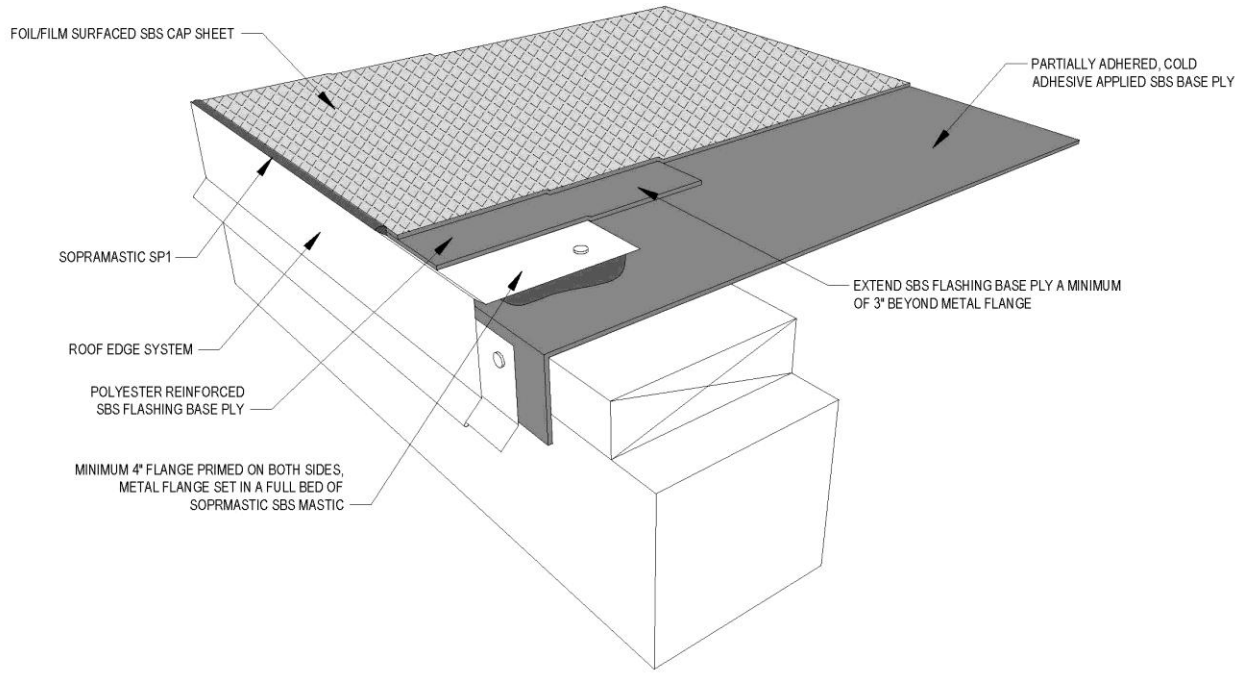


Figure 3.2.3f Partially Adhered, Cold Adhesive-Applied Base Ply at Edge With Granule Surfaced Cap

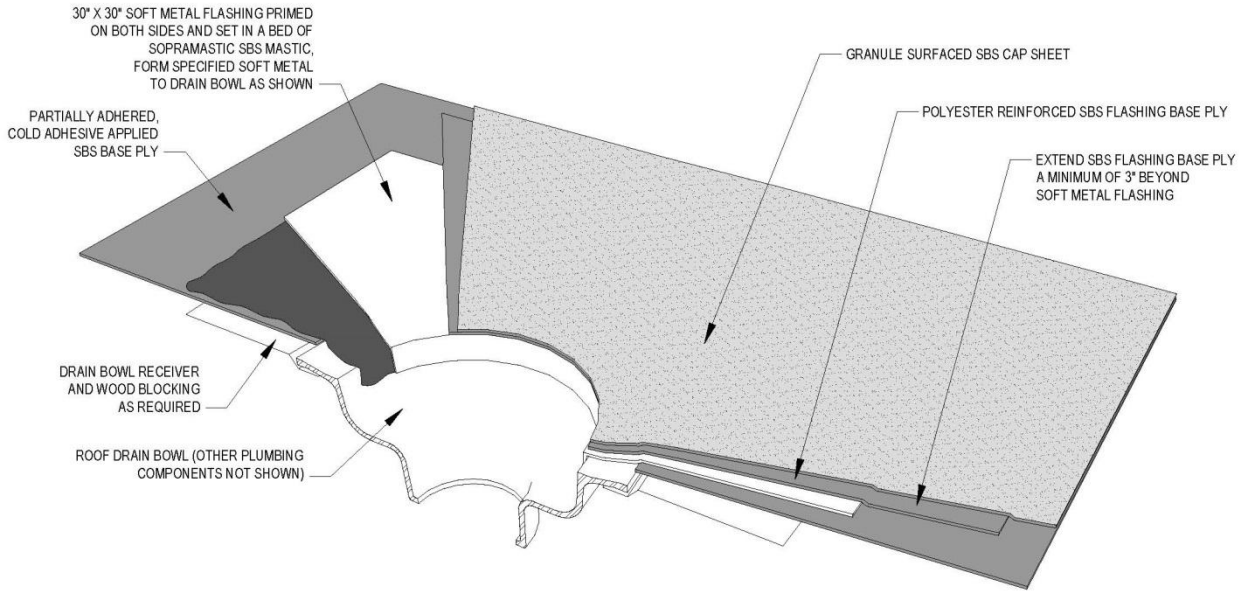


Figure 3.2.3g Partially Adhered, Cold Adhesive-Applied Base Ply at Roof Drain With Granule Surfaced Cap

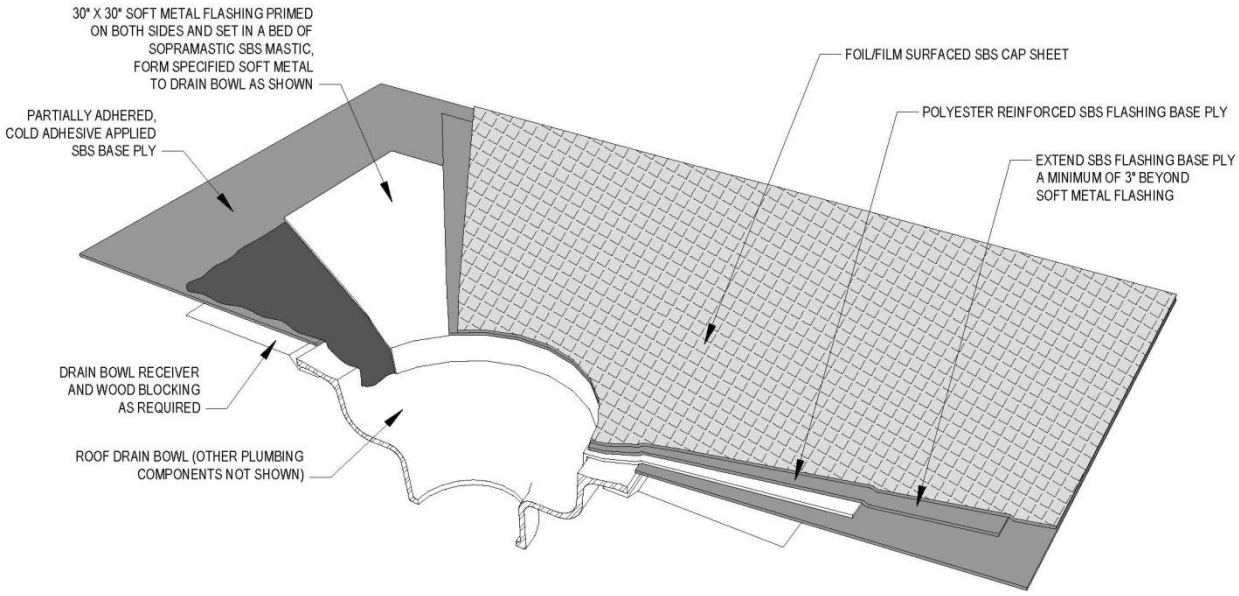


Figure 3.2.3h Partially Adhered, Cold Adhesive-Applied Base Ply at Roof Drain With Foil/Film Surfaced Cap

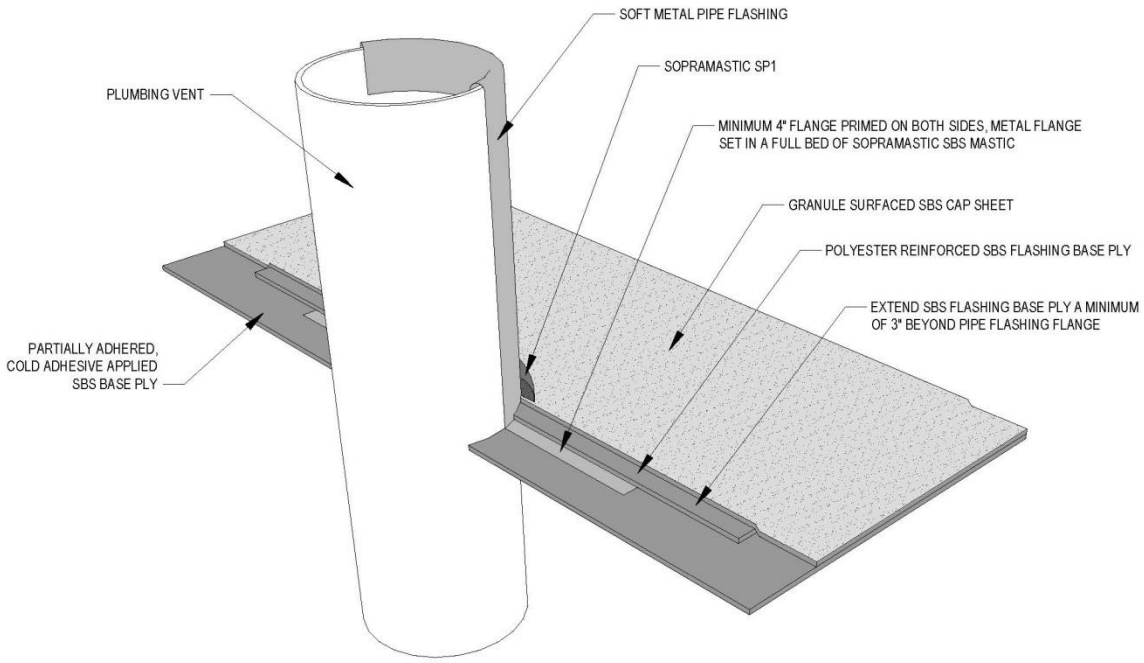


Figure 3.2.3i Partially Adhered, Cold Adhesive-Applied Base Ply at Plumbing Vent With Granule Surfaced Cap

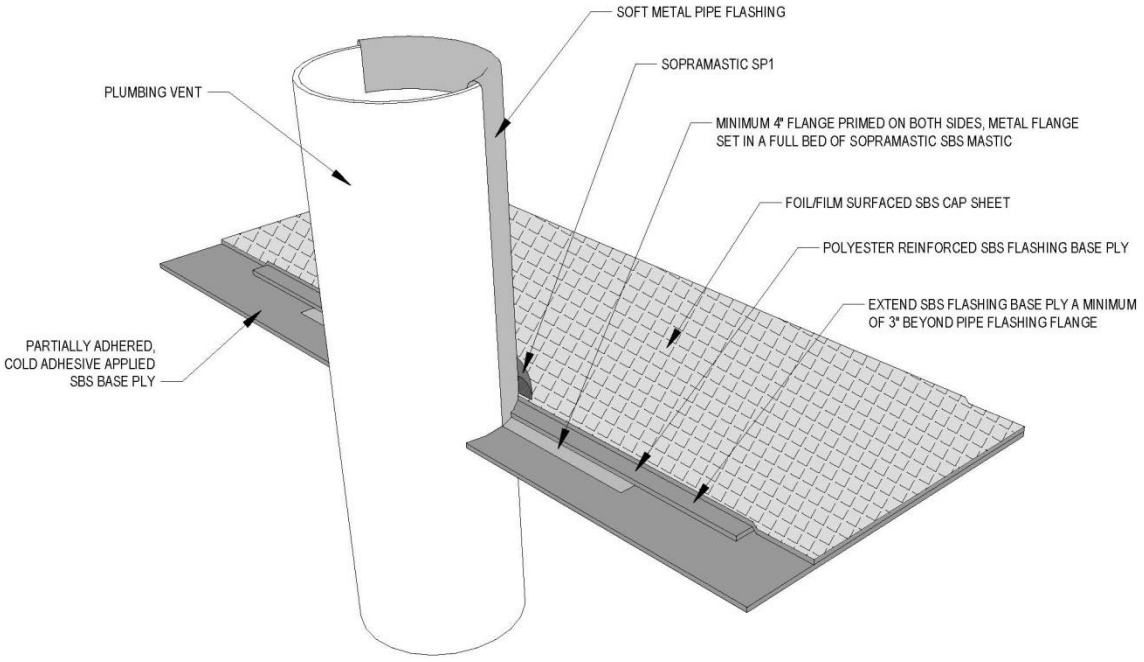


Figure 3.2.3j Partially Adhered, Cold Adhesive-Applied Base Ply at Plumbing Vent With Foil/Film Surfaced Cap

3.3 MECHANICALLY FASTENED SBS MODIFIED BITUMEN MEMBRANES

3.3.1 MECHANICALLY FASTENED FIELD BASE PLIES

General:

- SOPREMA® mechanically fastened SOPRAFIX® systems are tough, durable, wind resistant, multi-ply roofing membrane assemblies.
- The SOPRAFIX® BASE ply is mechanically fastened within side-laps and sealed watertight.
- Cap sheets are then heat-welded, cold adhesive-applied or self-adhered to the SOPRAFIX® BASE ply for a multi-ply membrane assembly. Refer to Table 3.3.1a.
- For SOPRAFIX® BASE fastening requirements refer to Table 3.3.1b and Figures 3.3.1a through 3.3.1n.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure all roofing substrates are examined and are acceptable to receive the mechanically fastened membrane.
- For heat-welded side and end-laps, refer to NRCA CERTA, local codes and building owner's requirements for hot work operations. Ensure all roofing substrates are prepared and acceptable to receive the heat-welded membrane.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll the SOPRAFIX® BASE ply 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 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, penetrations, walls and curbs, fasten the end-laps to the deck 12 in on-centers or less. Refer to Figures3.3.1a through 3.3.1j.
- 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.
    - Heat-welded side-laps: Use an approved roof torch to 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. Using a weighted steel roller, carefully press in laps to ensure approximately 1/8 to ¼ in bleed-out is achieved at laps.

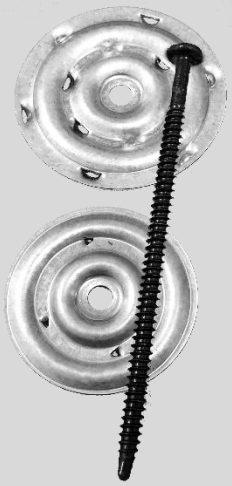
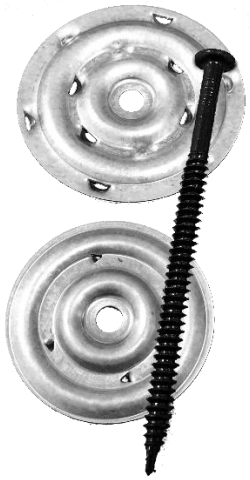
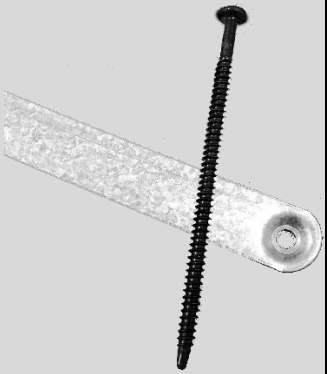
    - Hot-air welded side-laps: Insert the hot-air welder shoe within the lap, and adjust the hot-air welder as required to produce a continuous weld across the full side-lap width. Ensure approximately 1/8 to ¼ in bleed-out is achieved at laps.
    - Self-adhesive side-laps: Remove the release film within the side-lap while immediately following with a weighted steel roller to ensure a watertight seal is achieved.
- At 6 in end-laps, cut a 45 degree dog-ear away from the selvage edge. Refer to Table 3.3.1c for end-lap preparation.
- SBS Flashings for SOPRAFIX® systems:
    - Where the SOPRAFIX® BASE ply terminates at roof edges, walls, curbs and penetrations, fasten the end-laps to the deck 12 in on-centers or less. Install the flashing base ply a minimum of 3 in beyond fastener plates. Refer to SOPREMA® website for mechanically fastened, SBS modified bitumen base ply fastening patterns.
    - SBS flashings include fully adhered, heat-welded (Refer to Table 3.1.2a), partially adhered, heat-welded (Refer to Table 3.1.4a), fully adhered, cold adhesive-applied using flashing cement (Refer to Table 3.2.2a), fully adhered, self-adhesive (Refer to Table 3.4.2a), or a combination of these application methods.
    - ALSAN® RS or ALSAN® FLASHING liquid-applied, reinforced flashing systems may be installed as an alternate to SBS flashing membranes. Refer to Section 4, *LIQUID APPLIED FLASHINGS*.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of subsequent ply laps.
- The cap sheet should be applied parallel with the base ply so that the cap sheet side-laps do not cross over or overlap onto the base ply side-laps.
- Contact SOPREMA® for other membrane and flashing options.
- Refer to the following for more information:
    - SOPRAFIX® Installation (Video)
        - Link: https://www.youtube.com/watch?v=da4_levAAI0&list=PLCkWI-tgKqeUY3bwm7wxpekFg_XWYWQ4J&index=15

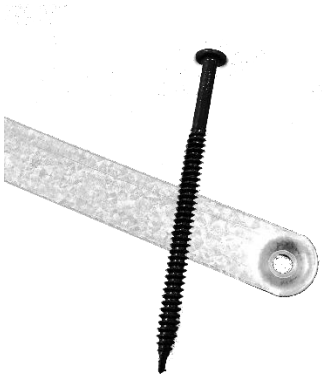
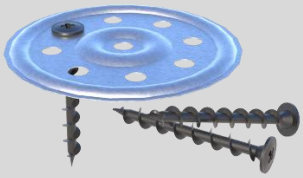
Inspection:

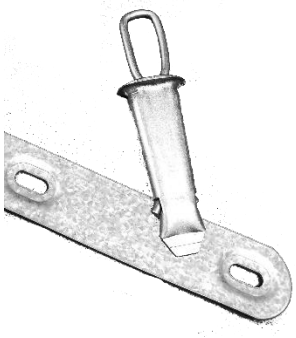
- Each day, physically inspect side-laps and end-laps to ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.
- Repair all un-adhered voids, wrinkles, open laps and all other deficiencies before installing the inter-ply and/or cap sheet over completed fastened base ply sheet.
- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.3.1a Mechanically Fastened Modified Bitumen Field Base Plies						
SOPRAFIX® BASE Ply	**Bottom Surfacing**	**Top Surfacing**	**Side Lap Surfacing**	**Side Lap Width***	**Length**	**Overlying SBS Field Ply Options**
SOPRAFIX® BASE 612	Burn-off film	Burn-off film	Burn-off film	4 and 5 in	32.8 ft (10 m)	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRAFIX® BASE 613	Burn-off film	Burn-off film	Burn-off film	5 in	32.8 ft (10 m)	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRAFIX® BASE 614	Burn-off film	Burn-off film	Burn-off film	4, 5 and 6 in	32.8 ft (10 m)	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRAFIX® BASE 622	Sanded	Sanded	Burn off film	4 and 5 in	32.8 ft (10 m)	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a.

*For 2in seam plates, a minimum 4in side lap is required. For 2.4in and 3in seam plates, a minimum 5in side lap is required. Also refer to agency approvals for other required minimum side laps.

Table 3.3.1b Mechanically Fastened SBS Field Base Ply Fasteners			
Name	**Graphic**	**SBS Base Ply**	**Substrate/Deck Type**
SOPRAFIX® #14 MP FASTENER with SOPRAFIX® 2 IN STRESS PLATE, SOPRAFIX® #14 MP FASTENER with SOPRAFIX® 2.4 IN STRESS PLATE		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Steel, Wood, Concrete
SOPRAFIX® #15 HD FASTENER with SOPRAFIX® 2 IN STRESS PLATE, SOPRAFIX® #15 HD FASTENER with SOPRAFIX® 2.4 IN STRESS PLATE		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Steel, Wood
SOPRAFIX® #14 MP FASTENER with SOPRAFIX® MBB, SOPRAFIX® #14 MP FASTENER with SOPRAFIX® MBB-R		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Steel, Wood, Concrete

Name	Graphic	SBS Base Ply	Substrate/Deck Type
SOPRAFIX® #15 HD FASTENER with SOPRAFIX® MBB, SOPRAFIX® #15 HD FASTENER with SOPRAFIX® MBB-R		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Steel, Wood
VERSA-FAST® FASTENER With VERSA-FAST® PLATE		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Cellular lightweight insulating concrete, Aggregate lightweight insulating concrete, Poured gypsum, Gypsum plank, Wood
TRI-FIXX™ FASTENING SYSTEM		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Cellular lightweight insulating concrete, Poured gypsum

Name	Graphic	SBS Base Ply	Substrate/Deck Type
TWIN LOC-NAIL		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Cementitious wood fiber, Cellular lightweight insulating concrete, Aggregate lightweight insulating concrete, Poured gypsum
TWIN LOC-NAIL with SOPRAFIX® MBB-TL		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Cementitious wood fiber, Cellular lightweight insulating concrete, Aggregate lightweight insulating concrete, Poured gypsum
CONCRETE SPIKE with SOPRAFIX® 2 IN STRESS PLATE, CONCRETE SPIKE with SOPRAFIX® 2.4 IN STRESS PLATE		SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Concrete

*For 2in seam plates, a minimum 4in side lap is required. For 2.4in and 3in seam plates, a minimum 5in side lap is required. Also refer to agency approvals for other required minimum side laps.

Table 3.3.1c Mechanically Fastened Modified Bitumen Field Base Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
SOPRAFIX® BASE 612, SOPRAFIX® BASE 613, SOPRAFIX® BASE 614, SOPRAFIX® BASE 622	Heat welded	None

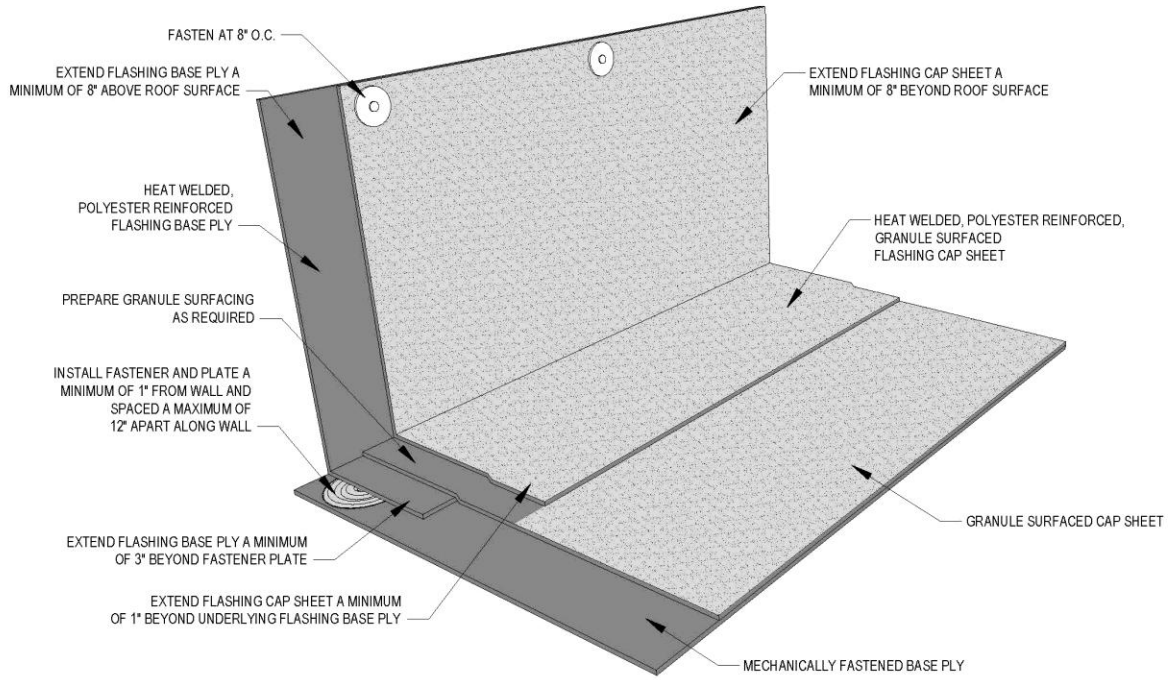


Figure 3.3.1a Mechanically Fastened Base Ply at Wall/Curb With Granule Surfaced Cap Sheet Without Cant

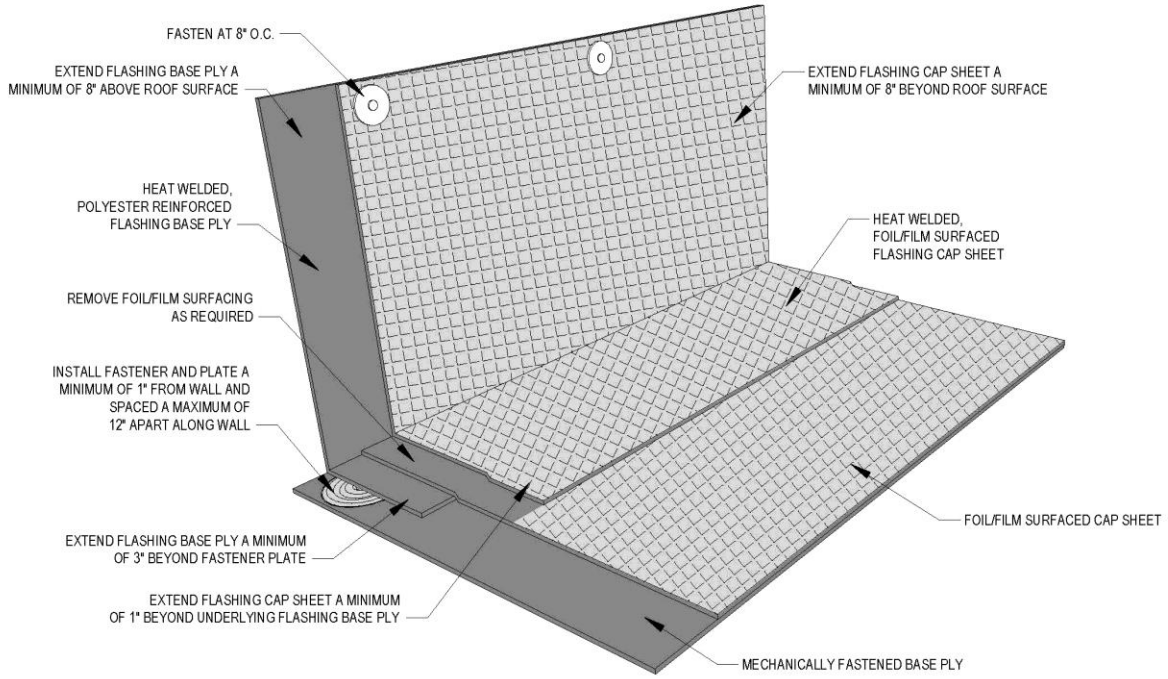


Figure 3.3.1b Mechanically Fastened Base Ply at Wall/Curb With Foil/Film Surfaced Cap Sheet Without Cant

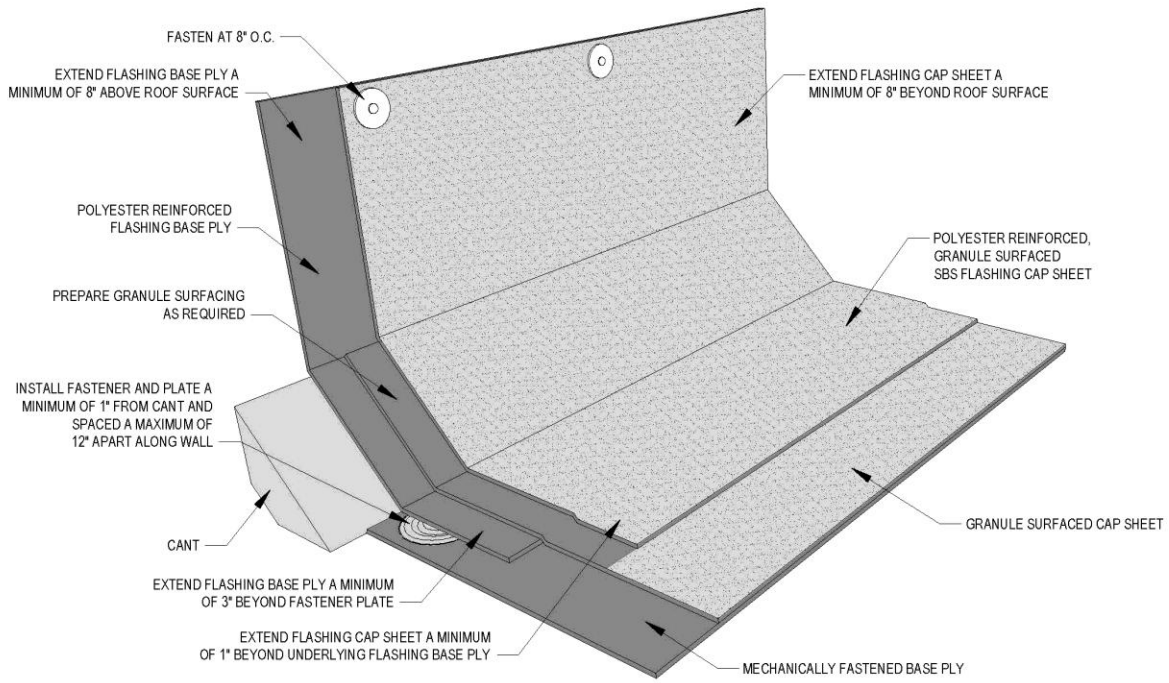


Figure 3.3.1c Mechanically Fastened Base Ply at Wall/Curb With Granule Surfaced Cap Sheet With Cant

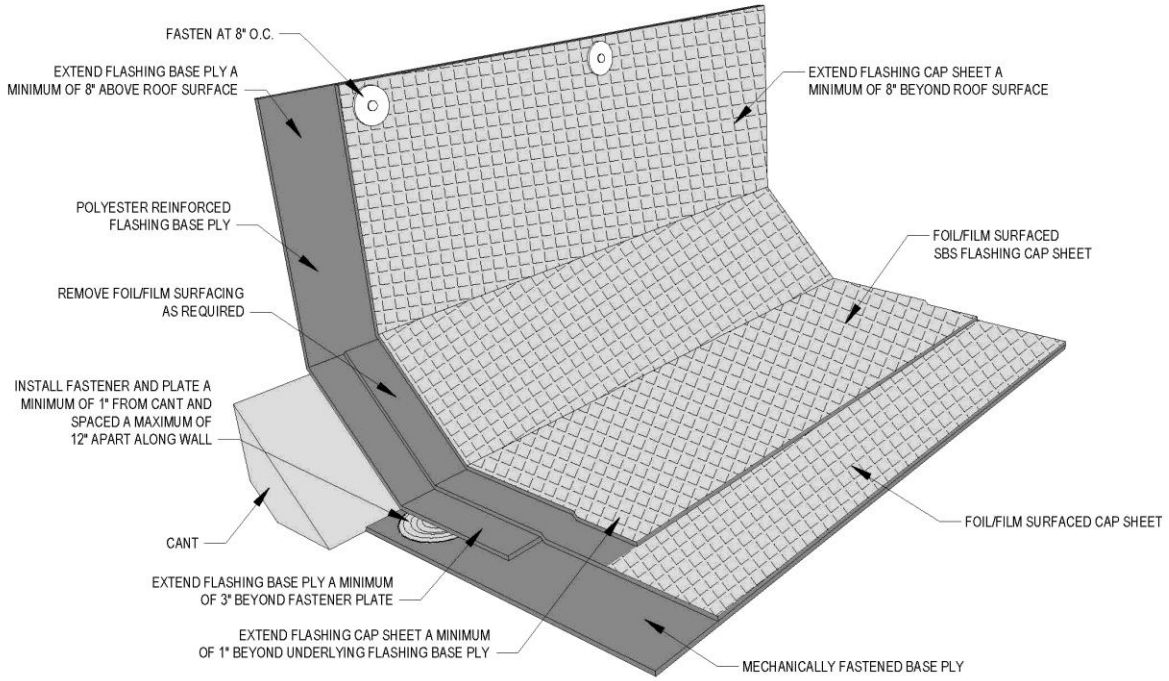


Figure 3.3.1d Mechanically Fastened Base Ply at Wall/Curb With Foil/Film Surfaced Cap Sheet With Cant

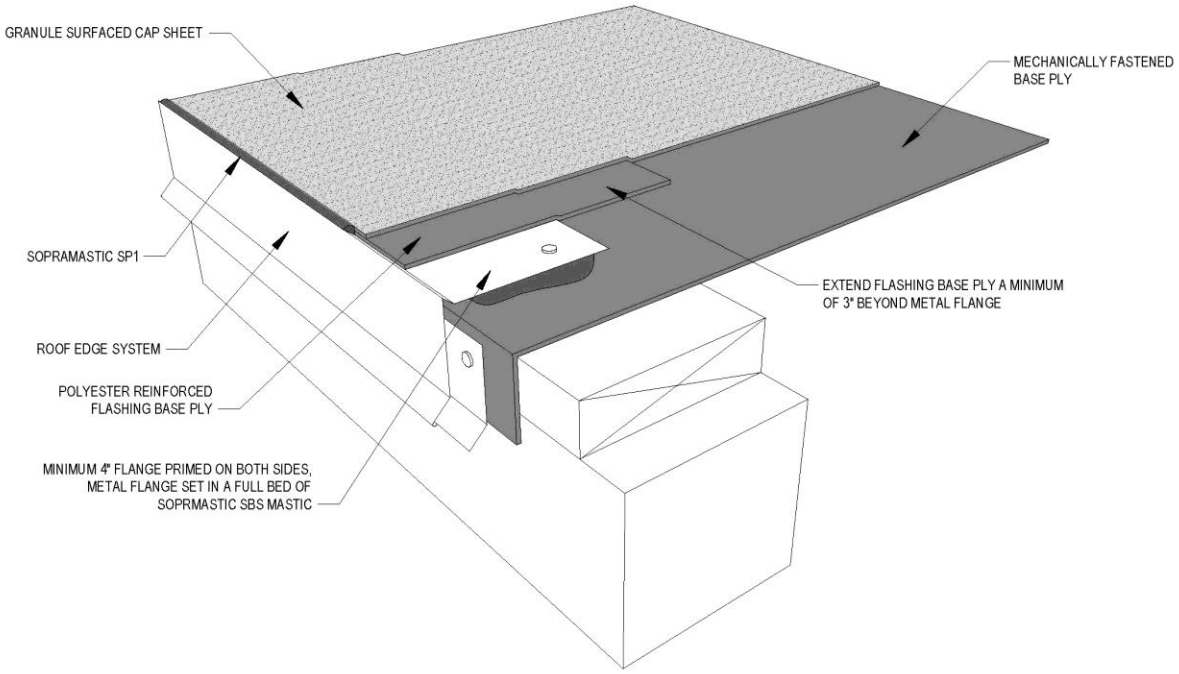


Figure 3.3.1e Mechanically Fastened Base Ply at Edge With Granule Surfaced Cap Sheet

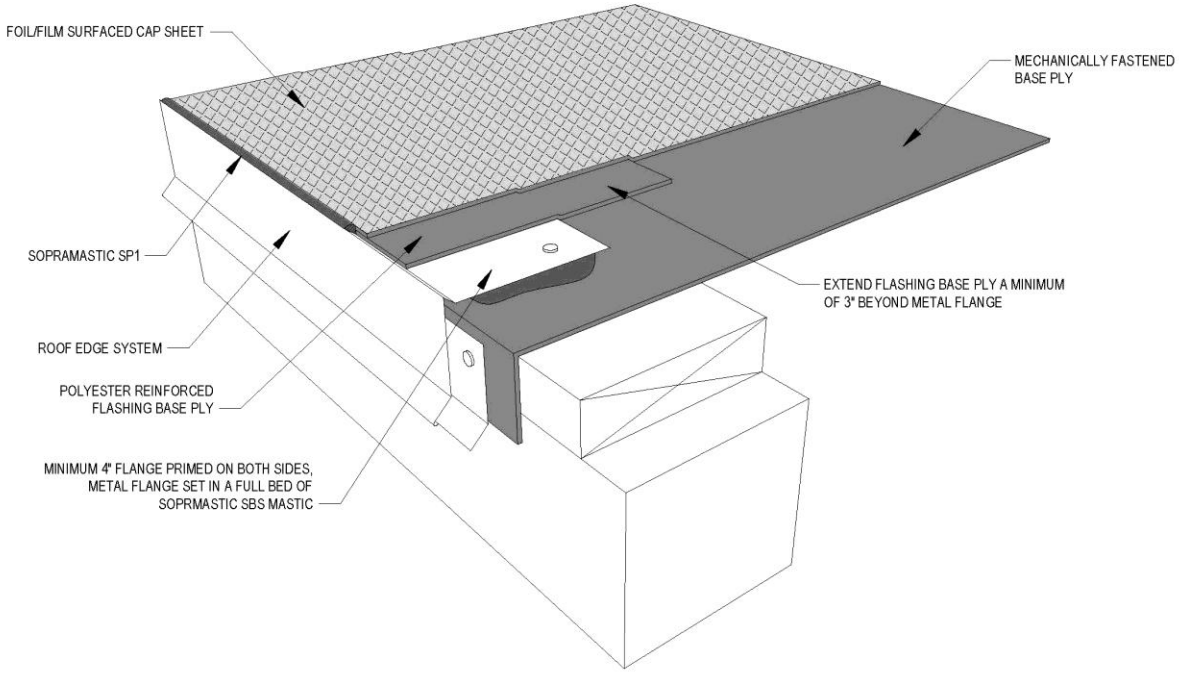


Figure 3.3.1f Mechanically Fastened Base Ply at Edge With Foil/Film Surfaced Cap Sheet

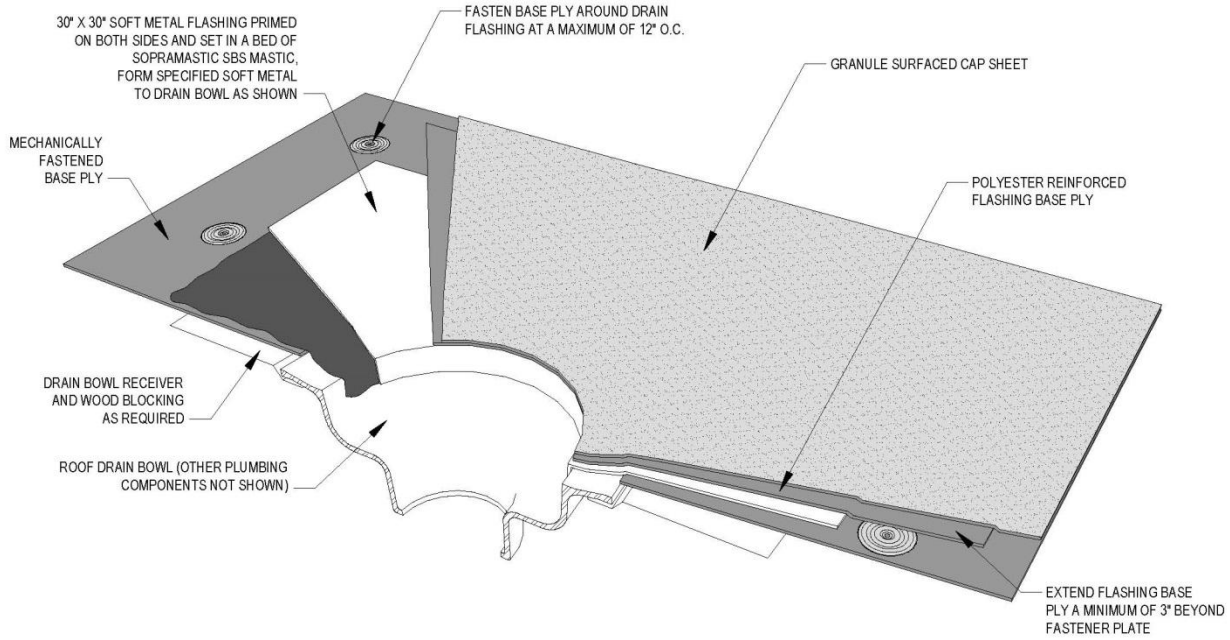


Figure 3.3.1g Mechanically Fastened Base Ply at Roof Drain With Granule Surfaced Cap Sheet

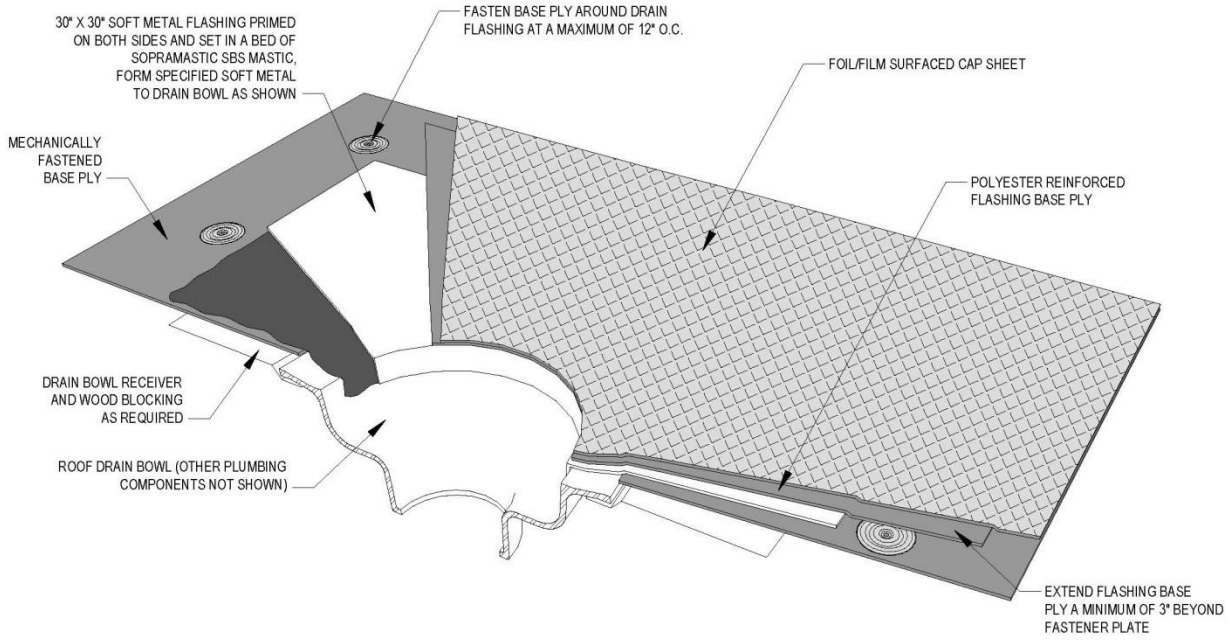


Figure 3.3.1h Mechanically Fastened Base Ply at Roof Drain With Foil/Film Surfaced Cap Sheet

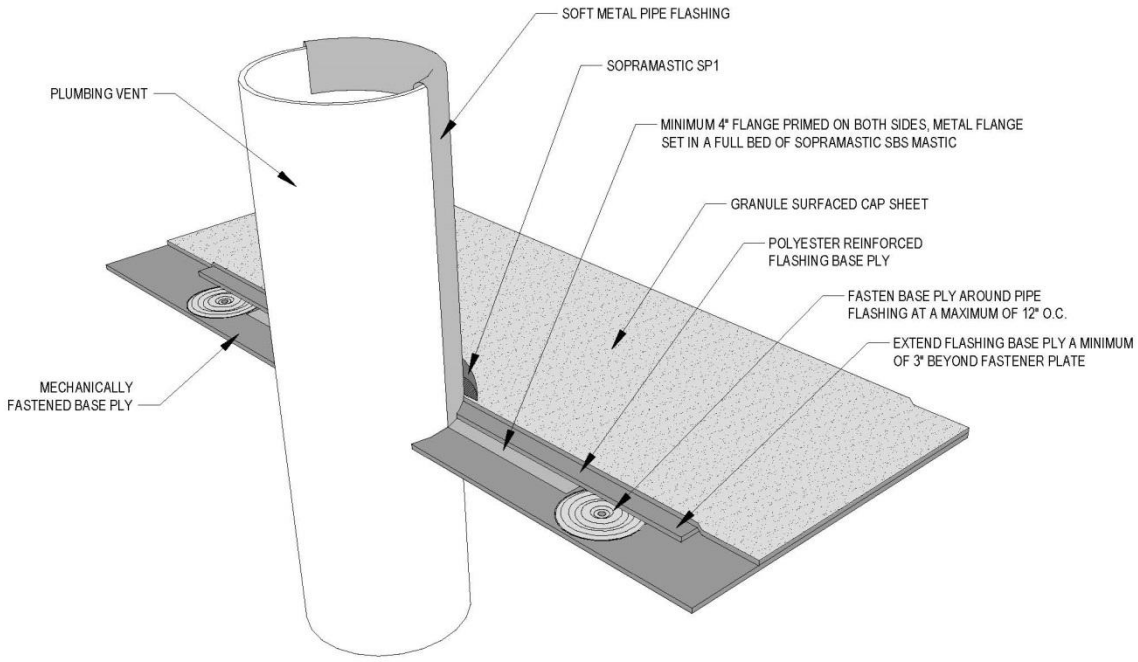


Figure 3.3.1i Mechanically Fastened Base Ply at Plumbing Vent With Granule Surfaced Cap Sheet

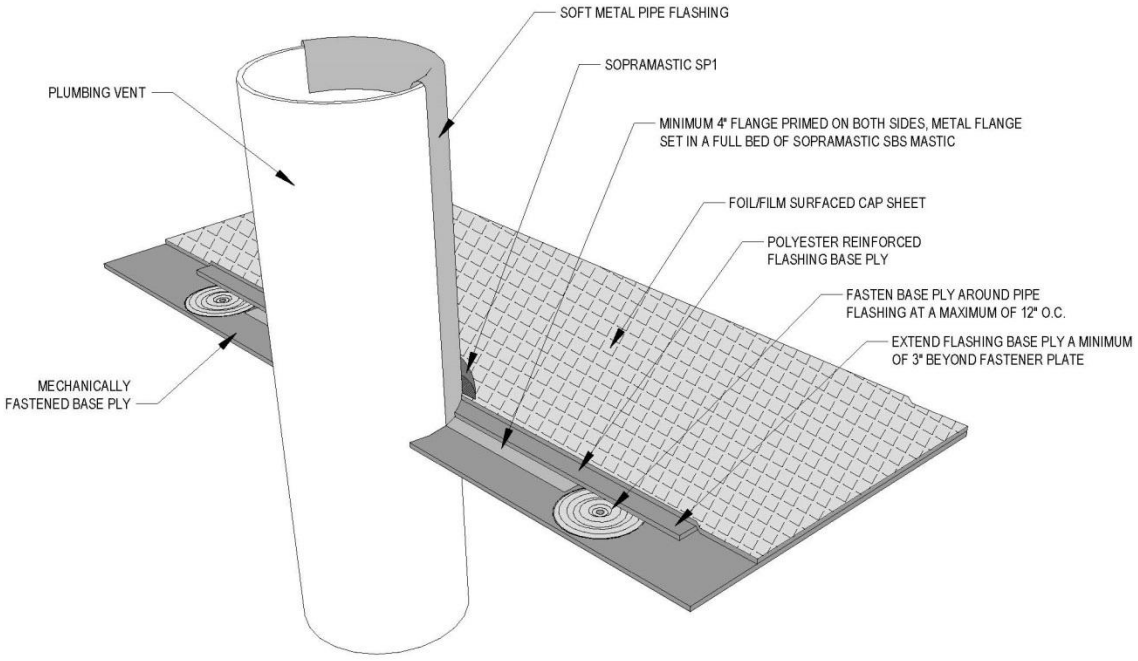


Figure 3.3.1j Mechanically Fastened Base Ply at Plumbing Vent With Foil/Film Surfaced Cap Sheet

3.4 SELF-ADHESIVE SBS MODIFIED BITUMEN MEMBRANES

3.4.1 FULLY ADHERED, SELF-ADHESIVE FIELD PLIES

General:

- SOPREMA® self-adhesive membranes are composed of elastomeric SBS modified bitumen in combination with a high tack self-adhesive layer.
- The underside of the self-adhesive membrane plies is surfaced with protective polyolefin release film that is removed during application. Refer to Table 3.4.1.a. for topside surfacing options.
- Approved substrates are primed using a SOPREMA® self-adhesive primer. Refer to Table 1.2a for primer options.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Ensure all substrates are clean, dry and prepared to receive the specified self-adhesive primer and membrane plies.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply self-adhesive primers and membrane plies.
    - The self-adhesive primer and membrane temperature should be 70°F (21°C) or more at the point of membrane application.
    - To ensure the primer is applied at 70°F (21°C) during cold weather, drums and 5 gallon pails should be stored in heated areas. Drums and 5 gallon pails exposed to cold temperature on the roof should be provided with heaters when necessary to ensure the minimum application temperature is maintained.
    - Store rolls in a heated area to maintain the rolls at 70°F (21°C) during cold weather.
- Ensure all substrates are primed using self-adhesive membrane primer. Refer to Section 1.2.
- Inter-ply priming between ULTRA-STICK™ membranes is prohibited.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer to the clean, prepared substrate.
    - Apply an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.

    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.
    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away "clean" from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
    - ELASTOPHENE® ULTRA-STICK® and SOPRALENE® ULTRA-STICK® should not be left exposed. Cover in the same day with approved SBS membrane. Refer to Table 3.4.1a.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll self-adhesive membrane ply 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 primer and membrane.
- Ensure self-adhesive primer is tacky to-the-touch, but not wet. Primer should not transfer to the finger tips when touched. Do not proceed if primer is wet or becomes fully dry or dirty. If primer becomes fully dry, dirty and loses all tack, re-prime the substrate as necessary to achieve membrane adhesion. Refer to Section 1.2.
- Cut rolls to working lengths and widths to conform to rooftop conditions, and lay sheets onto the roof surface, always working to a selvage edge.
- Ensure membrane side-laps and 6 in end-laps are maintained. Refer to Table 3.4.1b for end-lap preparation.
- Peel the release film from the underside of the membrane. Press and adhere the leading edge of the membrane to the substrate.
- As the release film is removed, use a weighted roller to firmly set the sheet in place. Ensure full contact is made between the self-adhesive ply and the substrate for full adhesion. Use a hand-roller to roll-in vertical flashings and confined areas.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of subsequent ply laps.

Inspection:

- 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.

- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.4.1a Fully Adhered, Self-Adhesive Field Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
ELASTOPHENE® STICK	Base ply	Glass fiber	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a. All hot asphalt-applied base plies. Refer to Table 3.5a.
ELASTOPHENE® FLAM STICK	Base ply	Glass fiber	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRALENE® STICK	Base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a. All hot asphalt-applied base plies. Refer to Table 3.5a.
SOPRALENE® FLAM STICK	Base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
ELASTOPHENE® ULTRA-STICK®	Base Ply	Glass fiber	Permanent film	ELASTOPHENE® ULTRA-STICK®, SOPRALENE® ULTRA-STICK®, ELASTOPHENE® ULTRA-STICK® FR GR, or SOPRALENE® ULTRA-STICK® FR GR
SOPRALENE® ULTRA-STICK®	Base Ply	Non-woven polyester	Permanent film	ELASTOPHENE® ULTRA-STICK®, SOPRALENE® ULTRA-STICK®, ELASTOPHENE® ULTRA-STICK® FR GR, or SOPRALENE® ULTRA-STICK® FR GR
ELASTOPHENE® STICK FR GR	Cap sheet	Glass fiber	Mineral granules	None
ELASTOPHENE® STICK HR FR GR	Cap sheet	Composite	Mineral granules	None
ELASTOPHENE® ULTRA-STICK® FR GR	Cap sheet	Glass fiber	Mineral granules	None
SOPRALENE® ULTRA-STICK® FR GR	Cap sheet	Non-woven polyester	Mineral granules	None

Table 3.4.1b Fully Adhered, Self-Adhesive Field Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
ELASTOPHENE® STICK	Heat welded	None
	Adhered with COLPLY™ or COLPLY™ EF	None
ELASTOPHENE® FLAM STICK	Heat welded	None
SOPRALENE® STICK	Heat welded	None
	Adhered with COLPLY or COLPLY™ EF	None
SOPRALENE® FLAM STICK	Heat welded	None
ELASTOPHENE® ULTRA-STICK®	Self-Adhered	Apply SOPRAMASTIC™ SBS ELASTIC CEMENT at 45 degree dog-ear
SOPRALENE® ULTRA-STICK®	Self-Adhered	Apply SOPRAMASTIC™ SBS ELASTIC CEMENT at 45 degree dog-ear
ELASTOPHENE® STICK FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF	None
ELASTOPHENE® STICK HR FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF	None
ELASTOPHENE® ULTRA-STICK® FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF	None
SOPRALENE® ULTRA-STICK® FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF	None

* Refer to Section 1.1 for priming guidelines.
**Refer to Section 5.3.1.
***Refer to Section 5.3.2.

3.4.2 FULLY ADHERED, SELF-ADHESIVE FLASHING PLIES

General:

- SOPREMA® self-adhesive flashing plies are composed of elastomeric SBS modified bitumen in combination with a high tack self-adhesive layer.
- The underside of the self-adhesive flashing plies is surfaced with protective polyolefin release film that is removed during application. Refer to Table 3.4.2a for topside surfacing options.
- Approved substrates are primed using a self-adhesive primer. Refer to Table 1.2a for primer and substrate options.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and flashing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during flashing application.
- Ensure all flashing substrates are clean, dry and prepared to receive the specified self-adhesive primer and flashing plies.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply self-adhesive primers and flashing plies.
    - The self-adhesive primer and flashing temperature should be 70°F (21°C) or more at the point of flashing application.
    - To ensure the primer is applied at 70°F (21°C) during cold weather, drums and 5 gallon pails should be stored in heated areas. Drums and 5 gallon pails exposed to cold temperature on the roof should be provided with heaters when necessary to ensure the minimum application temperature is maintained.
    - Store rolls in a heated area to maintain the rolls at 70°F (21°C) during cold weather.
- Ensure all substrates are primed using self-adhesive membrane primer. Refer to Section 1.2.
- Adhesion/peel tests are encouraged for concrete, masonry and other substrates where surface conditions may vary. Conduct 180 degree peel tests as follows:
    - Choose three (3) or more representative substrate areas to examine.
    - Clean and prepare the substrate as specified, allow to dry.
    - Cut 2 in (5.08 cm) wide by 12 in (30.48 cm) long strips of the specified membrane.
    - Apply the specified primer to the clean, prepared substrate.
    - Apply an 8 to 9 in (20.32 to 22.86 cm) long section of the 12 in (30.48 cm) strip, and allow a 3 to 4 in (7.62 to 10.16 cm) long portion to remain un-adhered in order to grip and pull.
    - Grip the un-adhered portion of the sample and pull 180 degrees and parallel with the surface. Use a small scale to measure results in pounds of resistance where quantitative results are desired.
    - Results should demonstrate strong resistance to peel. A strong bond will result in significant residual materials remaining adhered to the substrate, or part of the substrate itself may be removed along with the sample.

    - Samples that peel away easily from the substrate may indicate further preparation is needed, or alternate materials and/or application methods may be necessary.
    - Where quantitative measurements of peel resistance are desired, the peel resistance should exceed 2 lbf per lieneal inch of sample width (e.g. a 2 in wide sample should exceed 4 lbf and the sample should not peel away "clean" from the substrate.
    - Take photos or videos of the samples and the substrate to record conditions.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- SOPRALENE® ULTRA-STICK® should not be left exposed. Cover in the same day with approved SBS membrane. Refer to Table 3.4.2a.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll the self-adhesive plies 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 in order 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 not aligned. Shingle the flashing ply laps to prevent back-water laps.
- Install cant strips at transitions where required.
- Ensure the correct membrane and flashing ply sequencing is installed 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 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.
- 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.
    - Using a chalk line, mark a line on the membrane cap sheet a minimum of 1 in beyond the underlying flashing base ply. Prepare the roof membrane cap sheet surfacing. Refer to Table 3.4.2b for end-lap preparation.
- FLASHING CAP SHEET:
    - Install the flashing cap sheet starting at the top leading edge on the vertical substrate, down over the cant and onto the roof surface 1 in beyond the underlying flashing base ply.
    - 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 of plies.
    - Ensure membrane side-laps and 6 in end-laps are maintained. Refer to Table 3.4.2b for end-lap preparation.
- Apply SOPRAMASTIC™ SP1 or SOPRAMASTIC™ ALU sealant 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 SOPRAMASTIC™ SP1 sealant or SOPRAMASTIC™ SBS ELASTIC CEMENT.
- ALSAN® RS and ALSAN® FLASHING Liquid-applied, reinforced flashing systems may be installed as an alternate to SBS flashing membranes. Refer to Section 4, *LIQUID-APPLIED FLASHINGS*.
- Contact SOPREMA® for other flashing options.

Inspection:

- Each day, physically inspect all side and end-laps, and ensure the flashings are 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.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal membrane and flashing terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.4.2a Fully Adhered, Self-Adhesive Flashing Plies

Name	Application	Reinforcement	Top Surfacing	Overlying SBS Flashing Ply Options
SOPRALENE® STICK	Flashing base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied flashing plies. Refer to Table 3.2.2a. All fully adhered, self-adhesive flashing plies. Refer to Table 3.4.2a.
SOPRALENE® FLAM STICK	Flashing base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS flashing plies. Refer to Table 3.1.2a.
SOPRALENE® ULTRA-STICK®	Flashing base ply	Non-woven polyester	Permanent film	SOPRALENE® ULTRA-STICK™ or SOPRALENE® ULTRA-STICK™ FR GR
SOPRALENE® ULTRA-STICK™ FR GR	Flashing cap sheet	Non-woven polyester	Mineral granules	None

Table 3.4.2b Fully Adhered, Self-Adhesive Flashing Plies End-Lap Preparation		
Flashing Ply	**End Lap Application Method**	**Preparation**
SOPRALENE® STICK	Heat welded	None
	Adhered with COLPLY™ FLASHING CEMENT or COLPLY™ EF FLASHING CEMENT	None
SOPRALENE® FLAM STICK	Heat welded	None
SOPRALENE® ULTRA-STICK®	Heat welded	Apply SOPRAMASTIC™ SBS ELASTIC CEMENT at 45 degree dog-ear
ELASTOPHENE® STICK HR FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™ FLASHING CEMENT	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF FLASHING CEMENT	None
SOPRALENE® STICK HR FR GR	Heat welded	Embed surfacing granules**
	Adhered with COLPLY™ FLASHING CEMENT	Prime with ELASTOCOL™ 500* or ELASTOCOL™ 350*
		None
	Adhered with COLPLY™ EF FLASHING CEMENT	None

* Refer to Section 1.1 for priming guidelines.
**Refer to Section 5.3.1.
***Refer to Section 5.3.2.

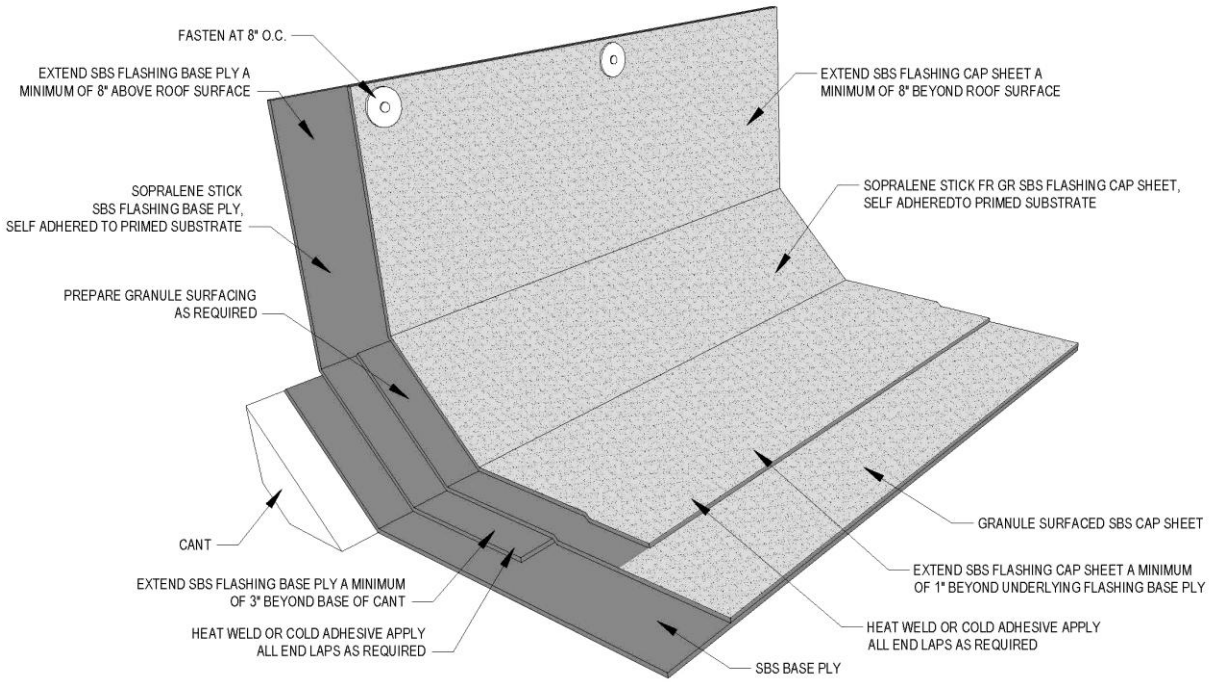


Figure 3.4.2a Fully Adhered, Self-Adhesive Flashing Membrane on Granule Surfaced Cap Sheet

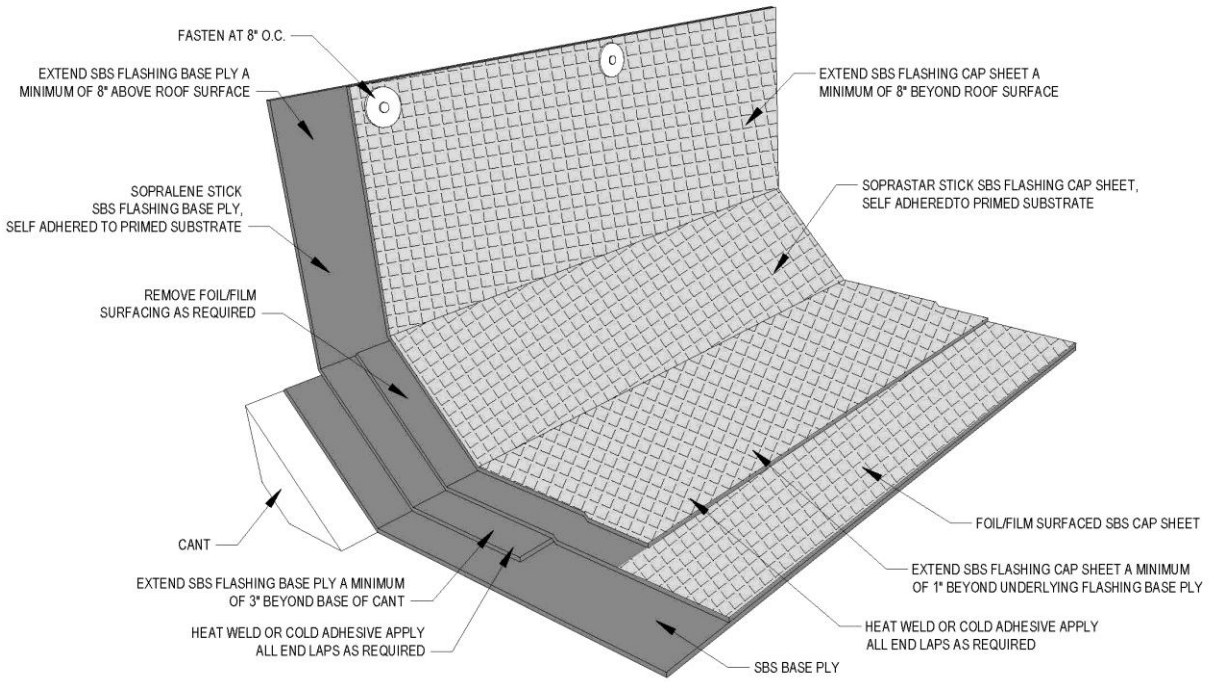


Figure 3.4.2b Fully Adhered, Self-Adhesive Flashing Membrane on Foil/Film Surfaced Cap Sheet

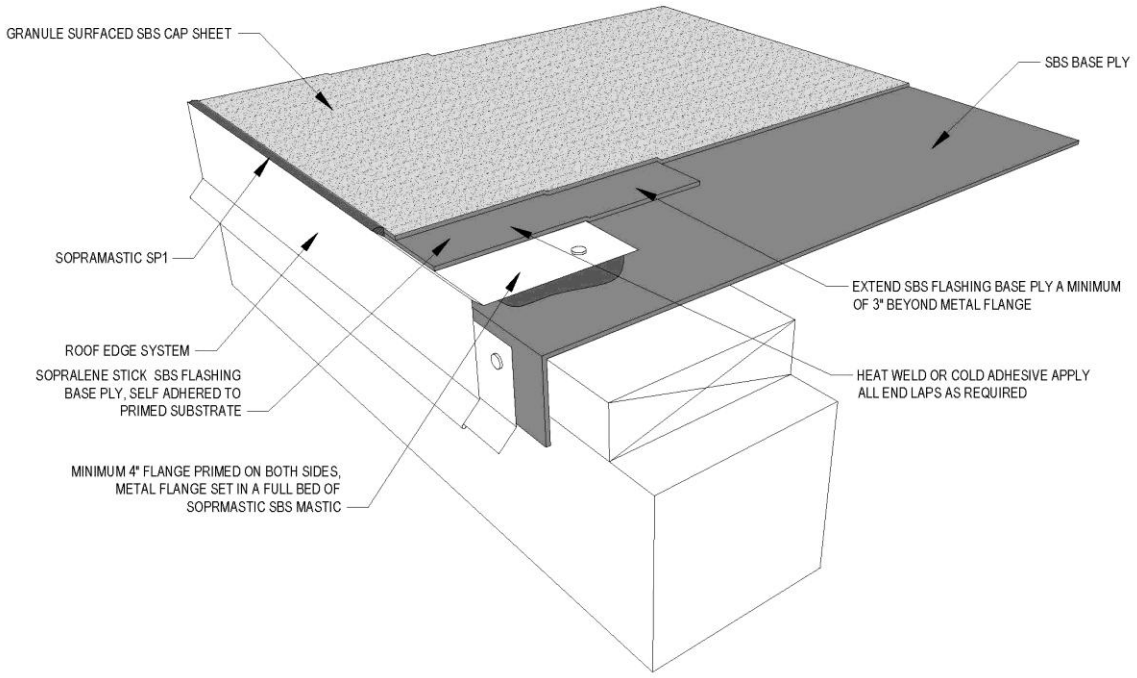


Figure 3.4.2c Fully Adhered, Self-Adhesive Edge Flashing With Granule Surfaced Cap Sheet

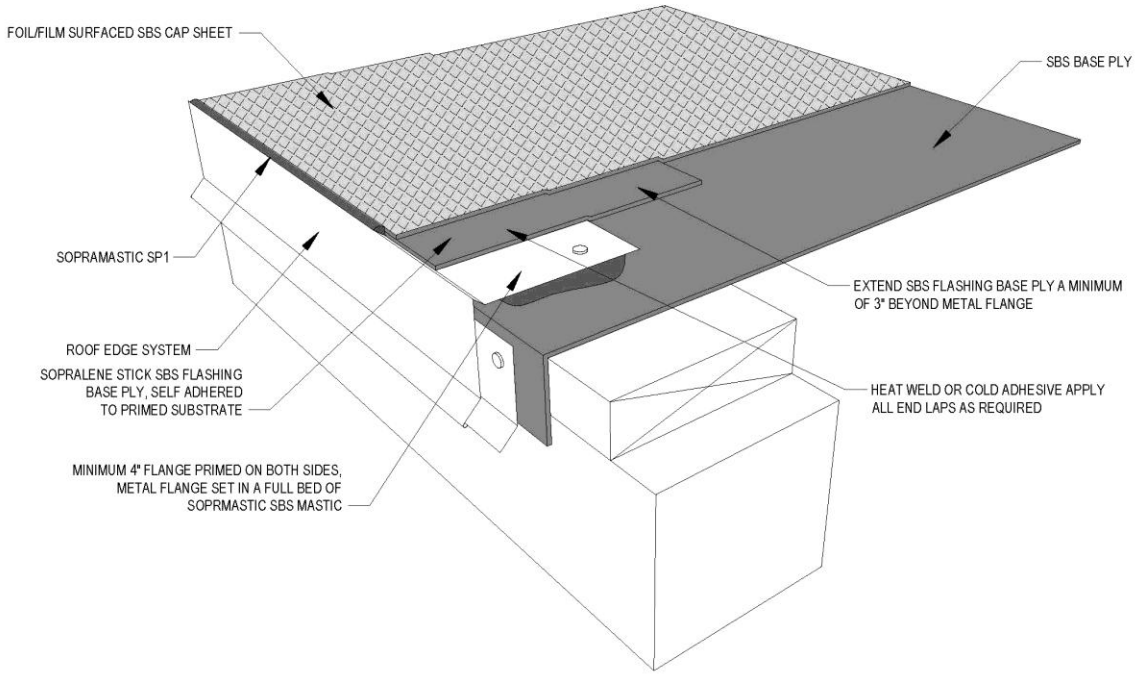


Figure 3.4.2d Fully Adhered, Self-Adhesive Edge Flashing With Foil/Film Surfaced Cap Sheet

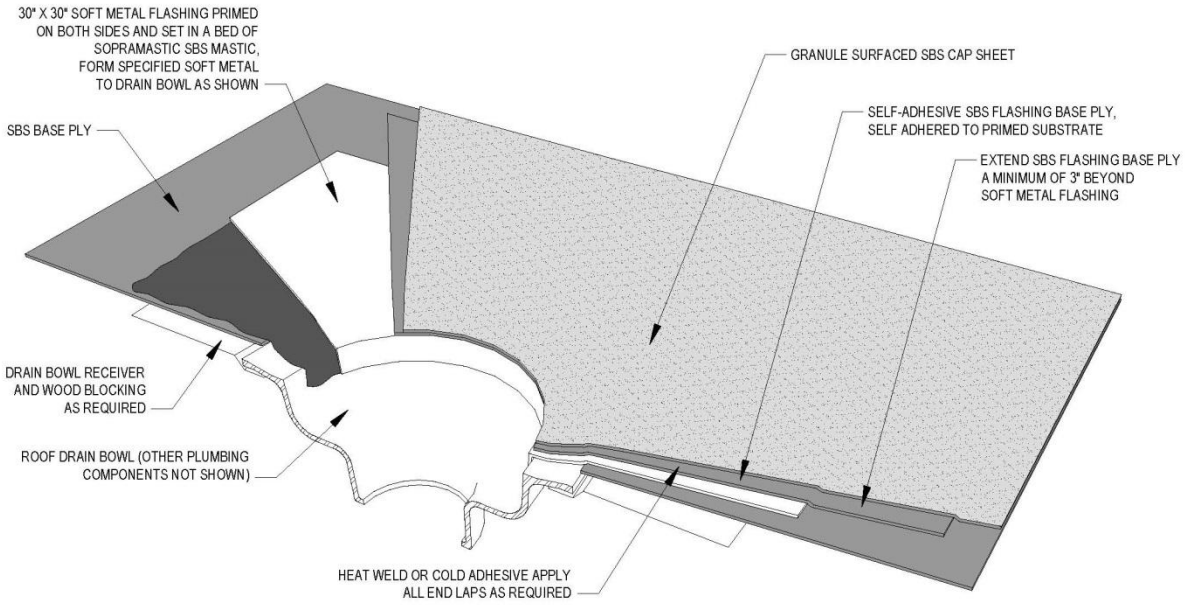


Figure 3.4.2e Fully Adhered, Self-Adhesive Roof Drain Flashing With Granular Surfaced Cap Sheet

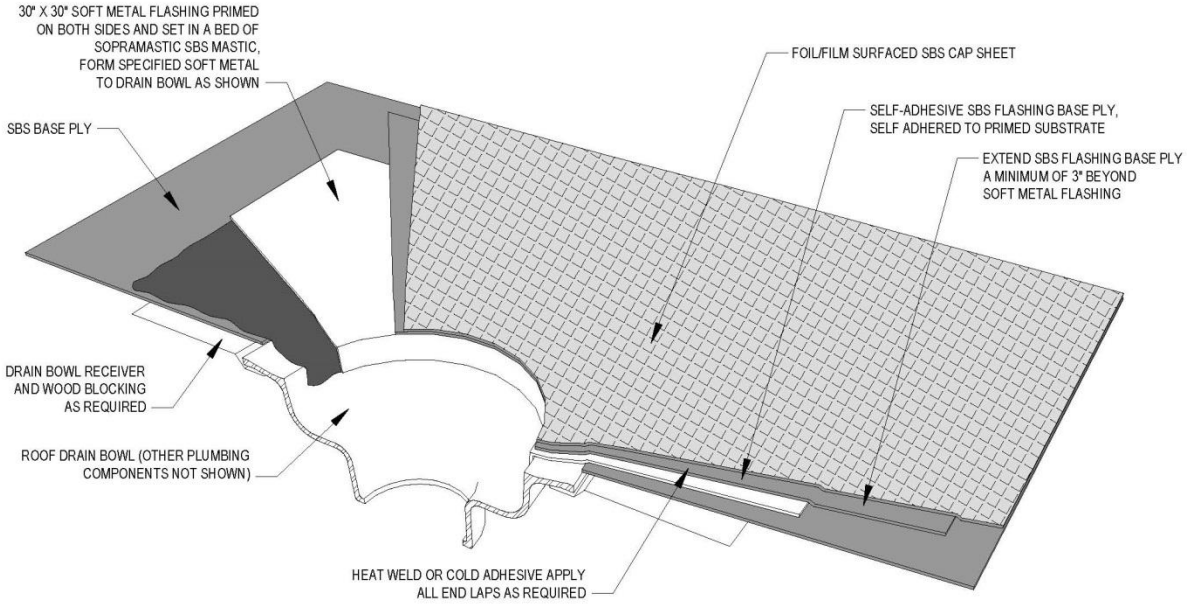


Figure 3.4.2f Fully Adhered, Self-Adhesive Roof Drain Flashing With Foil/Film Surfaced Cap Sheet

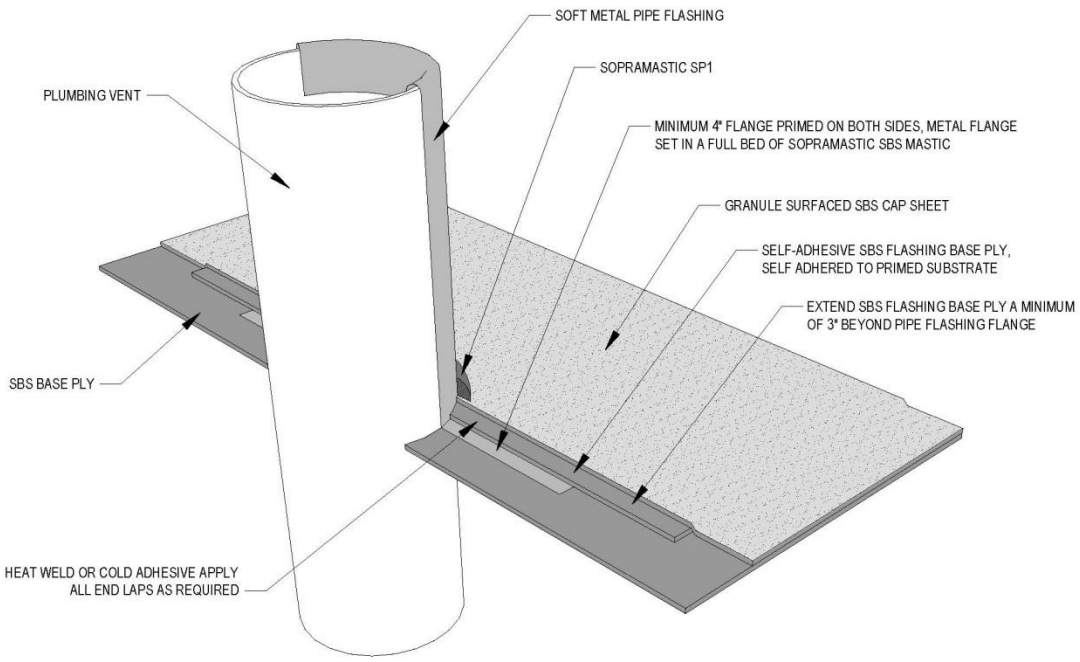


Figure 3.4.2g Fully Adhered, Self-Adhesive Plumbing Vent Flashing With Granule Surfaced Cap Sheet

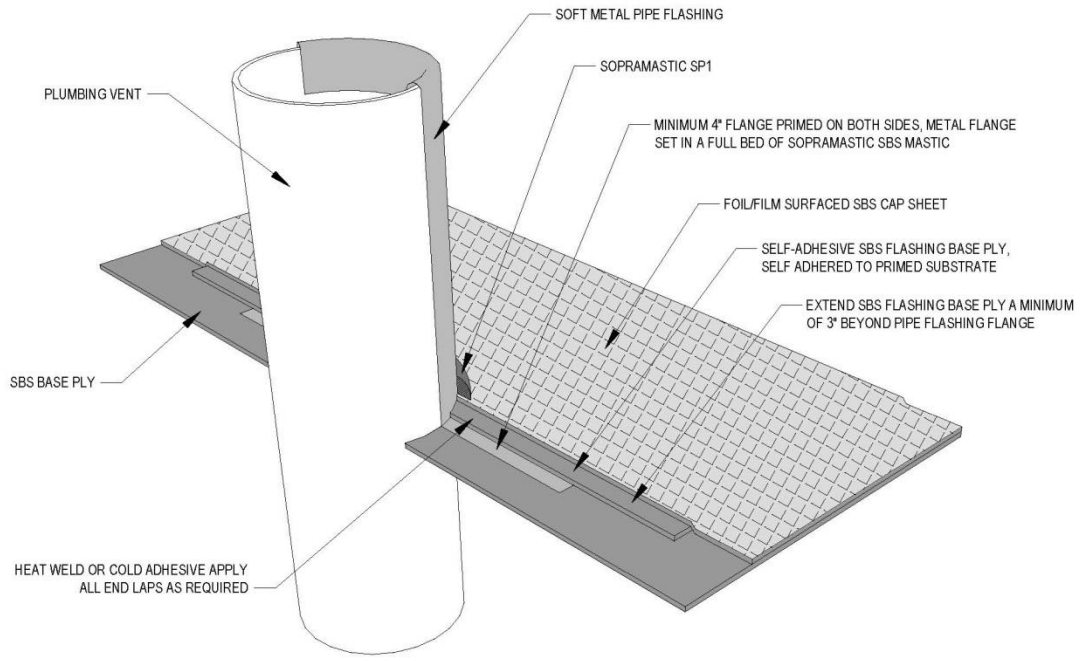


Figure 3.4.2h Fully Adhered, Self-Adhesive Plumbing Vent Flashing With Foil/Film Surfaced Cap Sheet

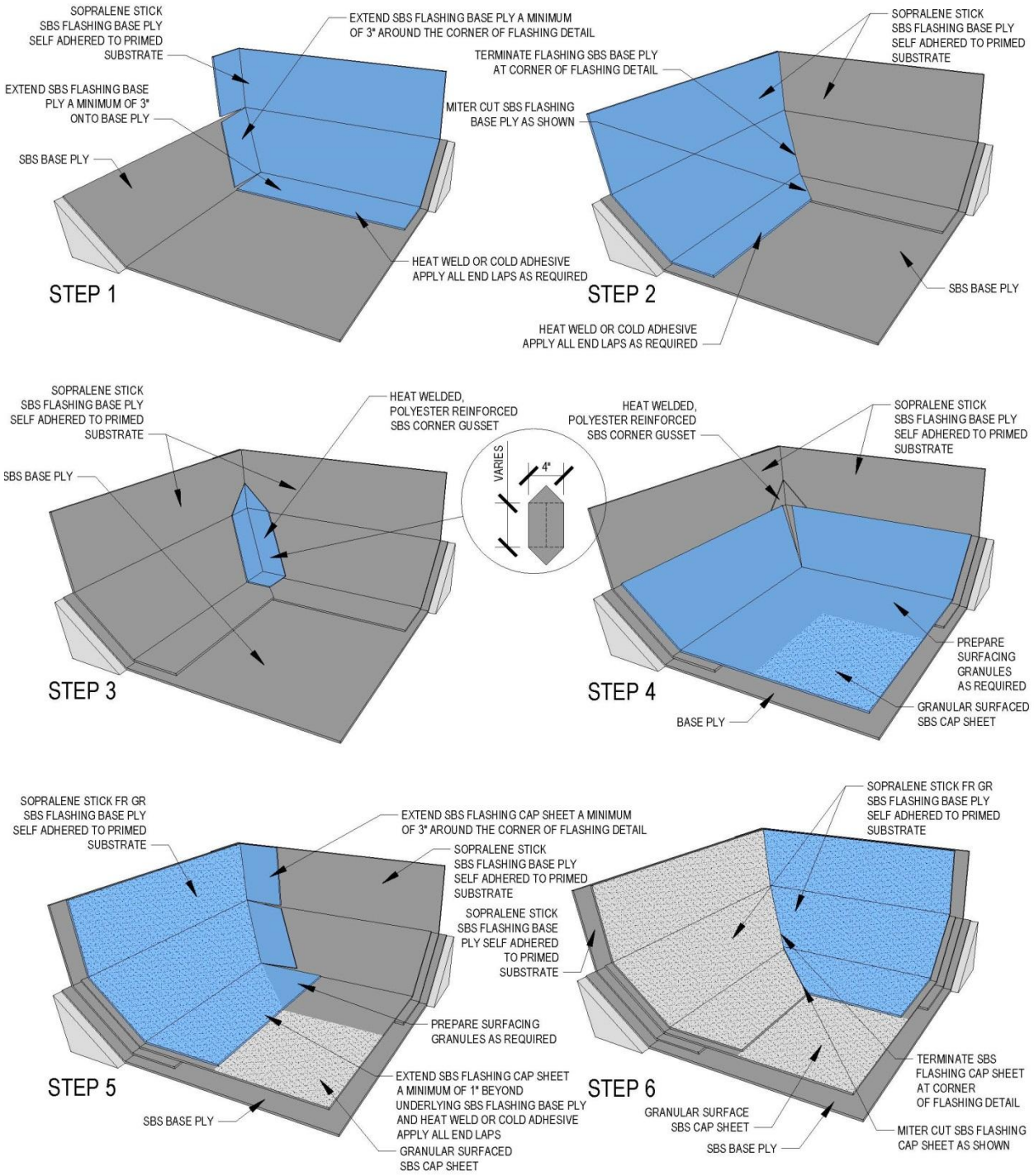


Figure 3.4.2i Fully Adhered, Self-Adhesive Inside Corner Flashing With Granule Surfaced Cap Sheet With Cant

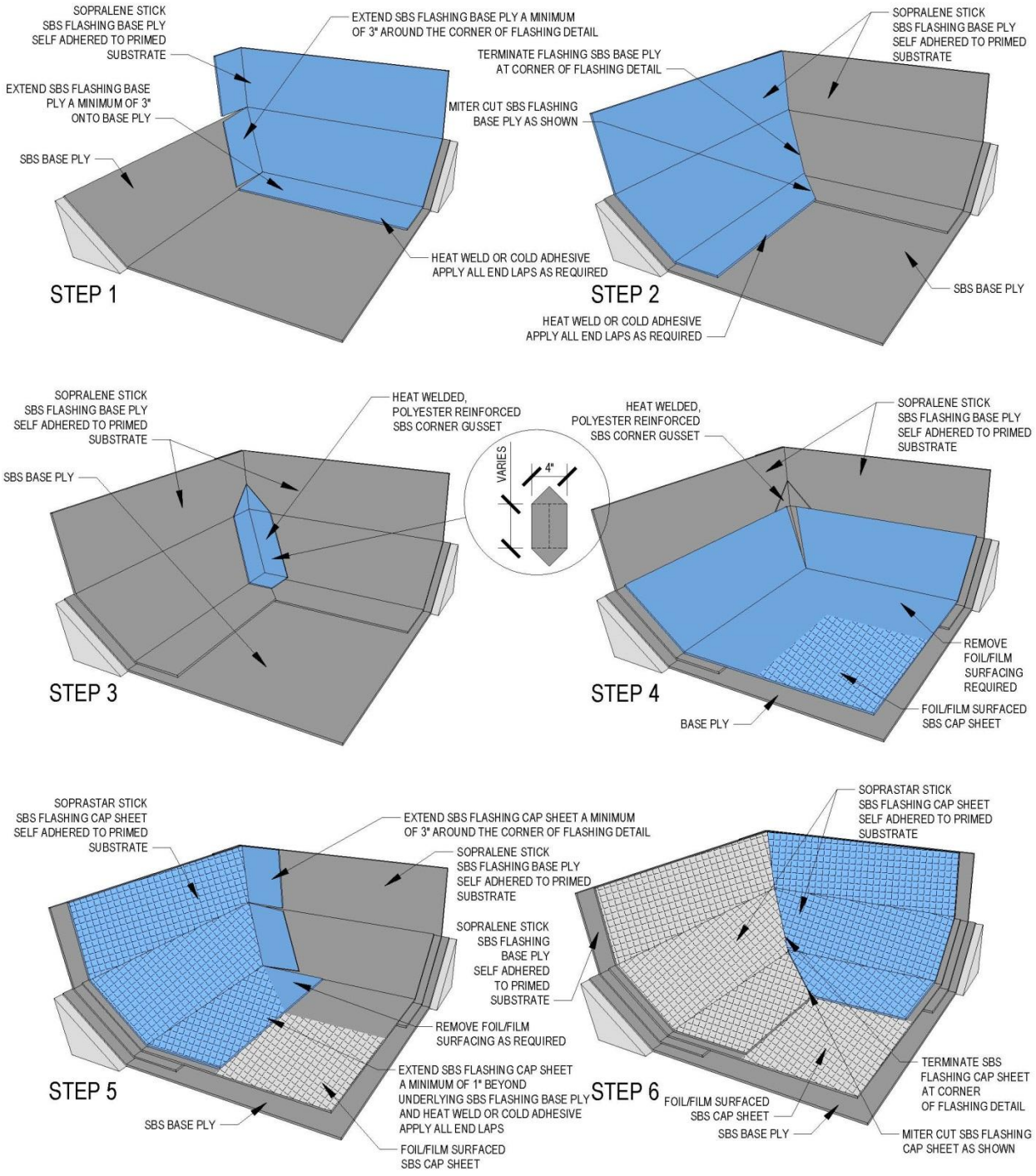


Figure 3.4.2j Fully Adhered, Self-Adhesive Inside Corner Flashing With Foil/Film Surfaced Cap Sheet With Cant

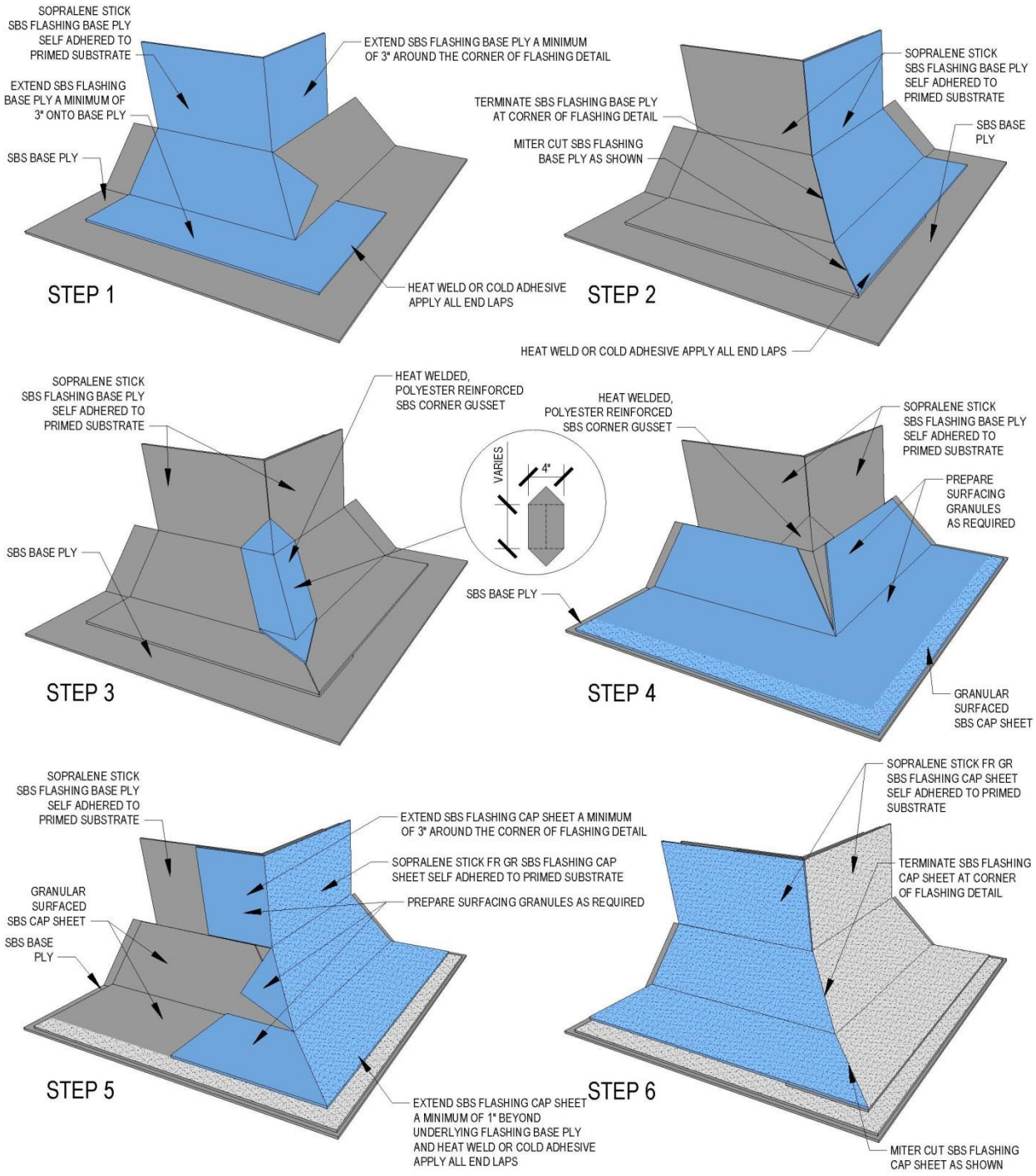


Figure 3.4.2k Fully Adhered, Self-Adhesive Outside Corner Flashing With Granule Surfaced Cap Sheet With Cant

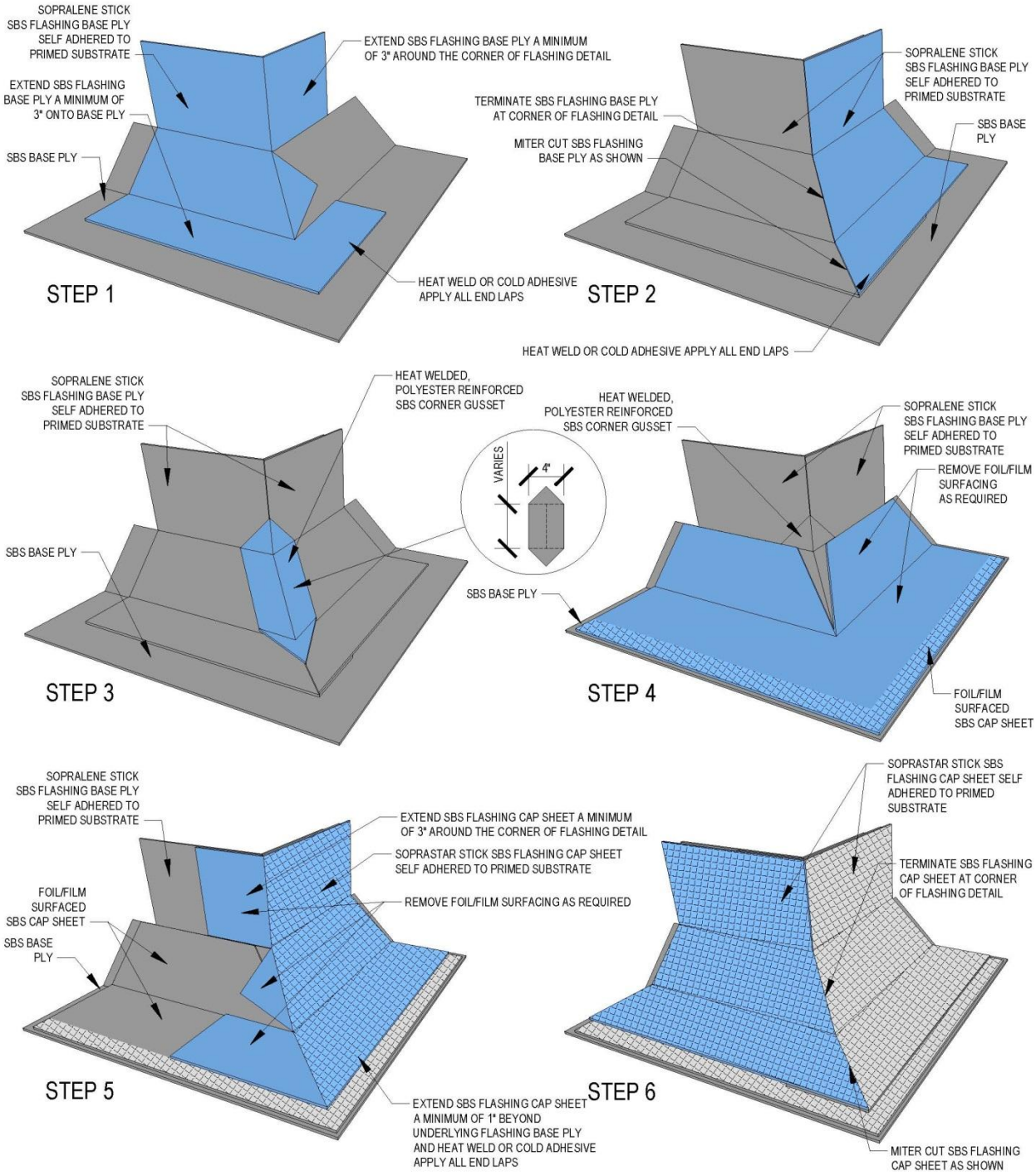


Figure 3.4.2l Fully Adhered, Self-Adhesive Outside Corner Flashing With Foil/Film Surfaced Cap Sheet With Cant

3.5 HOT ASPHALT-APPLIED SBS MODIFIED BITUMEN FIELD BASE PLIES

General:

- SOPREMA® hot asphalt-applied SBS modified bitumen base plies may be installed over SOPRABOARD™ or other approved roof cover boards and other approved roofing substrates.
- Heat welded or cold adhesive-applied SBS modified bitumen cap sheets are recommended. Hot asphalt-applied cap sheets options are also available.
- The underside of hot asphalt-applied SBS plies are sand surfaced. Refer to Table 3.5a for top surfacings.
- Contact SOPREMA® for review of ASTM D312 Type IV mopping asphalt used for SOPREMA® SBS modified bitumen membrane plies.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply hot asphalt and membrane plies.
    - Ice and frost may be difficult to detect on concrete and other substrates. During extended periods of cold weather when the substrate is exposed to freezing conditions, the substrate should be heated as necessary to eliminate ice crystals and ensure the substrate is dry. Examine adhesion closely during cold weather.
    - Take all necessary measures, and monitor all conditions, to ensure the specified asphalt temperature is no less than the equiviscous temperature (EVT) at the point of contact with the membrane ply as it is unrolled into the hot asphalt.
    - Store rolls in a heated area to maintain the rolls at 70°F (21°C) during cold weather.
- Ensure all substrates are smooth, free of dust and debris, dry and acceptable for installation of asphalt-applied sheets. Ensure substrates are even at all substrate transitions to prevent membrane voids. Ensure substrates are primed where required using ELASTOCOL™ 350 or ELASTOCOL™ 500 primer. Refer to Section 1.1.
- Base ply exposure and phased applications:
    - Ensure conditions are satisfactory to install subsequent base ply or cap sheet when the base ply is installed and left exposed to UV, dust, debris, traffic and other extreme conditions for an extended period of time. Due to the wide range of environmental conditions and project related exposures the effects from these exposures will vary.
    - Adhesion/peel tests are encouraged to examine adhesion when conditions vary.
    - Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.
- Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.
- Refer to mopping asphalt supplier's published values for softening point, 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-applied built-up roofing is 3/4:12. Refer to Section 5.2.
- Remove all roll packaging tape prior to installation.

Application:

- Before beginning the installation, 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 unrolled 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 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 in order for the plies to be unrolled into the hot asphalt while ensuring the specified side and end-laps are maintained.
- Apply Type IV asphalt within 400 to 475°F (204 to 246°C) at the point of contact with the ply as the ply is unrolled into the hot asphalt. The mopping asphalt should be within +/- 25°F (14°C) of the published EVT and as required to obtain a nominal 23 to 25 pounds per square interply coverage rate. Refer to the EVT provided by the asphalt supplier.
- The asphalt application temperature should be monitored and recorded during application to ensure application temperature remains as published herein.
- 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.
- At 6 in end-laps, cut a 45 degree dog-ear away from the 3 in selvage edge at all T-joints. Refer to Table 3.5b for end-lap preparation.
- 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.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 inches of base ply laps.
- Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 12 in of subsequent ply laps.

Inspection:

- Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight.
- Where necessary, use a torch, hot-air welder or SBS mastic to ensure all laps are fully sealed.
- Inspect the installation each day to ensure the plies are fully adhered.
- Each day, repair all voids, wrinkles, open laps, blisters and all other deficiencies before proceeding.
- Temporary night seals are required to seal flashing end terminations watertight. Temporary night seals must be removed upon resuming the installation.
- Base ply exposure and phased applications:
    - Due to the wide range of environmental conditions and project related exposures, the effects from exposures vary.
    - When the base ply is left exposed for an extended period to UV, dust, debris, traffic and other extreme conditions, thoroughly examine the base ply to ensure conditions are satisfactory to install subsequent roofing materials.

- Refer to product data sheets and contact SOPREMA® technical services for review of project conditions.

Table 3.5a Hot Asphalt Applied Field Base Plies				
Name	**Application**	**Reinforcement**	**Top Surfacing**	**Overlying SBS Field Ply Options**
ELASTOPHENE® SANDED 2.2, ELASTOPHENE® SANDED 3.0	Base ply	Glass fiber	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a. All hot asphalt-applied base plies. Refer to Table 3.5a.
ELASTOPHENE® HR SANDED 2.2, ELASTOPHENE® HR SANDED 3.0	Base ply	Glass grid	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a. All hot asphalt-applied base plies. Refer to Table 3.5a.
SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Base ply	Non-woven polyester	Sanded	All fully adhered, cold adhesive-applied field plies. Refer to Table 3.2.1a. All fully adhered, self-adhesive field plies. Refer to Table 3.4.1a. All hot asphalt-applied base plies. Refer to Table 3.5a.
ELASTOPHENE® PS 2.2, ELASTOPHENE® PS 3.0	Base ply	Glass fiber	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.
SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Base ply	Non-woven polyester	Plastic burn-off film	All fully adhered, heat welded SBS field plies. Refer to Table 3.1.1a.

Table 3.5b Hot Asphalt Applied Field Base Plies End-Lap Preparation		
Field Ply	**End Lap Application Method**	**Preparation**
ELASTOPHENE® SANDED 2.2, ELASTOPHENE® SANDED 3.0, ELASTOPHENE® HR SANDED 2.2, ELASTOPHENE® HR SANDED 3.0, SOPRALENE® 180 SANDED 2.2, SOPRALENE® 180 SANDED, SOPRALENE® 250 SANDED	Heat welded	None
	Adhered with hot asphalt, COLPLY™, or COLPLY™ EF	None
ELASTOPHENE® PS 2.2, ELASTOPHENE® PS 3.0, SOPRALENE® 180 PS 2.2, SOPRALENE® 180 PS 3.0	Heat welded	None

4 LIQUID-APPLIED FLASHINGS

4.1 POLYMETHYL METHACRYLATE (PMMA)/POLYMETHACRYLATE (PMA) LIQUID-APPLIED FLASHING FOR SBS MODIFIED BITUMEN ROOFING

General:

- SOPREMA® offers ALSAN® RS 230 FLASH or ALSAN® RS 260 LO FLASH liquid-applied, reinforced flashing systems. These systems are recommended for SBS modified bitumen membranes to form a waterproof seal at roof transitions, terminations and penuniletrations. Refer to Figures 4.1a through 4.1p.
- ALSAN® RS liquid-applied flashing is recommended for roof conditions such as roof drains, scuppers, and other areas where water remains on the roof surface for 48 hours or more after precipitation.
- ALSAN® RS liquid-applied flashing systems are suitable for heat-welded, self-adhesive-applied, hot asphalt-applied and mechanically fastened SBS modified bitumen membrane plies. COLPLY™ EF ADHESIVE and COLPLY™ EF FLASHING CEMENT are recommended for cold adhesive-applied membranes. Refer to Table 4.1a.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to ALSAN® RS detail drawings, product data sheets and published guidelines for additional installation requirements.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Refer to ALSAN® RS product data sheets and published guidelines for application temperatures.
- Ensure all substrates are clean, dry and prepared to receive ALSAN® RS. Adhesion/peel tests are encouraged for concrete, masonry and for other substrates where surface conditions may vary. Prime substrates where required. Refer to Table 4.1a.
- Remove foil/film surfacing prior to installing the ALSAN® RS roof system flashings on SOPRALAST™ cap sheets. Refer to Figures 4.1b, 4.1d, 4.1f, 4.1h, 4.1j, 4.1l, 4.1n, and 4.1p. Refer to Section 5.3.2 for removal of foil/film surfacing.

Application:

- Pre-cut ALSAN® RS FLEECE polyester reinforcement to conform to roof terminations, transitions and penetrations. Cut reinforcement to ensure a minimum 2 in overlap of fleece at side-laps and end-laps. Ensure the liquid-applied flashing membrane is fully reinforced.
- Prime substrates where required. Refer to Section 1.3 and Table 4.1a.
- Apply the base coat of catalyzed ALSAN® RS flash resin onto the substrate using a brush or roller, working the liquid resin into the surface for complete coverage and full adhesion.
- Immediately apply the ALSAN® RS FLEECE reinforcing into the wet base coat of resin. Using a brush or roller, work the ALSAN® RS FLEECE reinforcement into the wet resin while applying the second coat of

catalyzed ALSAN® RS flash resin to fully encapsulate the fleece. Extend the ALSAN® RS flash resin a maximum of 1/4 in beyond the ALSAN® RS FLEECE.

Inspection:

- Each day examine completed liquid-applied flashing and repair all deficiencies.

Table 4.1a ALSAN® RS Flashing Substrates	
Substrate	**Primer**
Prepared structural concrete	ALSAN® RS 276 or ALSAN® RS 222
Prepared masonry	ALSAN® RS 276 or ALSAN® RS 222
Conditioned, un-treated wood	ALSAN® RS 276 or ALSAN® RS 222
Approved gypsum roof boards	ALSAN® RS 276 or ALSAN® RS 222
Approved cement roof boards	ALSAN® RS 276 or ALSAN® RS 222
Prepared metal	Optional ALSAN® RS METAL PRIMER
Sand-surfaced SBS membrane heat welded, self-adhesive and hot asphalt applied.	No primer required
Sand-surfaced SBS membrane adhered with COLPLY™ EF	ALSAN® RS 222 on all exposed COLPLY™ EF
Sand-surfaced SBS membrane adhered with COLPLY™	Not recommended for PMMA/PMA flashings.
Granule-surfaced SBS membrane heat welded, self-adhesive and hot asphalt applied	No primer required
Granule-surfaced SBS membrane adhered with COLPLY™ EF	ALSAN® RS 222 on all exposed COLPLY™ EF
Granule-surfaced SBS membrane adhered with COLPLY™	Not recommended for PMMA/PMA flashings.
Exposed, new oxidized mopping asphalt	ALSAN® RS 222

*ALSAN® RS should not be applied over exposed mastics, cements, solvent-based adhesives or SOPRAMASTIC™ SP1 sealant.

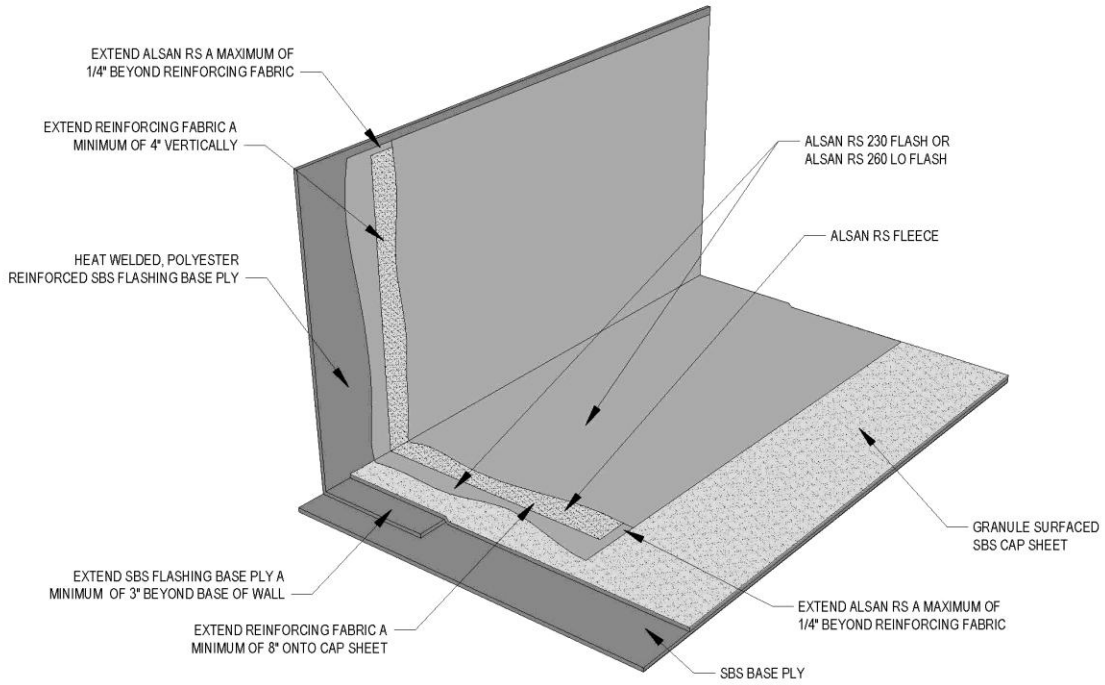


Figure 4.1a ALSAN® RS Wall/Curb Flashing with SBS Flashing Base Ply on Granular Surfaced Cap Sheet Without Cant

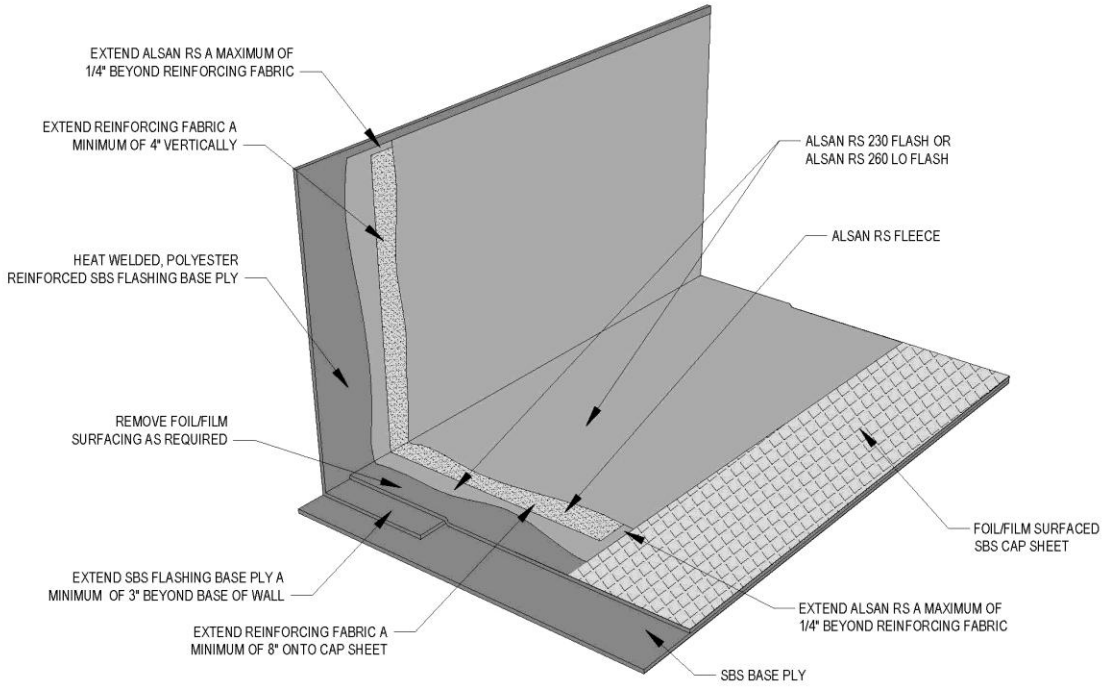


Figure 4.1b ALSAN® RS Wall/Curb Flashing with SBS Flashing Base Ply on Foil/Film Surfaced Cap Sheet Without Cant

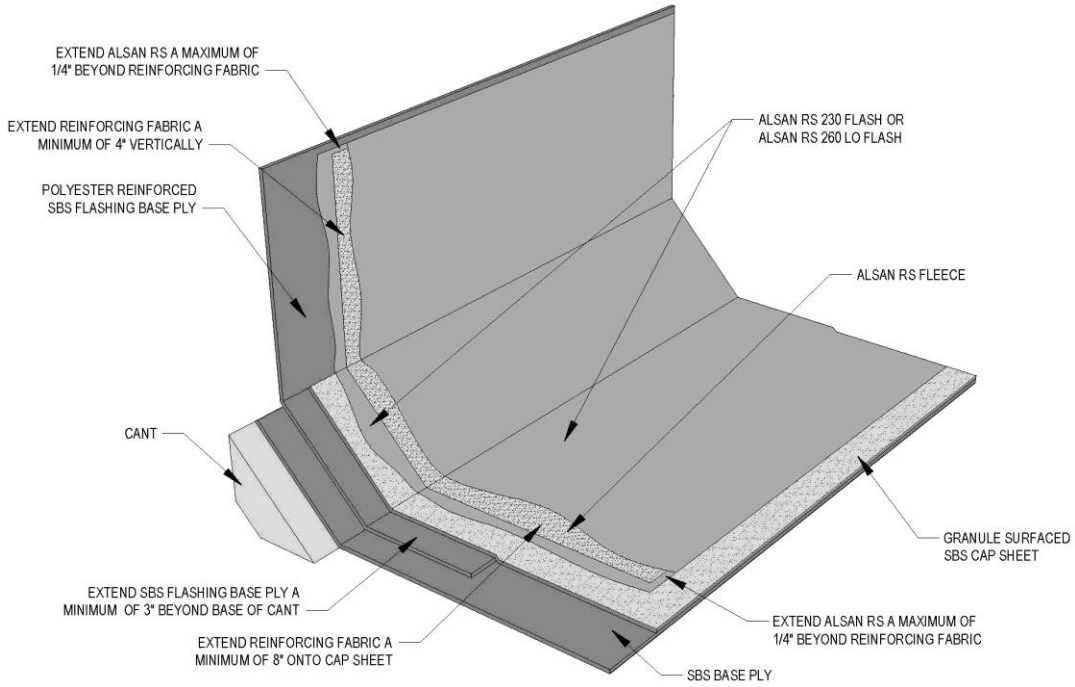


Figure 4.1c ALSAN® RS Wall/Curb Flashing with SBS Flashing Base Ply on Granular Surfaced Cap Sheet With Cant

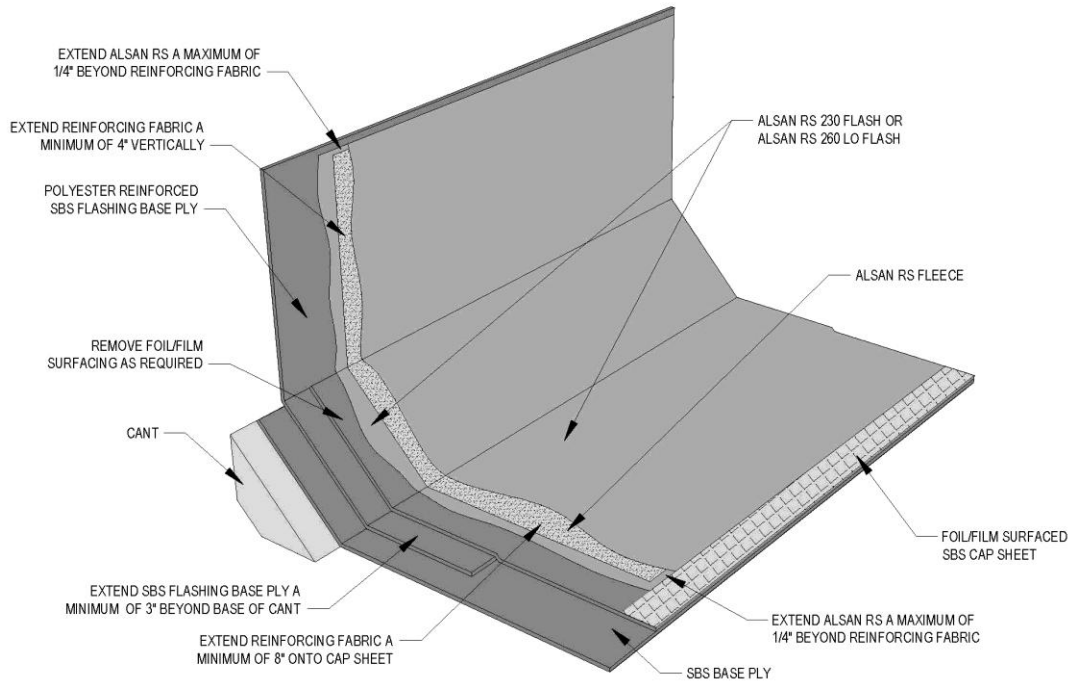


Figure 4.1d ALSAN® RS Wall/Curb Flashing with SBS Flashing Base Ply on Foil/Film Surfaced Cap Sheet With Cant

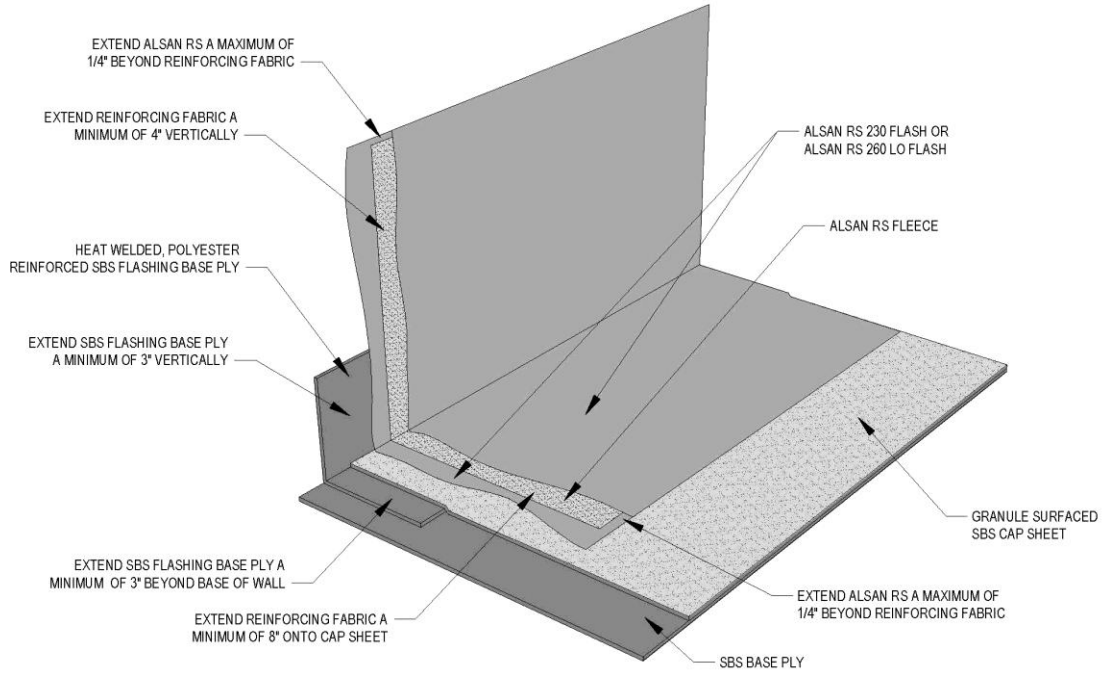


Figure 4.1e ALSAN® RS Wall/Curb Flashing with SBS Reinforcement on Granular Surfaced Cap Sheet Without Cant

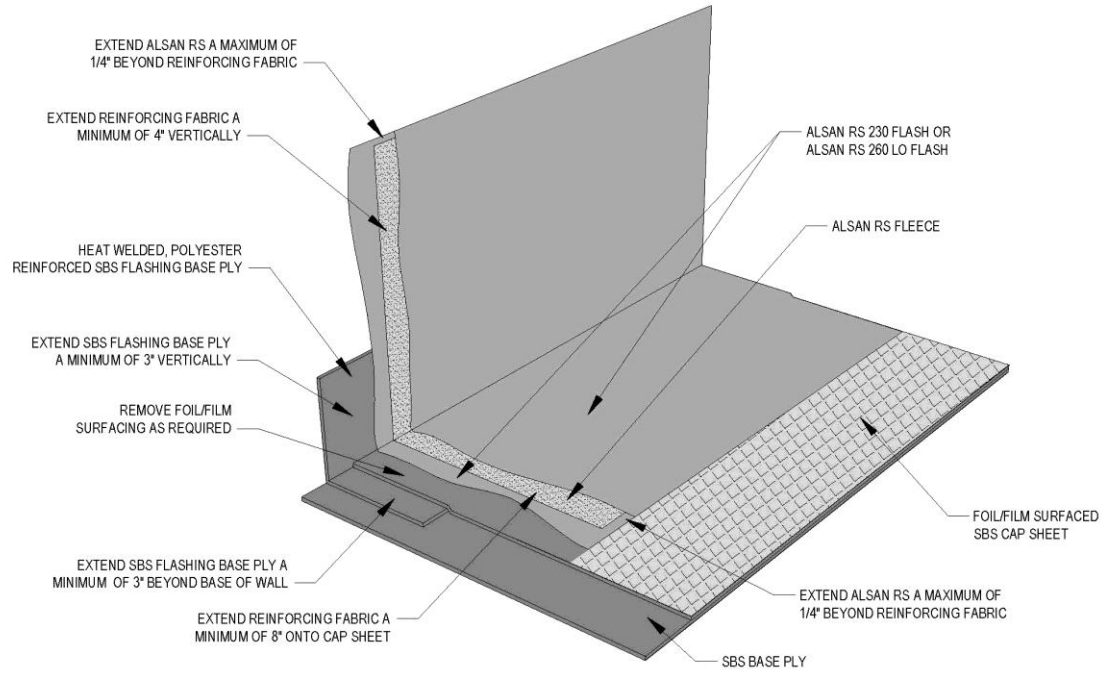


Figure 4.1f ALSAN® RS Wall/Curb Flashing with SBS Reinforcement on Foil/Film Surfaced Cap Sheet Without Cant

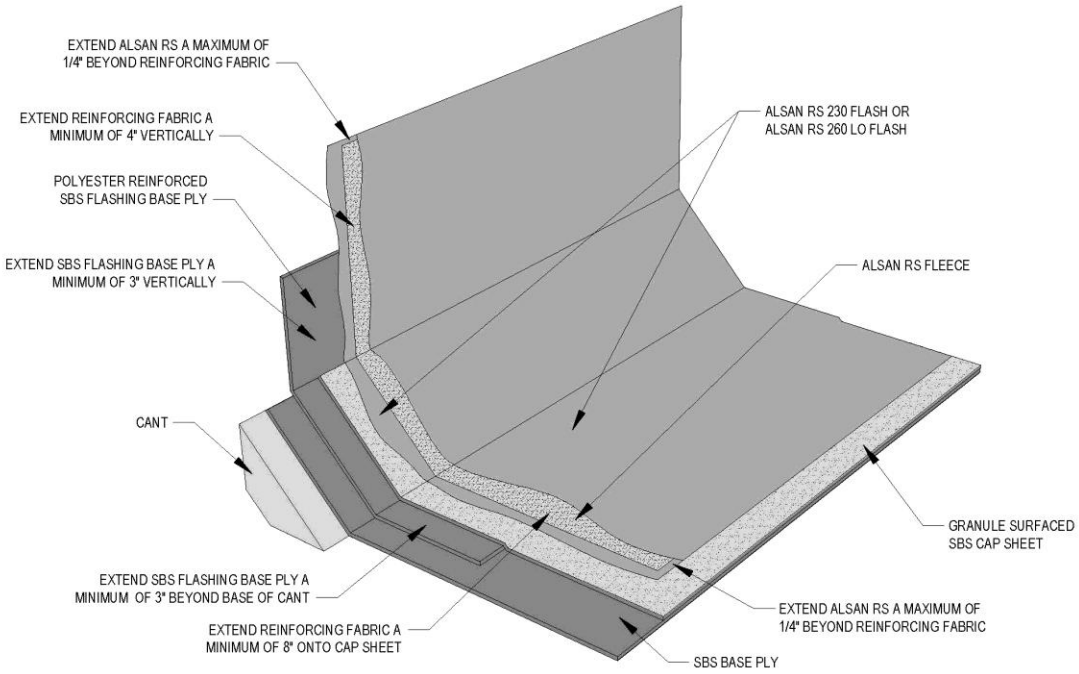


Figure 4.1g ALSAN® RS Wall/Curb Flashing with SBS Reinforcement on Granular Surfaced Cap Sheet With Cant

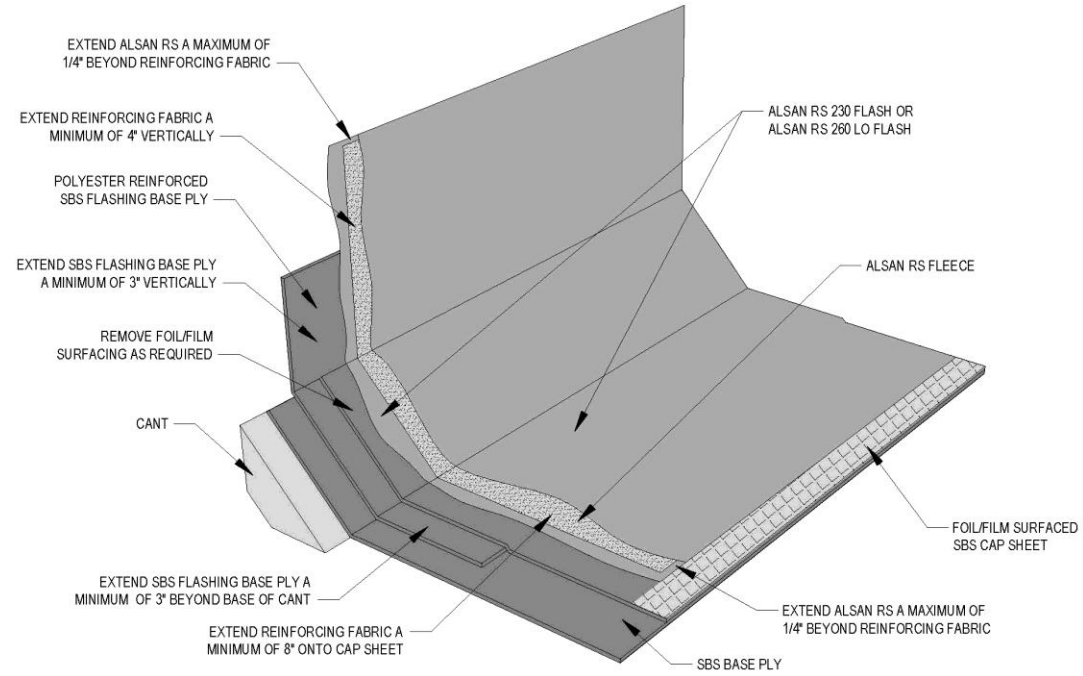


Figure 4.1h ALSAN® RS Wall/Curb Flashing with SBS Reinforcement on Foil/Film Surfaced Cap Sheet With Cant

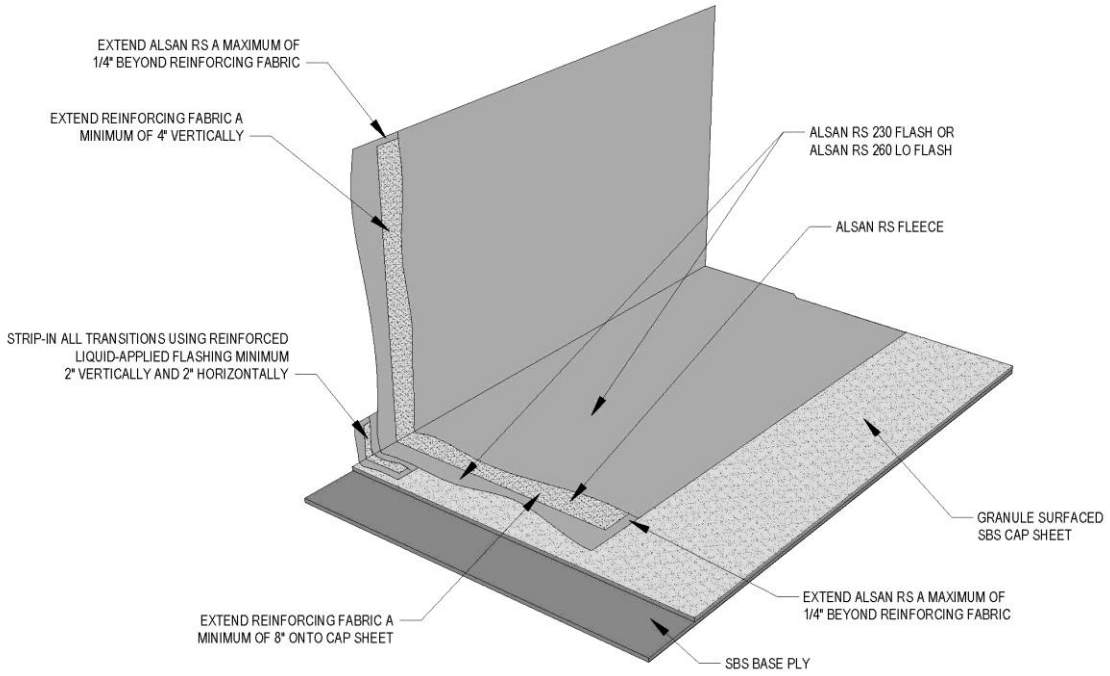


Figure 4.1i ALSAN® RS Wall/Curb Flashing with ALSAN® RS Reinforcement on Granular Surfaced Cap Sheet Without Cant

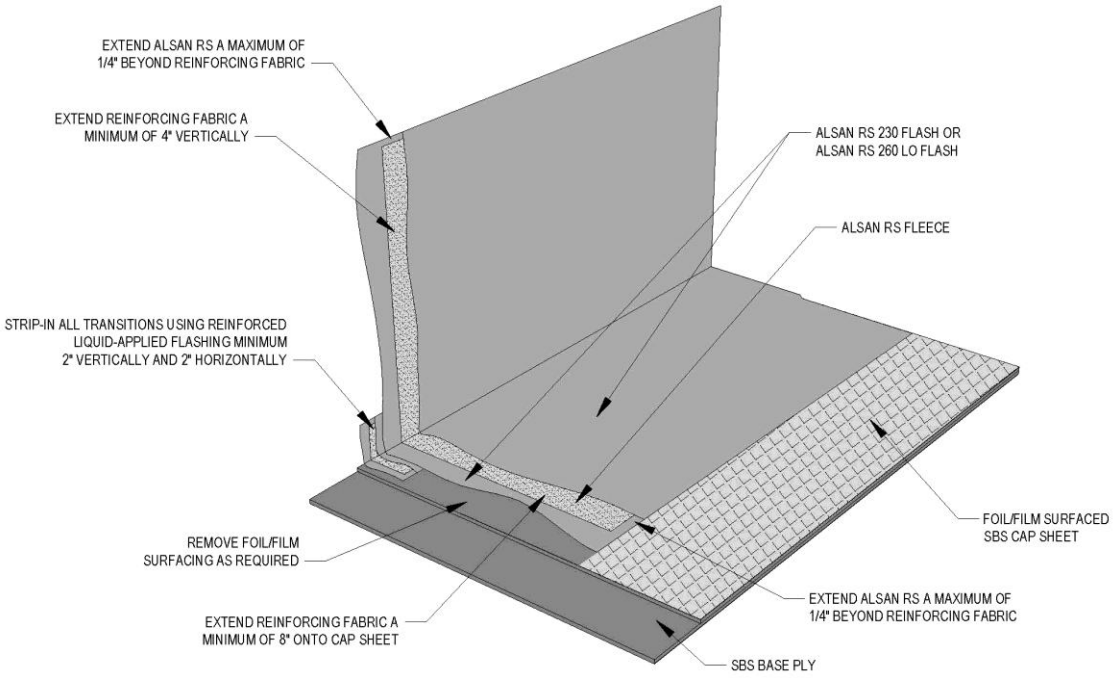


Figure 4.1j ALSAN® RS Wall/Curb Flashing with ALSAN® RS Reinforcement on Foil/Film Surfaced Cap Sheet Without Cant

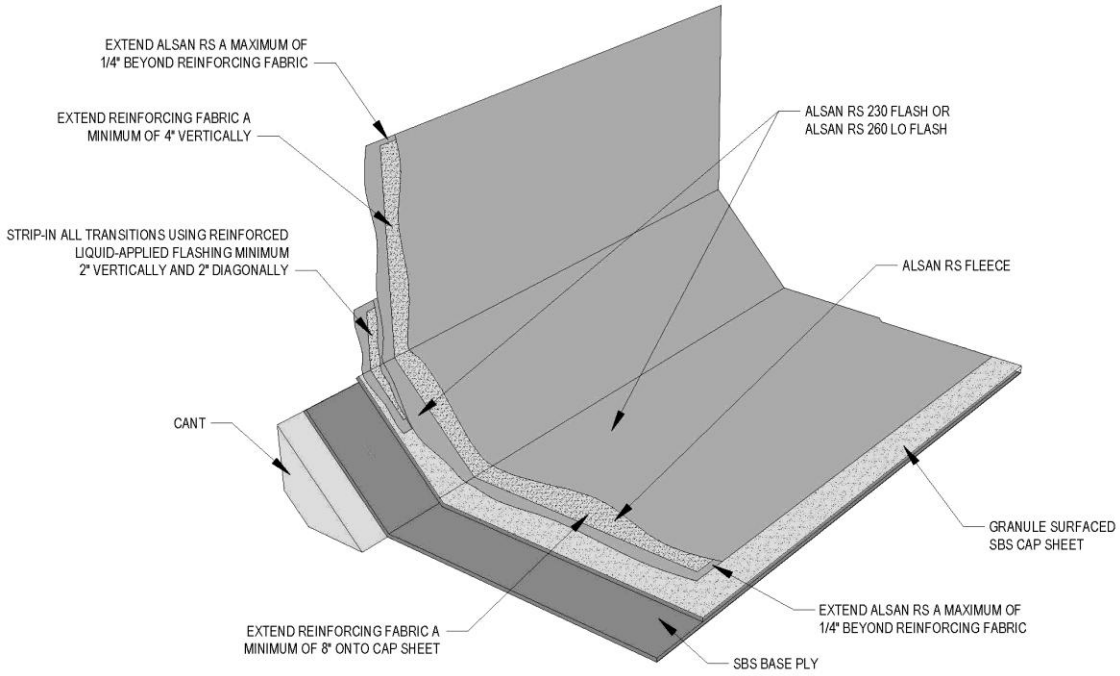


Figure 4.1k ALSAN® RS Wall/Curb Flashing with ALSAN® RS Reinforcement on Granular Surfaced Cap Sheet With Cant

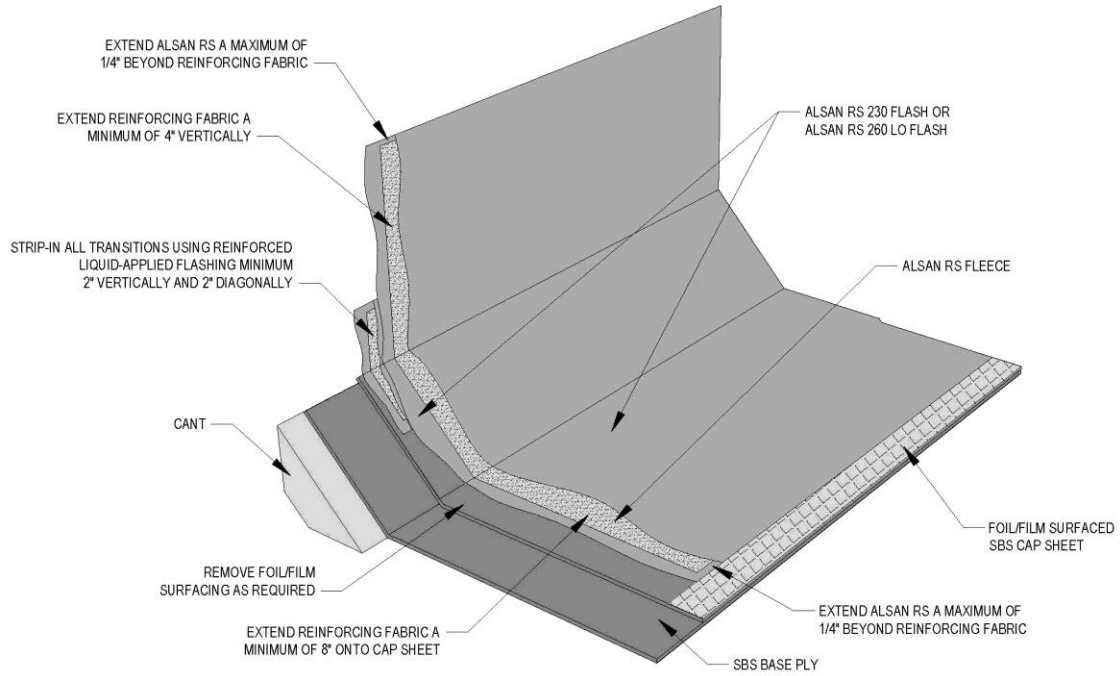


Figure 4.1l ALSAN® RS Wall/Curb Flashing with ALSAN® RS Reinforcement on Foil/Film Surfaced Cap Sheet With Cant

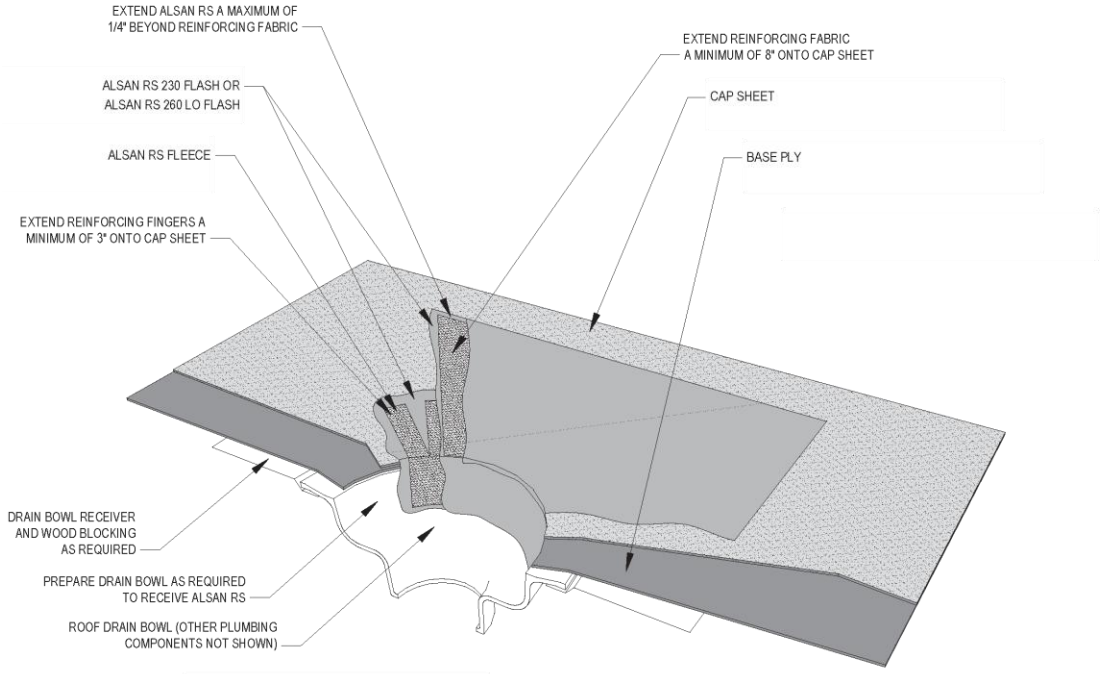


Figure 4.1m ALSAN® RS Roof Drain Flashing on Granule Surfaced Cap Sheet

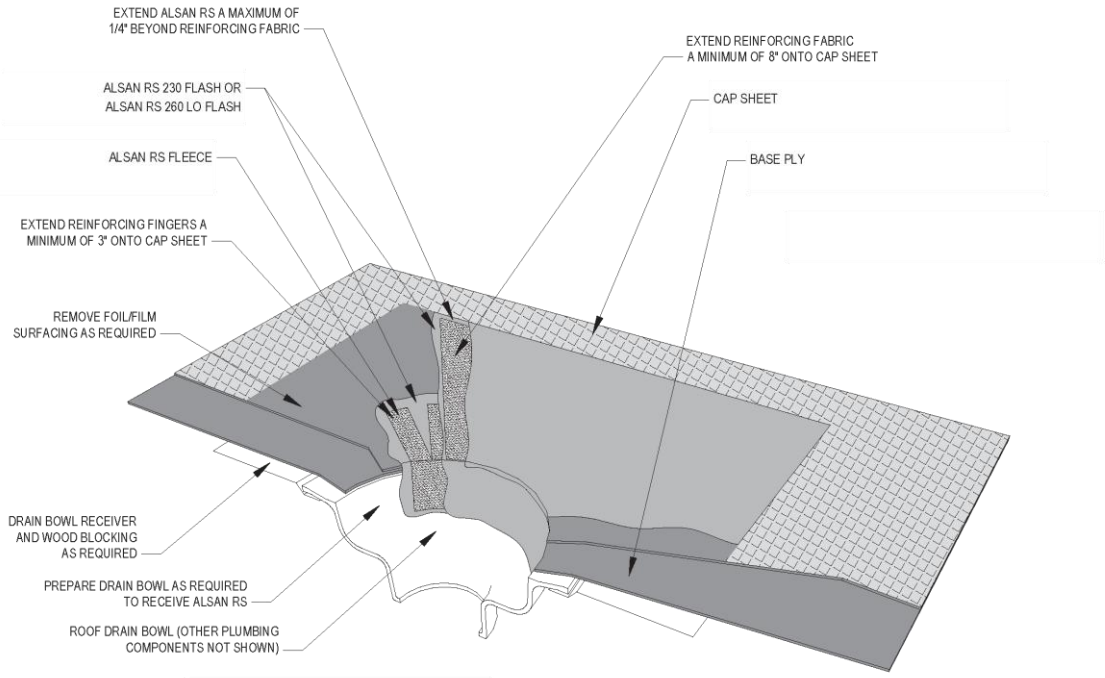


Figure 4.1n ALSAN® RS Roof Drain Flashing on Foil/Film Surfaced Cap Sheet

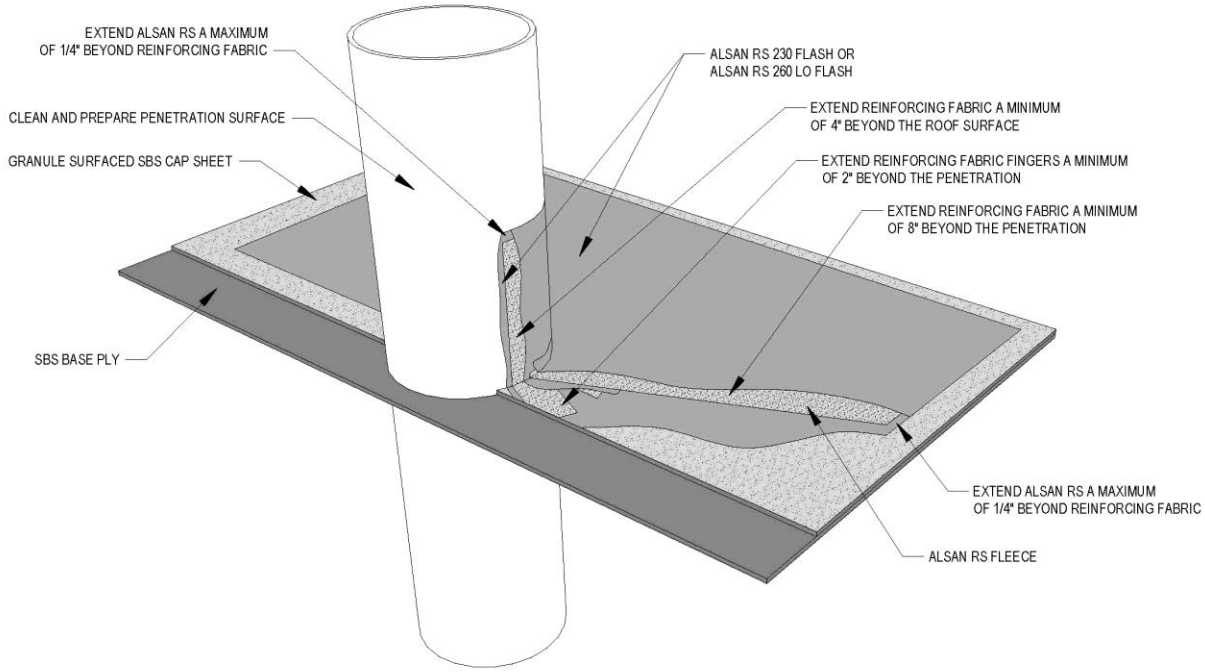


Figure 4.1o ALSAN® RS Penetration Flashing on Granule Surfaced Cap Sheet

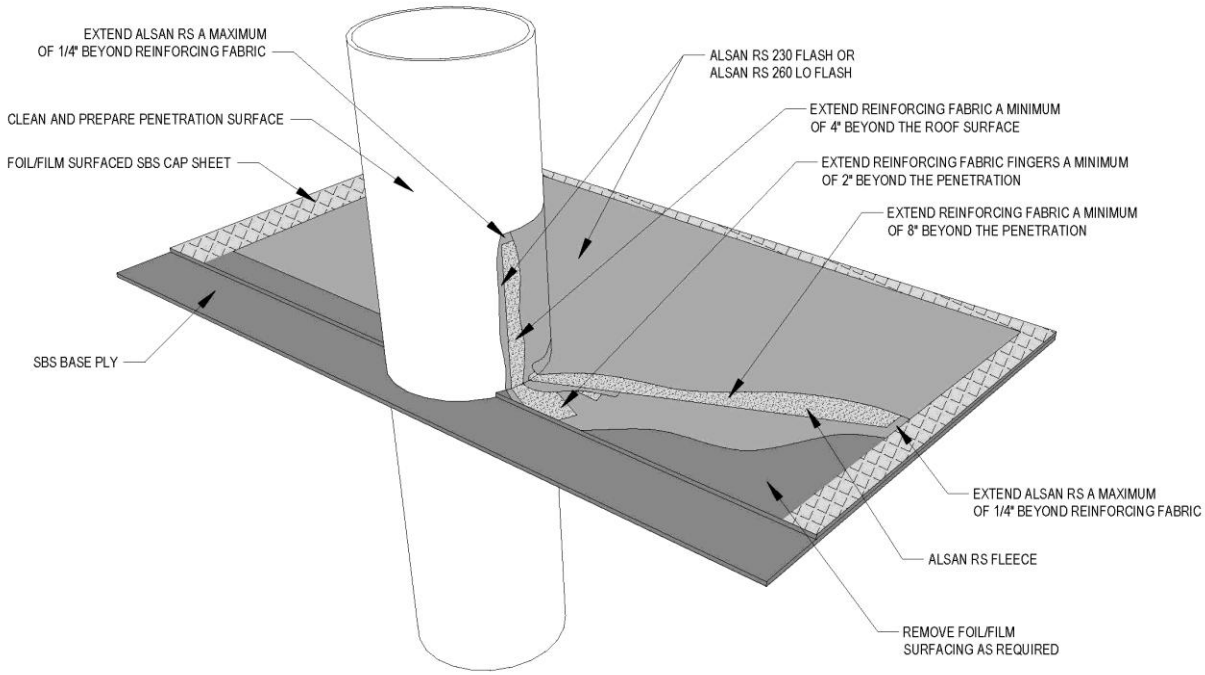


Figure 4.1p ALSAN® RS Penetration Flashing on Foil/Film Surfaced Cap Sheet

4.2 POLYURETHANE-BITUMEN, LIQUID-APPLIED FLASHING

General:

- SOPREMA® ALSAN® FLASHING liquid-applied, reinforced flashing is recommended for SBS modified bitumen membranes to seal roof transitions, terminations and penetrations. Refer to Figures 4.2a through 4.2n.
- ALSAN® FLASHING is a single component, polyurethane-bitumen resin, reinforced with POLYFLEECE fabric.
- ALSAN® FLASHING is always fully-reinforced. ALSAN® FLASHING is not intended for use as an un-reinforced coating.
- ALSAN® FLASHING is intended for exposed SBS Modified Bitumen roofing/flashing applications as indicated herein. ALSAN® FLASHING is not recommended for conditions submerged under water for more than 48 hours after precipitation. Refer to Section 4.1 for ALSAN® RS liquid-applied flashing for roof conditions where water remains on the roof surface for 48 hours or more.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to ALSAN® FLASHING detail drawings, product data sheets and published guidelines for additional information.

Preparation:

- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- The following are recommended during cold weather:
    - The ambient temperature should be at least 40°F (4.4°C), and rising to ensure conditions remain acceptable to apply ALSAN® FLASHING.
    - The ALSAN® FLASHING temperature should be 70°F (21°C) or more at the point of application.
    - To ensure ALSAN® FLASHING is applied at 70°F (21°C) during cold weather, pails should be stored in heated areas.
    - Store pails in a heated area to maintain the pails at 70°F (21°C) during cold weather.
- Primer is not required for ALSAN® FLASHING. Ensure all substrates are clean, dry and prepared to receive ALSAN® FLASHING. Adhesion/peel tests are encouraged for concrete, masonry and for other substrates where surface conditions may vary.
- Remove foil/film surfacing prior to installing the ALSAN® FLASHING roof system flashings on SOPRALAST™ cap sheets. Refer to Figures 4.2b, 4.2d, 4.2f, 4.2h, 4.2j, 4.2l, and 4.2n. Refer to Section 5.3.2 for removal of foil/film surfacing.

Application:

- Pre-cut the POLYFLEECE reinforcement to conform to roof terminations, transitions and penetrations. Cut reinforcement to ensure a minimum 2 in overlap of fleece at side-laps and end-laps. Ensure the liquid-applied flashing membrane is fully reinforced.
- Ensure POLYFLEECE extends a minimum of 4 in vertically and 8 in horizontally at roof terminations, transitions and penetrations. Refer to Figures 4.2a through 4.2n.
- Use a paint stir stick to thoroughly stir the pail ALSAN® FLASHING prior to application.

- Apply the base coat of ALSAN® FLASHING resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion. Apply the base coat at 2.0 gallons per square.
- Immediately apply POLYFLEECE reinforcing fabric into the wet base coat of resin. Using a brush or roller, work the POLYFLEECE into the wet resin while applying the second coat of ALSAN® FLASHING resin also at 2.0 gallons per square to completely encapsulate the fleece. Extend the ALSAN® FLASHING resin a minimum of 1 in beyond the POLYFLEECE.
- Apply a finish coat of ALSAN® FLASHING resin at 2.0 gallons per square within 2 to 3 hours. When applying the finish more than 24 hours, the surface may need to be cleaned using acetone or MEK to ensure satisfactory adhesion .
- Optional Surfacing:
    - Where specified, broadcast mineral granules into the wet ALSAN® FLASHING finish coat to match the adjacent cap sheet.
    - Apply granules to refusal.
    - Allow 24 to 48 hours to cure, then remove loose granules.
- The total application rate of ALSAN® FLASHING resin is approximately 6 gallons per square.

Inspection:

- Each day examine completed liquid-applied flashing and repair all deficiencies.

Table 4.2a ALSAN® FLASHING Substrates	
Substrate	**Preparation**
Concrete	Clean, dry and free of loose debris or laitance
Masonry	Clean, dry and free of loose debris or laitance
Metal	Grind metal surfaces down to bare “white” metal
Wood	Clean and dry
PVC pipe	Roughen substrate by sanding
Granule surfaced SBS cap sheets	Clean, dry and free of loose debris
Sanded surfaced SBS base plies	Clean, dry and free of loose debris

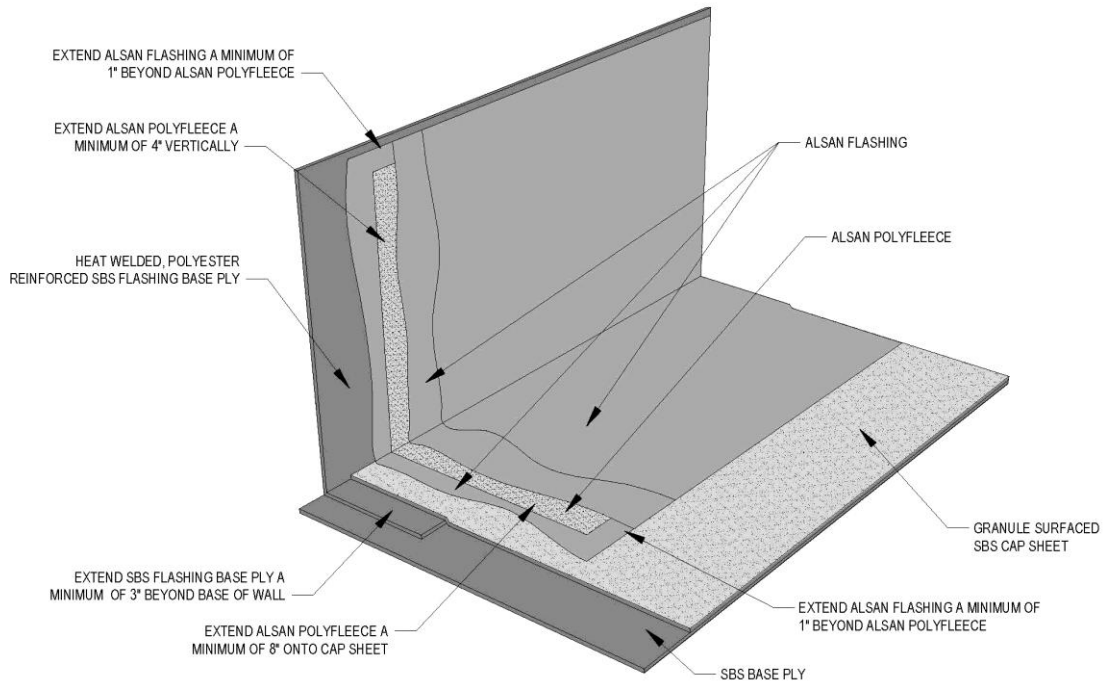


Figure 4.2a ALSAN® FLASHING Wall/Curb Flashing with SBS Flashing Base Ply on Granular Surfaced Cap Sheet Without Cant

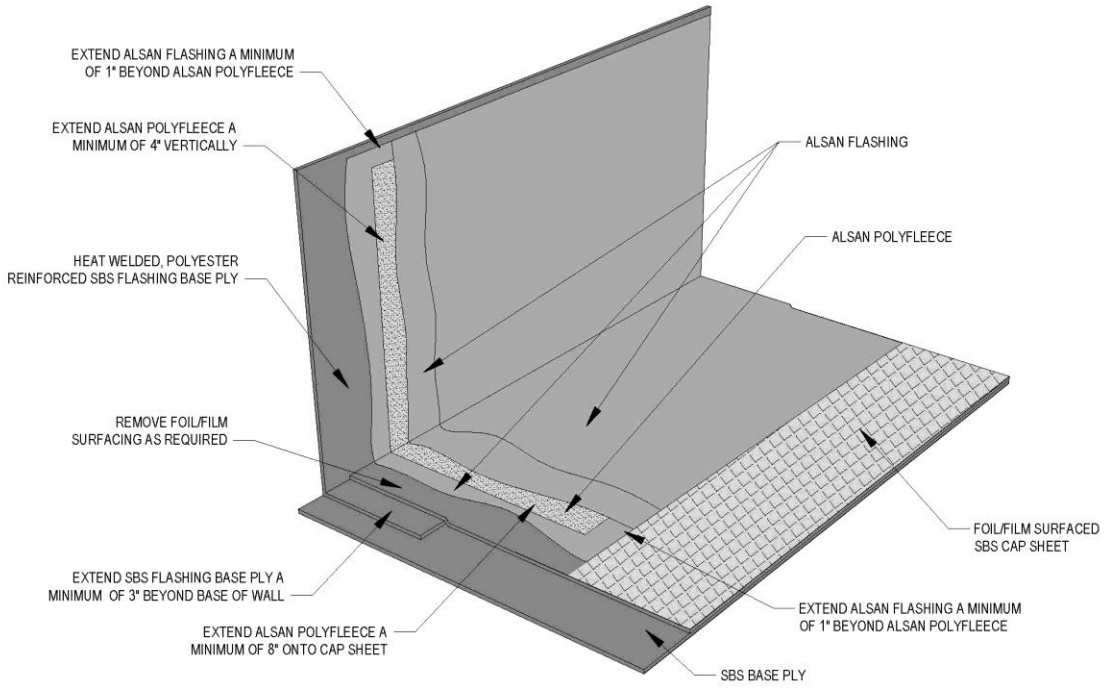


Figure 4.2b ALSAN® FLASHING Wall/Curb Flashing with SBS Flashing Base Ply on Foil/Film Surfaced Cap Sheet Without Cant

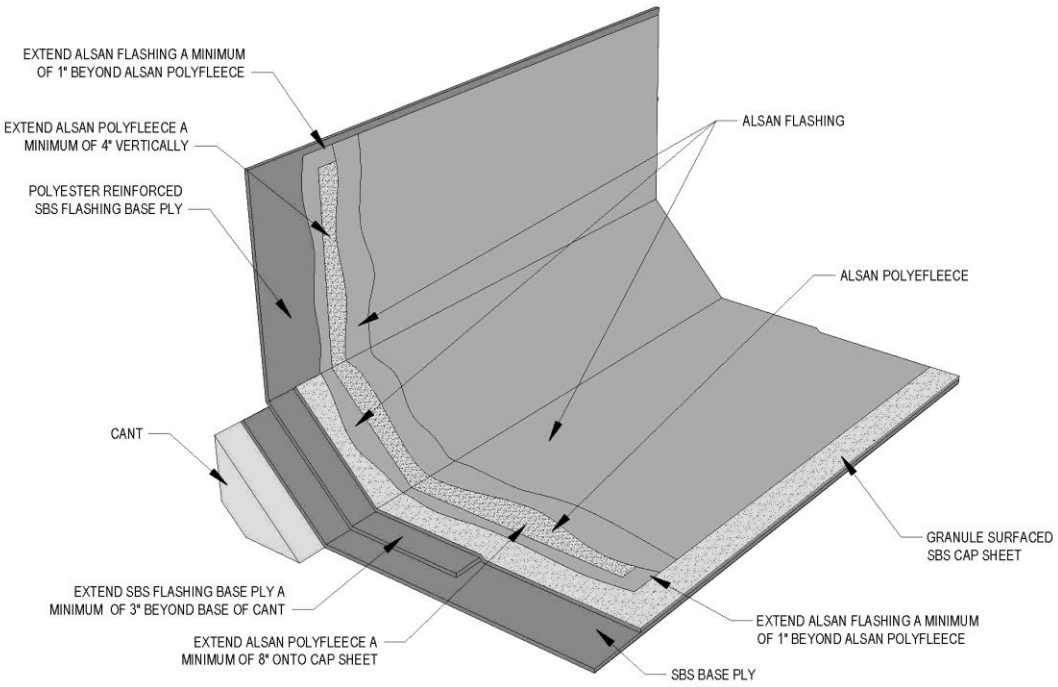


Figure 4.2c ALSAN® FLASHING Wall/Curb Flashing with SBS Flashing Base Ply on Granular Surfaced Cap Sheet With Cant

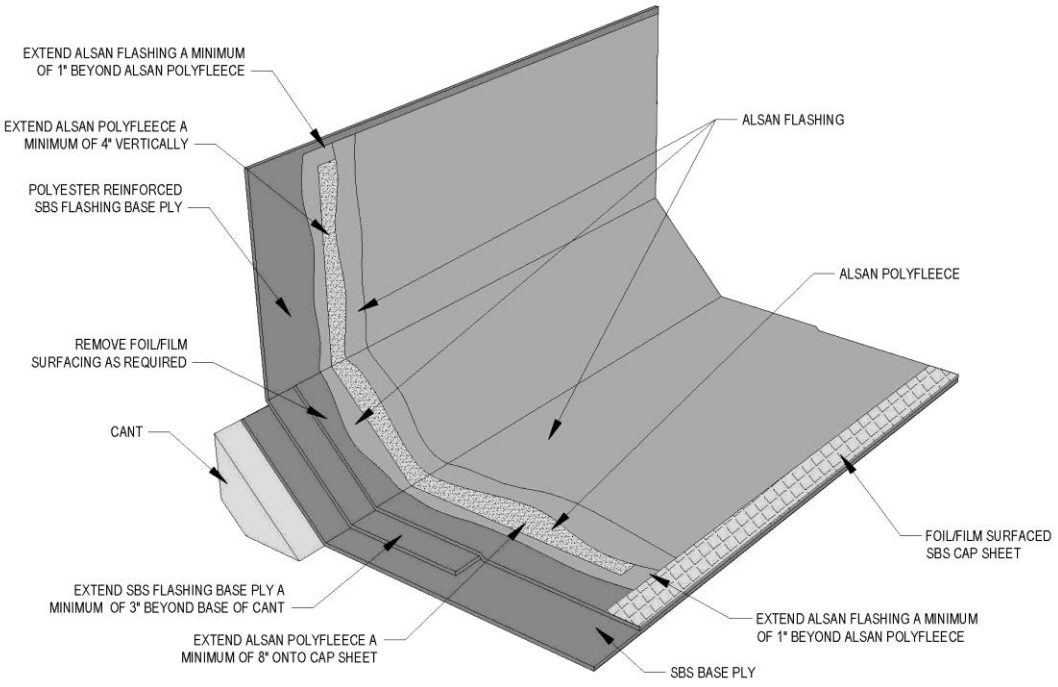


Figure 4.2d ALSAN® FLASHING Wall/Curb Flashing with SBS Flashing Base Ply on Foil/Film Surfaced Cap Sheet With Cant

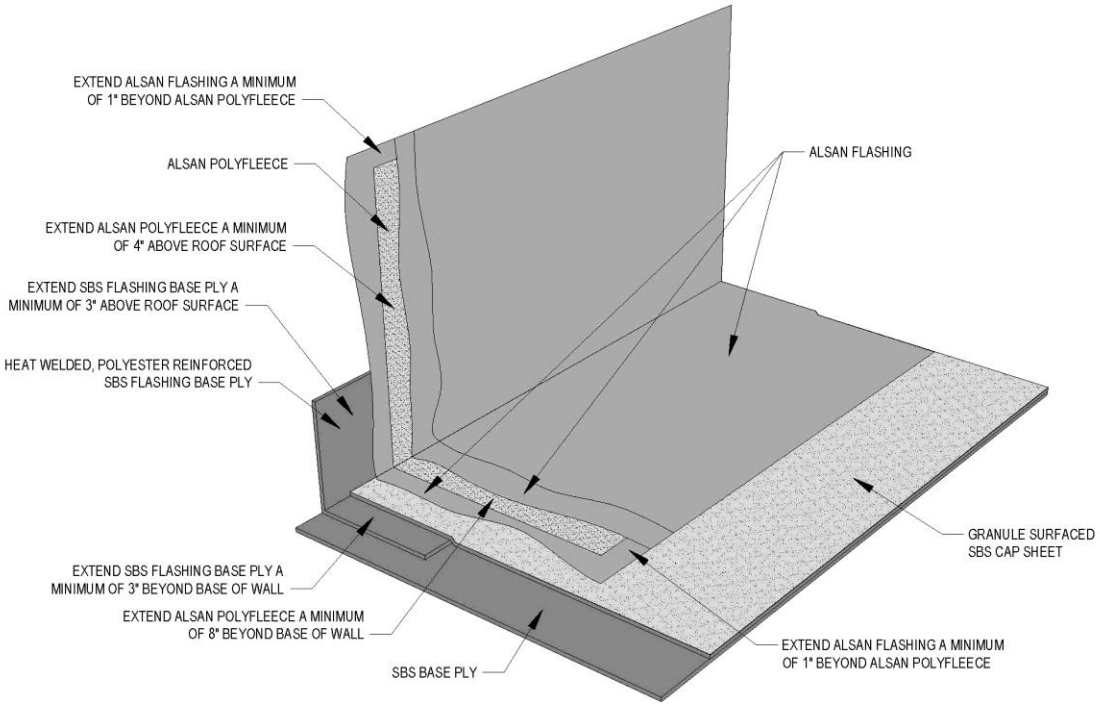


Figure 4.2e ALSAN® FLASHING Wall/Curb Flashing with SBS Reinforcement on Granular Surfaced Cap Sheet Without Cant

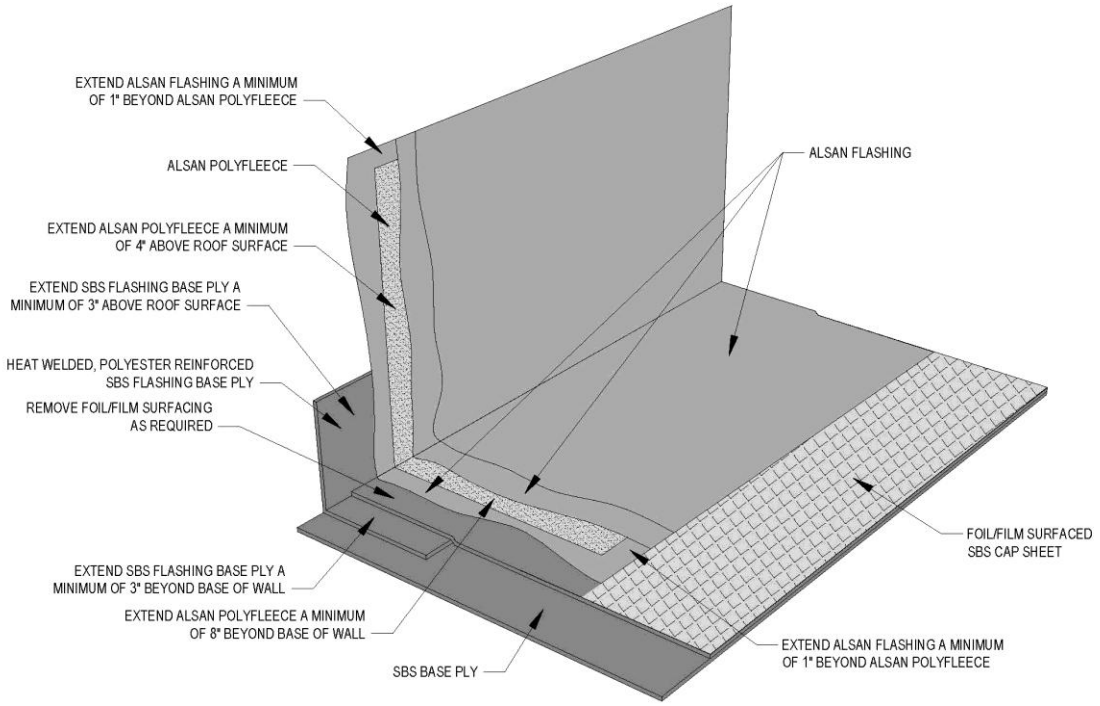


Figure 4.2f ALSAN® FLASHING Wall/Curb Flashing with SBS Reinforcement on Foil/Film Surfaced Cap Sheet Without Cant

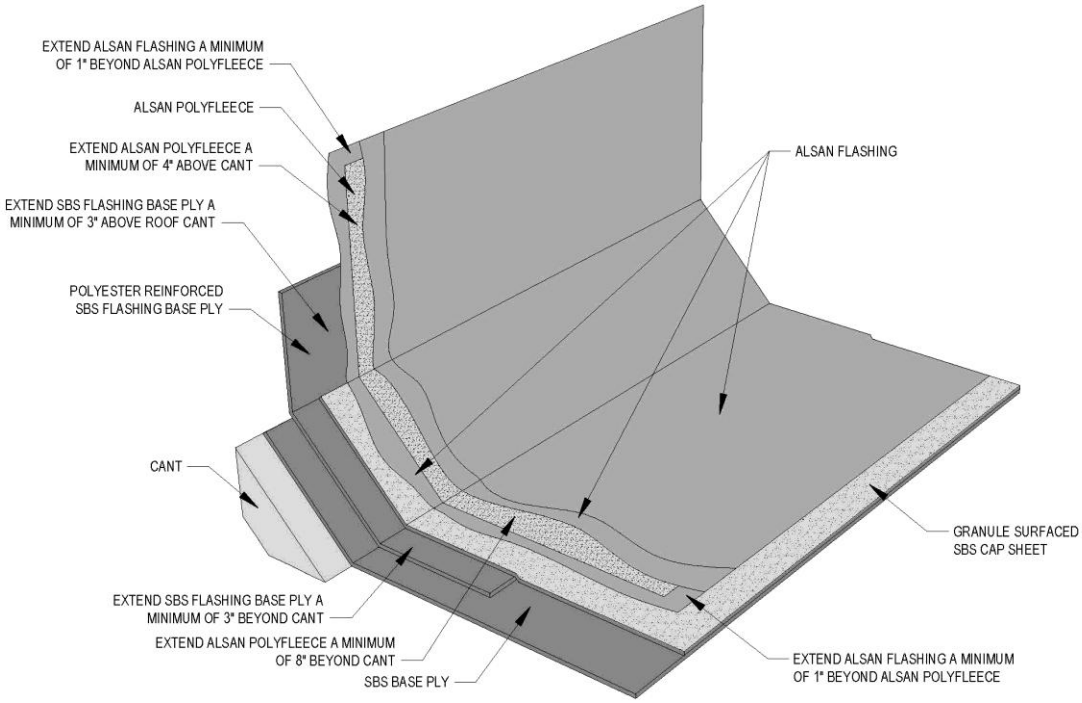


Figure 4.2g ALSAN® FLASHING Wall/Curb Flashing with SBS Reinforcement on Granule Surfaced Cap Sheet With Cant

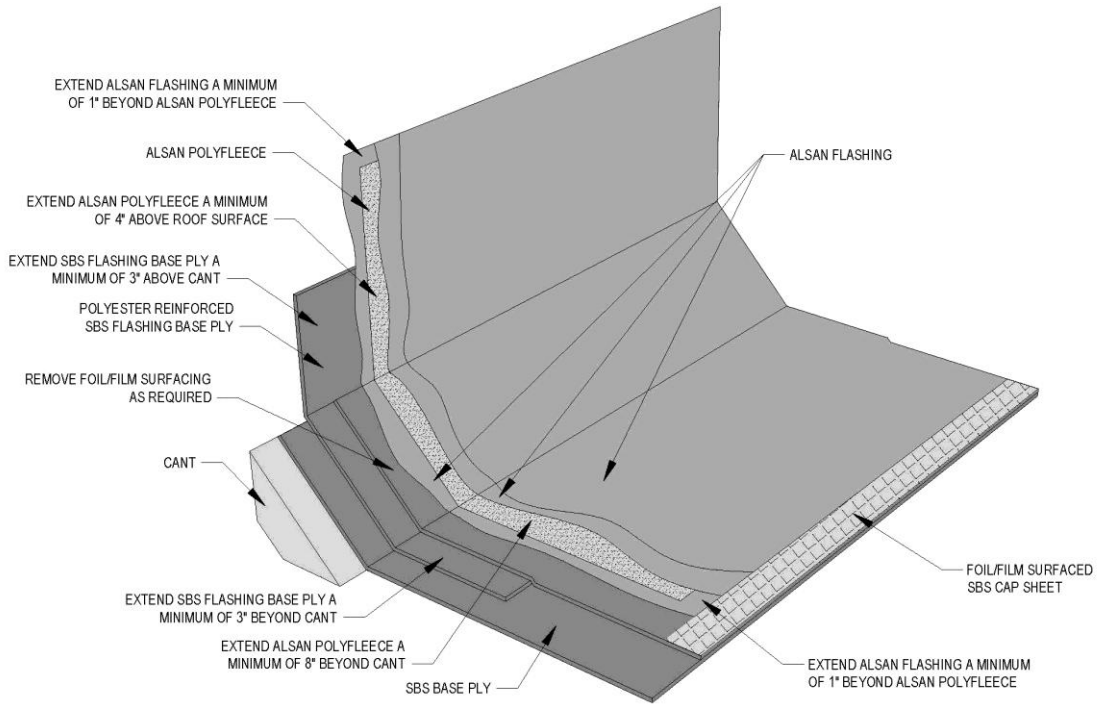


Figure 4.2h ALSAN® FLASHING Wall/Curb Flashing with SBS Reinforcement on Foil/Film Surfaced Cap Sheet With Cant

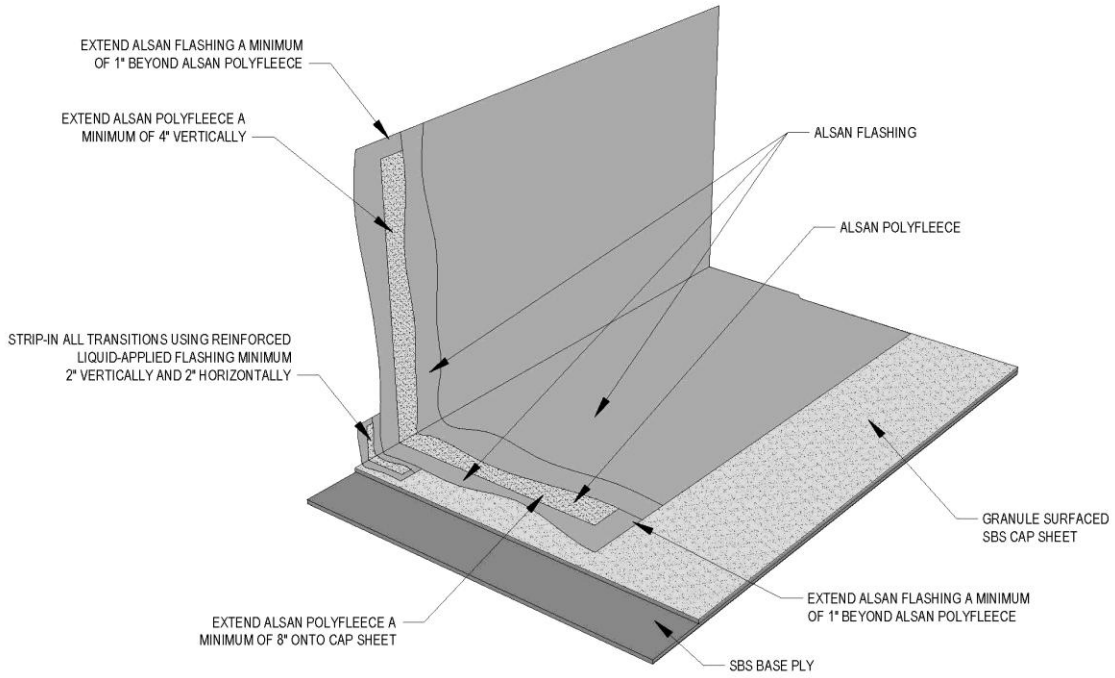


Figure 4.2i ALSAN® FLASHING Wall/Curb Flashing with ALSAN® FLASHING Reinforcement on Granular Surfaced Cap Sheet Without Cant

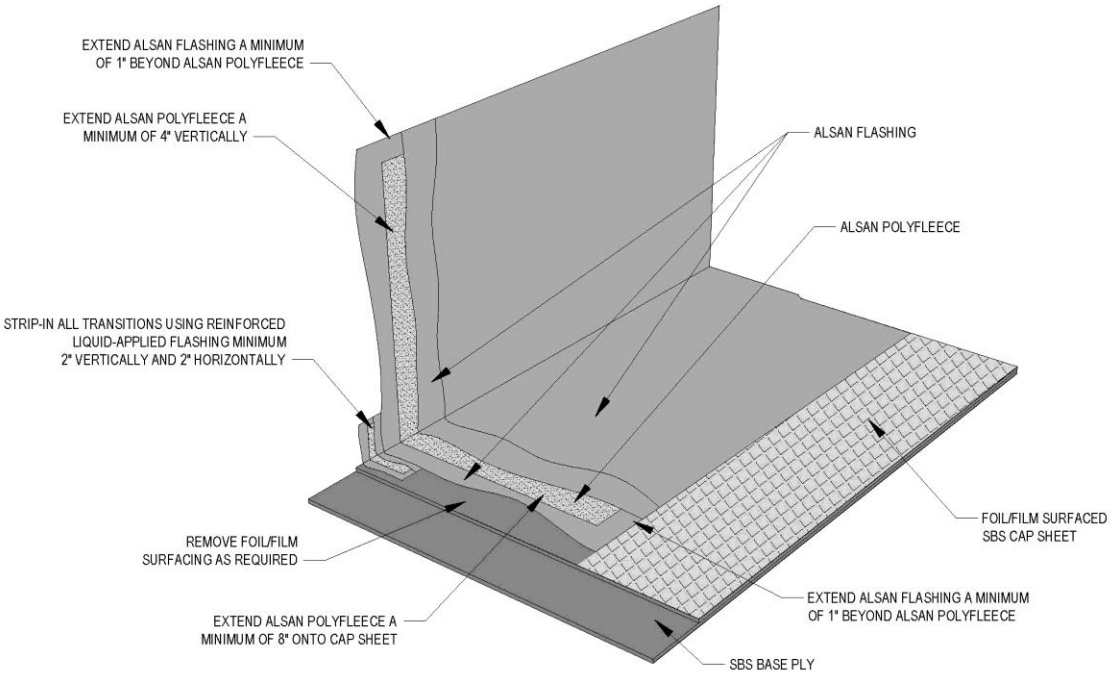


Figure 4.2j ALSAN® FLASHING Wall/Curb Flashing with ALSAN® FLASHING Reinforcement on Foil/Film Surfaced Cap Sheet Without Cant

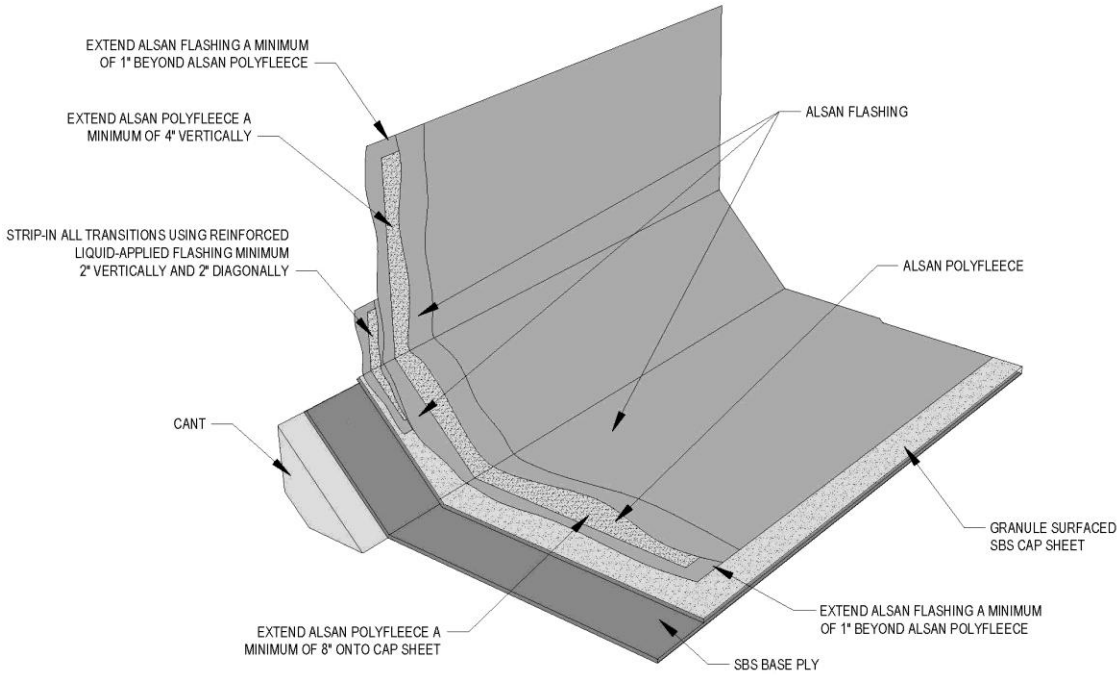


Figure 4.2k ALSAN® FLASHING Wall/Curb Flashing with ALSAN® FLASHING Reinforcement on Granular Surfaced Cap Sheet With Cant

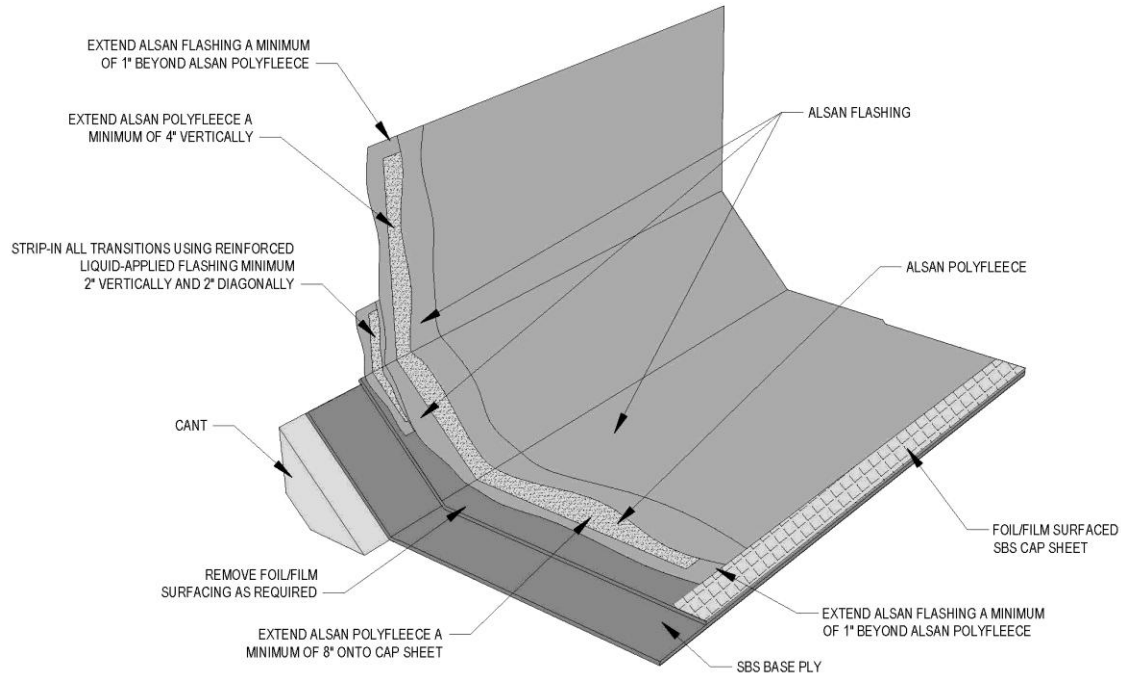


Figure 4.2l ALSAN® FLASHING Wall/Curb Flashing with ALSAN® FLASHING Reinforcement on Foil/Film Surfaced Cap Sheet With Cant

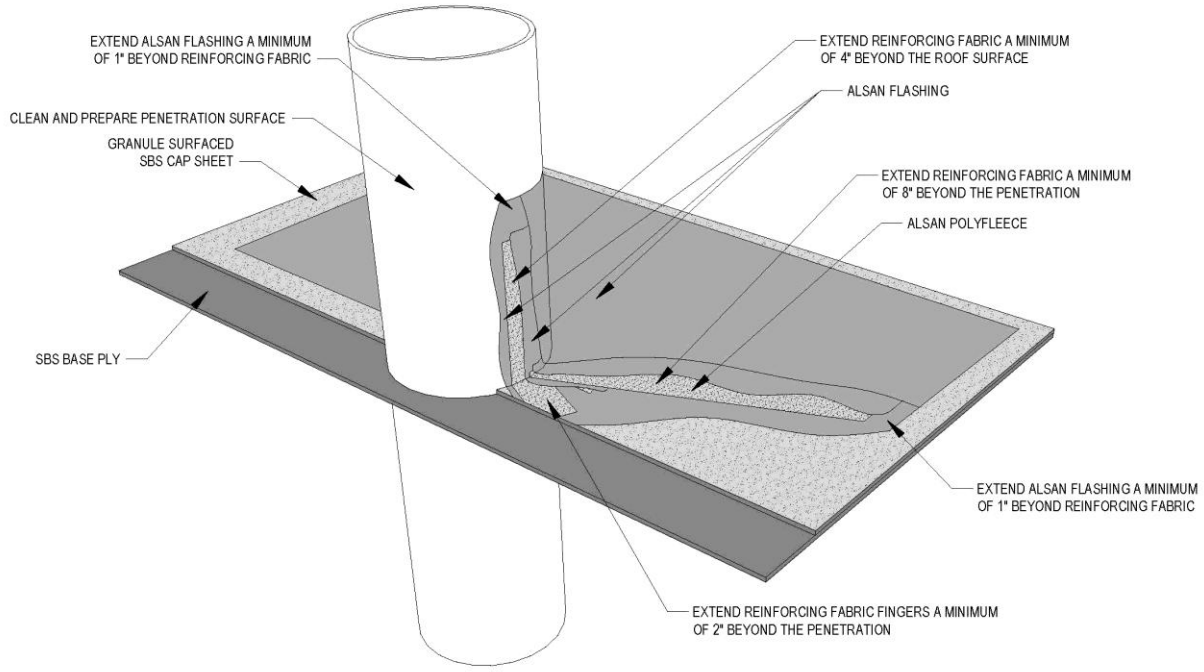


Figure 4.2m ALSAN® FLASHING Penetration Flashing on Granule Surfaced Cap Sheet

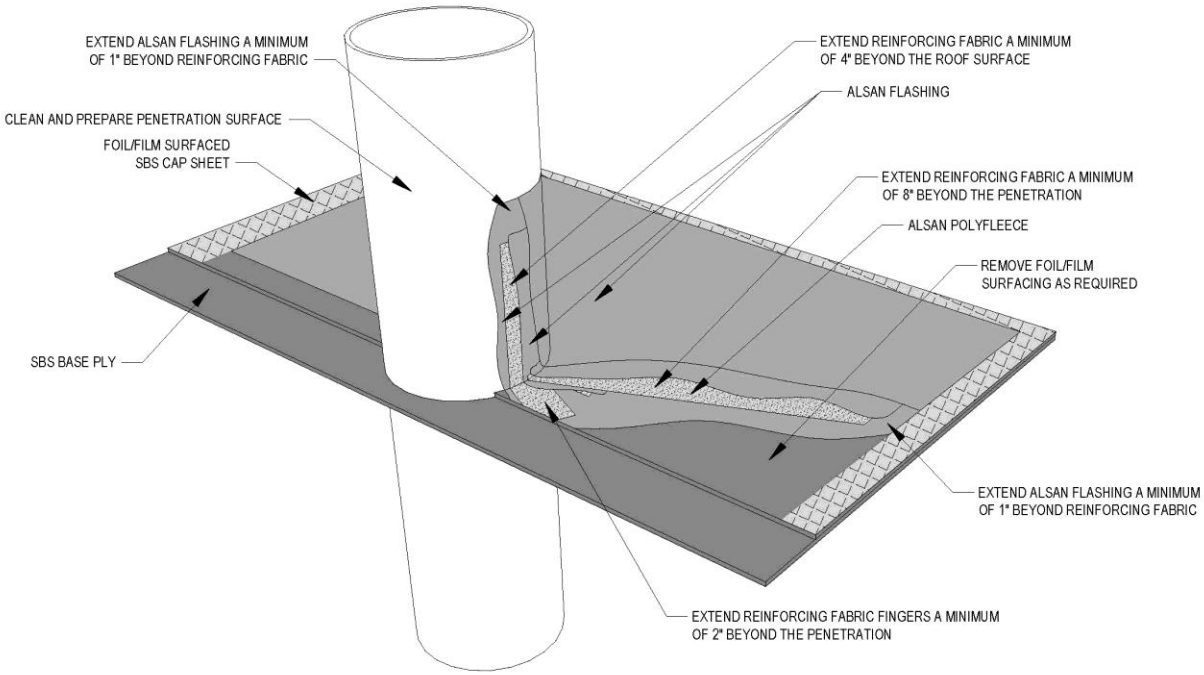


Figure 4.2n ALSAN® FLASHING Penetration Flashing on Foil/Film Surfaced Cap Sheet

5 MISCELLANEOUS

5.1 SBS MODIFIED BITUMEN WALKWAYS & SACRIFICIAL PROTECTION PADS

General:

- SOPREMA® SOPRAWALK™ is a 197 mils (5.0 mm) thick, granule-surfaced SBS cap sheet used to create a walk path and protect field membranes from traffic.
- SOPREMA® SOPRAWALK™ is also used as a sacrificial layer for additional protection when rooftop equipment, fixtures, lightning protection, etc. are installed directly on the roof surface.
- Other granule surfaced SBS cap sheets may also be used in lieu of SOPRAWALK™. Refer to Table 5.1a.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Before installing SBS membrane walkways, ensure field cap sheet is clean and dry, and the surfacing has been prepared to receive the walkways. Refer to Table 5.1a.
- Remove all roll packaging tape prior to installation.

Application:

- Unroll SBS membrane walkway.
- Cut walkway from end of rolls. No piece should be less than 24 in and no more than 60 in.
- Locate walkway membranes a minimum of 2 in from side-laps, end-laps and flashing membranes.
- Install walkway membrane sections with a 4 in space between walkway sections.
- Install walkway using one of the prescribed installation methods. Refer to Table 5.1a and Figures 5.1a through 5.1d.
- When rooftop equipment and fixtures are to be installed directly onto the roof surface, ensure the sacrificial ply is installed to protect the underlying membrane.
- For equipment protection pads such as for lightning protection, refer to Figures 5.1e through 5.1f.

Table 5.1a SBS Modified Bitumen Walkways & Sacrificial Protection Pads			
Installation Method	**SBS Field Cap Sheet Surfacing**	**SBS Field Cap Sheet Preparation**	**SBS Membrane Walkway**
Fully adhered (heat welded). Refer to Section 3.1.1	Granules, Refer to Figure 5.1a	Embed granules. Refer to Section 5.3.1	SOPRAWALK™, SOPRALENE® FLAM 250 FR GR, SOPRALENE® FLAM 180 FR GR
	Foil/Film, Refer to Figure 5.1c	Remove foil/film surfacing. Refer to Section 5.3.2	
Fully adhered (cold adhesive-applied) with 3 in heat welded perimeters. Refer to Section 3.2.1	Granules, Refer to Figure 5.1b	Embed granules. Refer to Section 5.3.1	SOPRAWALK™, SOPRALENE® 250 FR GR, SOPRALENE® 180 FR GR
	Foil/Film, Refer to Figure 5.1d	Remove foil/film surfacing. Refer to Section 5.3.2	

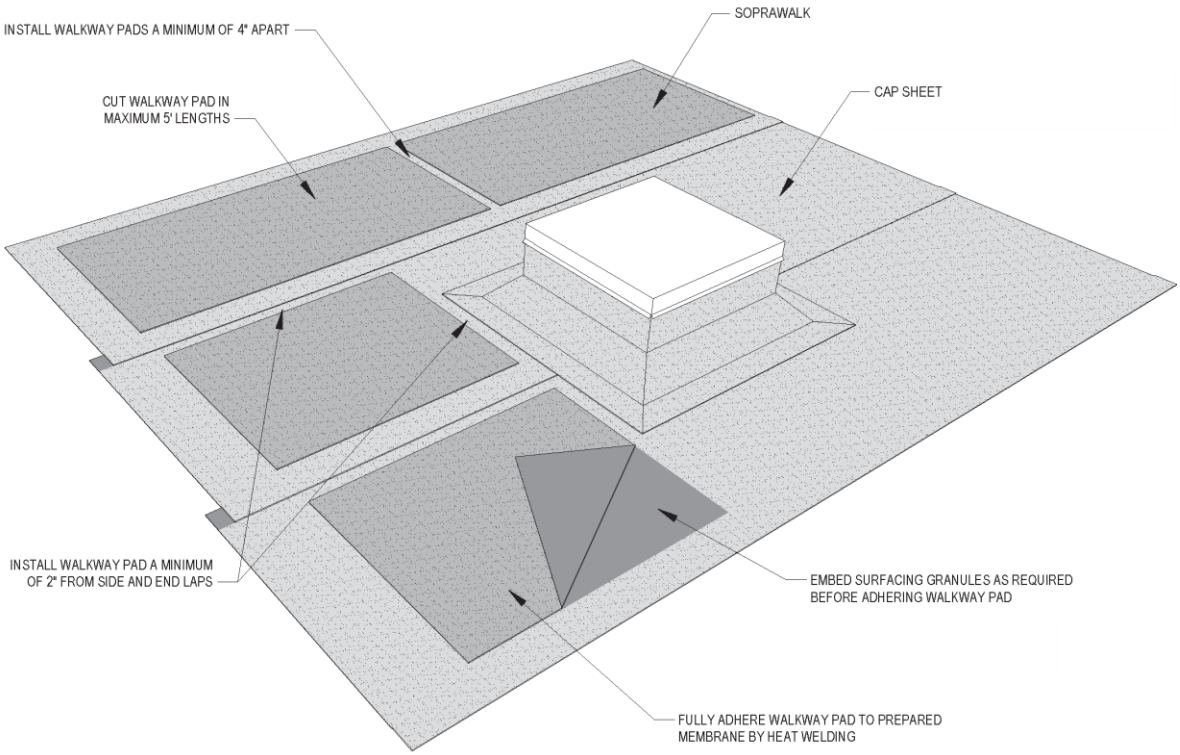


Figure 5.1a Fully Adhered, Heat Welded Walkway Membrane on Granule Surfaced Cap Sheet

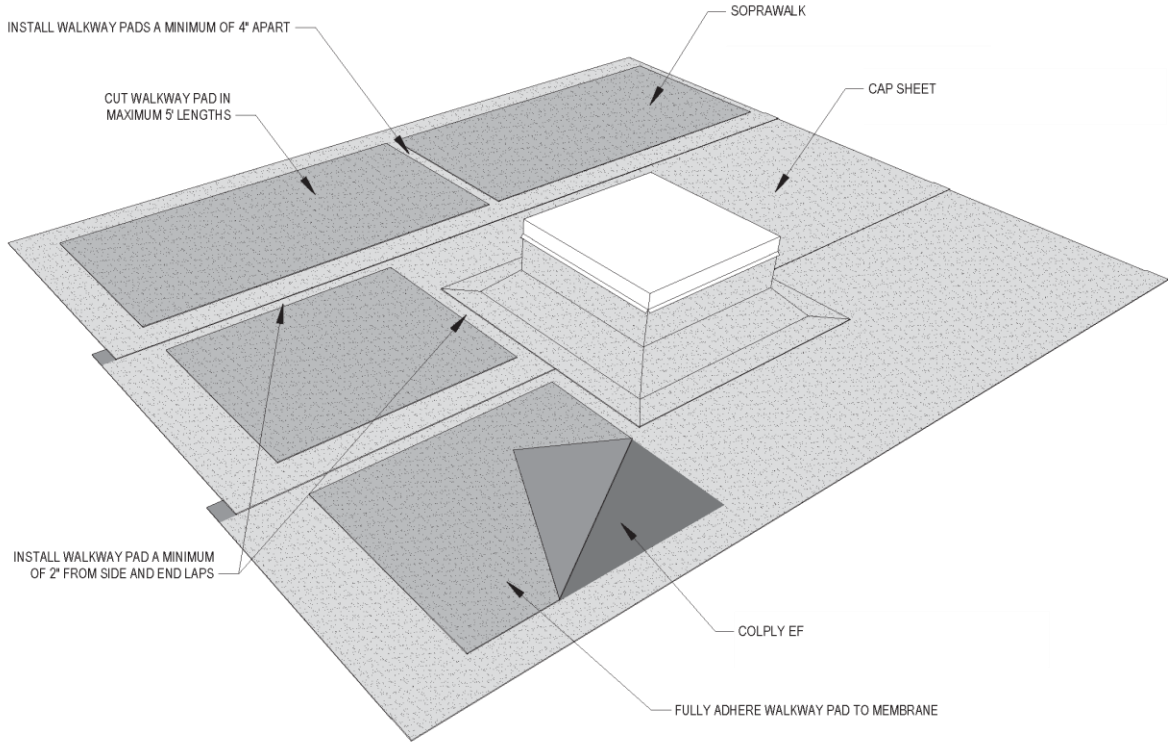


Figure 5.1b Fully Adhered, Cold Adhesive-Applied Walkway Membrane on Granule Surfaced Cap Sheet

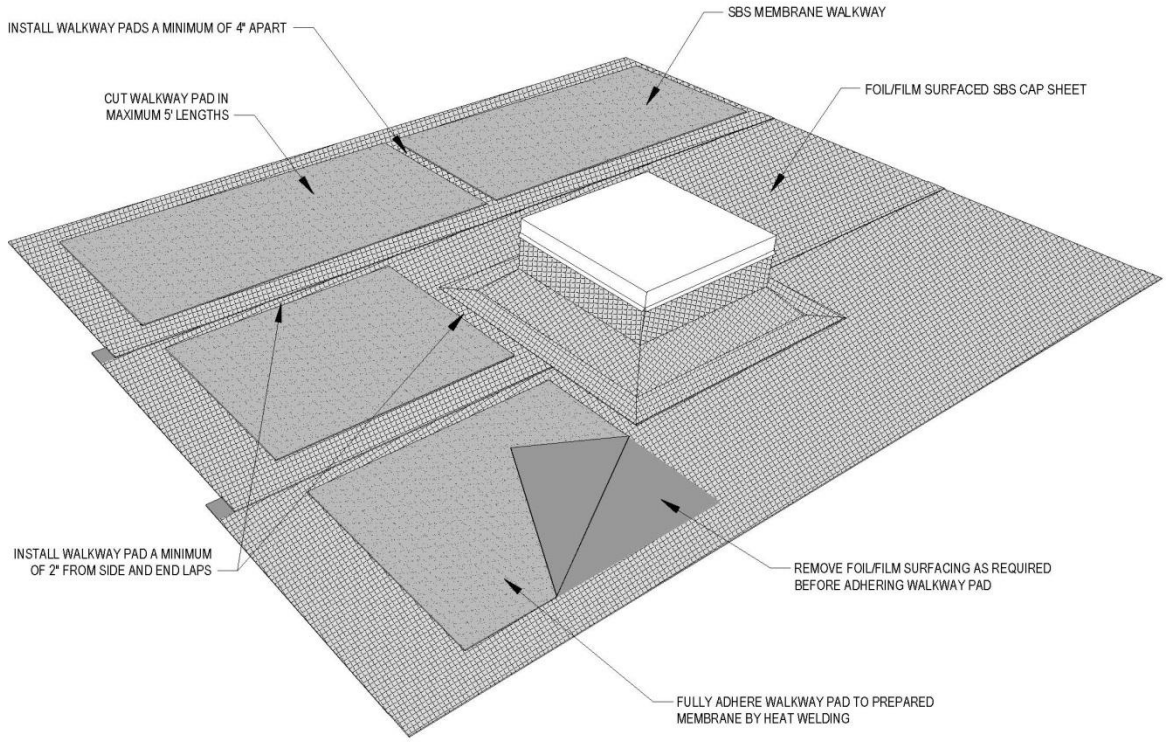


Figure 5.1c Fully Adhered, Heat Welded Walkway Membrane on Foil/Film Surfaced Cap Sheet

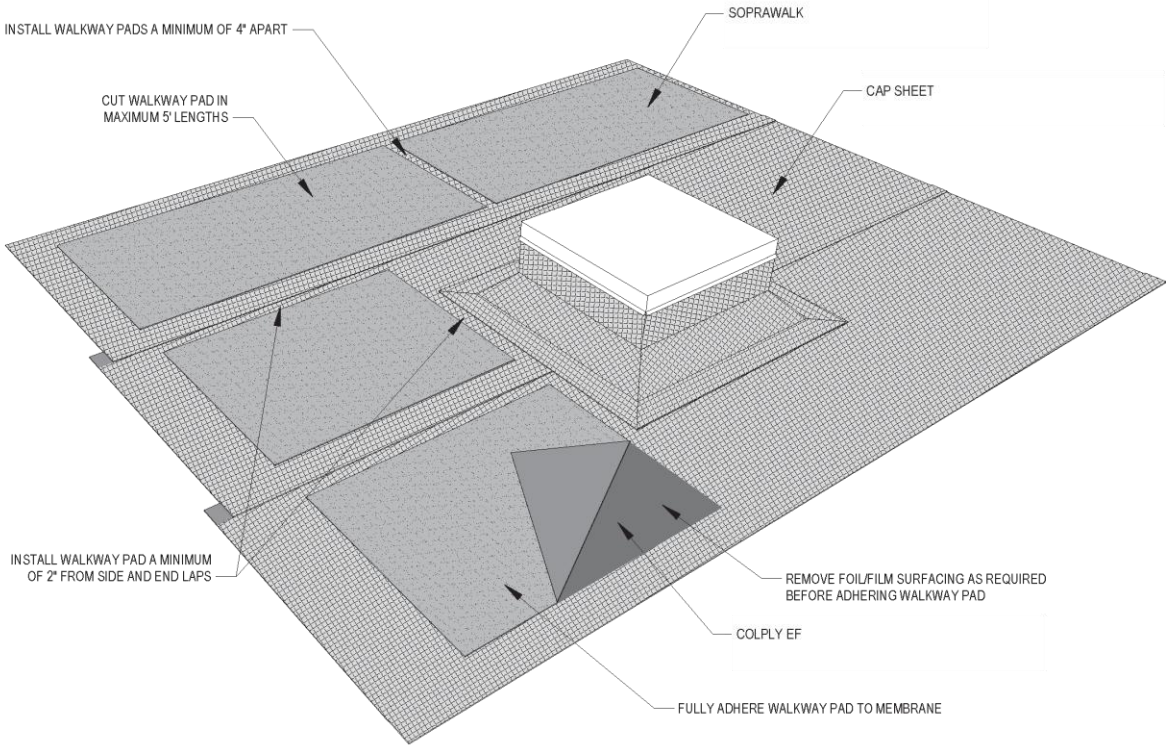


Figure 5.1d Fully Adhered, Cold Adhesive-Applied Walkway Membrane on Foil/Film Surfaced Cap Sheet

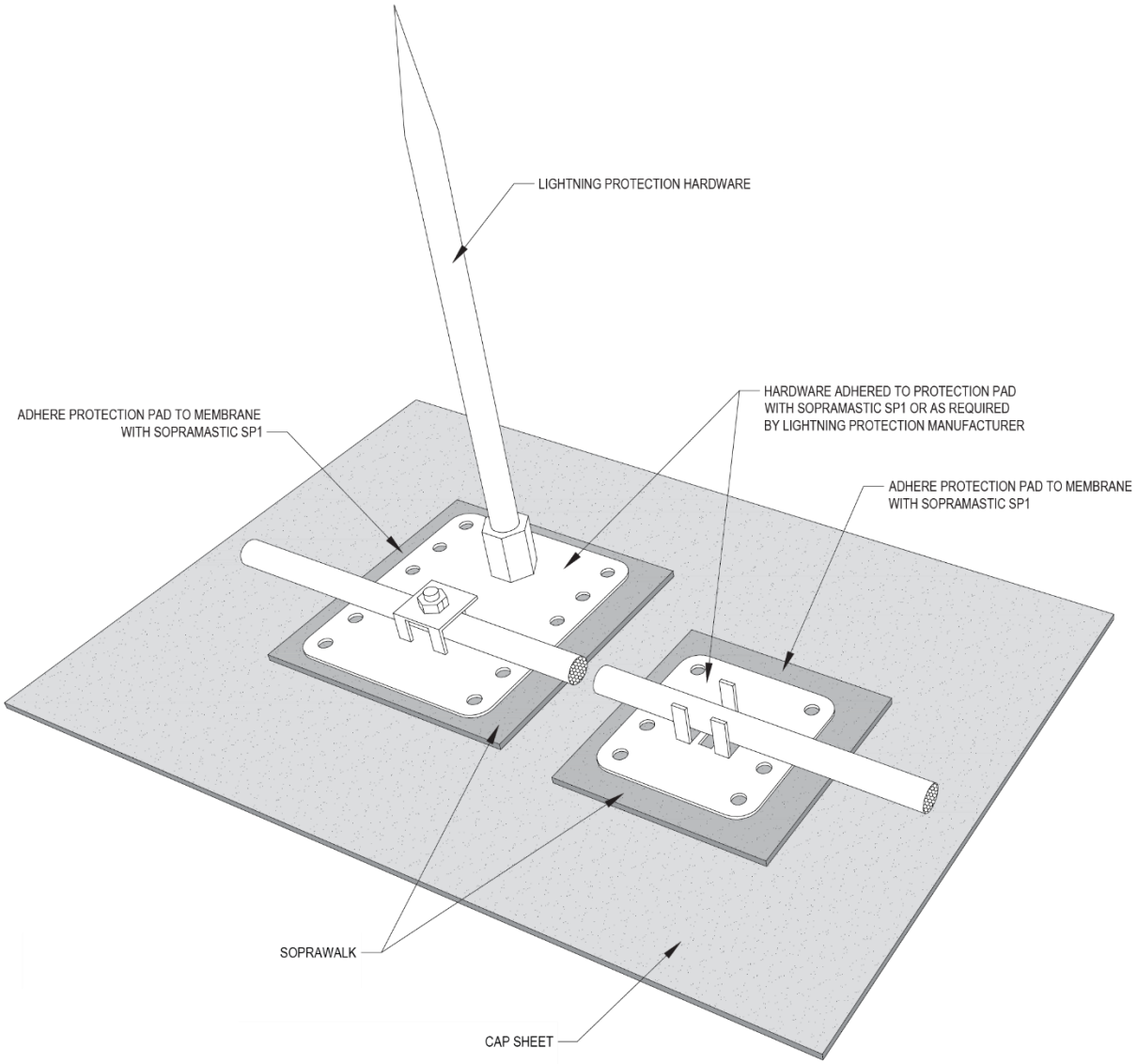


Figure 5.1e Protection Pad on Granule Surfaced Cap Sheet

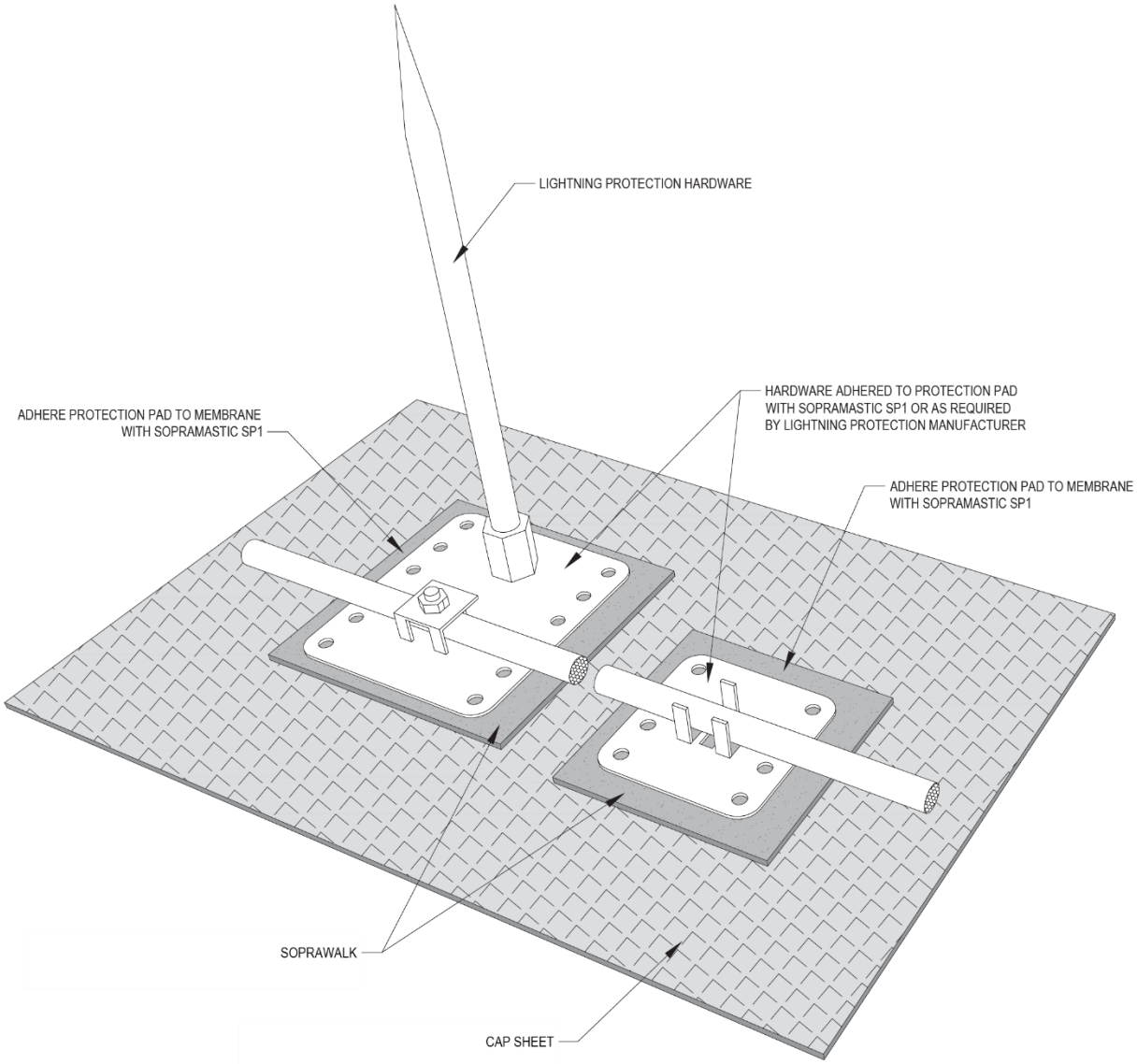
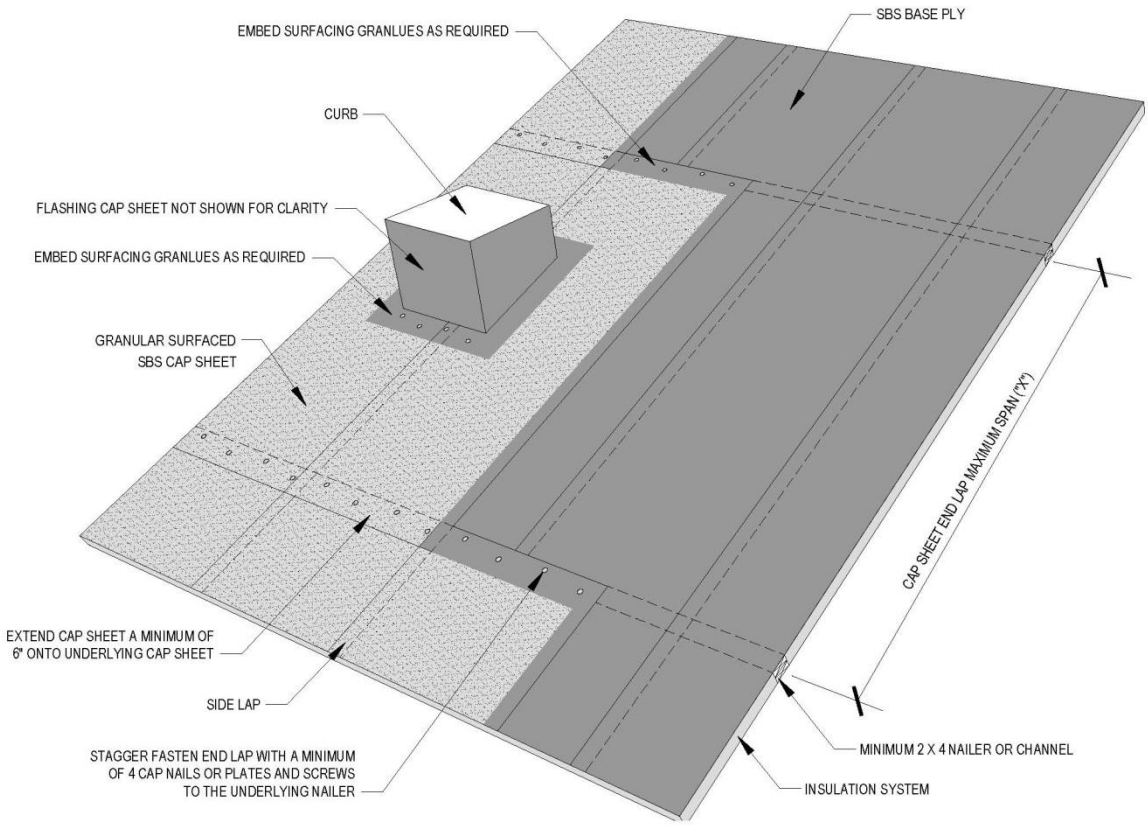


Figure 5.1f Protection Pad on Foil/Film Surfaced Cap Sheet

5.2 SBS MEMBRANE STEEP SLOPE ROOFING

General:

- SOPREMA® SBS modified bitumen membranes may be installed on steep-sloped roofs.
- "Back-nailing" includes fastening the cap sheet within the sealed end lap through the base ply(s) to the substrate below as required to prevent membrane slippage.
- When using fasteners to "back-nail" into wood nailers, refer to Figures 5.2a and 5.2c.
- When using fasteners to "back-nail" directly into the structural deck, refer to Figures 5.2b and 5.2d.
- Refer to tables in Figures 5.2a through 5.2d for slope, method of application and "back-nailing" requirements.
- Refer to agency approvals for fire classifications and contact SOPREMA® for additional information.

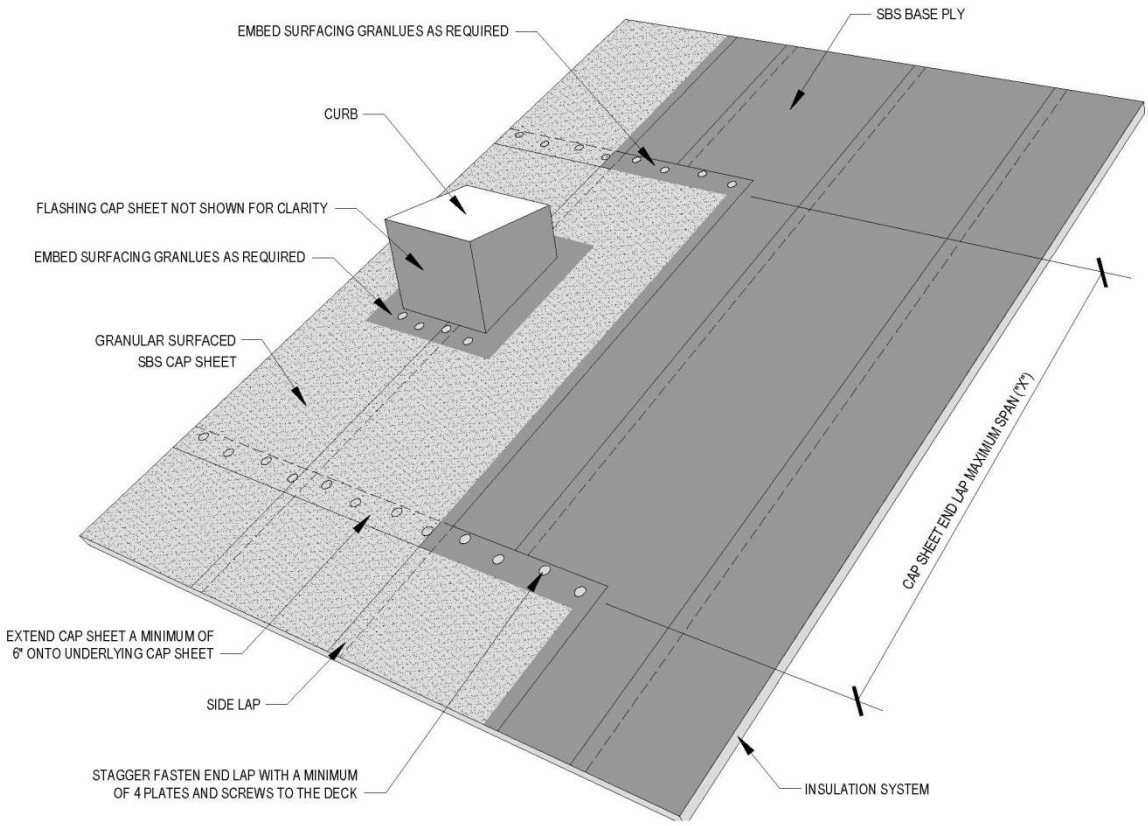


STEEP SLOPE MEMBRANE FASTENING REQUIREMENTS							
METHOD OF APPLICATION		CAP SHEET END LAP MAXIMUM SPAN ("X")					
BASE PLY(S)	CAP SHEET	1/2:12 to 1:12	1:12 to 2:12	2:12 to 3:12	3:12 to 6:12	6:12 to 12:12	GREATER THAN 12:12
HOT ASPHALT	COLD ADHERED	32'	NR	NR	NR	NR	NR
	HEAT WELDED	32'	NR	NR	NR	NR	NR
HEAT WELDED	COLD ADHERED	32'	24'	16'	16'	12'	NR
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
COLD ADHERED	HEAT WELDED	32'	24'	16'	16'	12'	NR
	COLD ADHERED	32'	24'	16'	16'	12'	NR
SOPRAFIX	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
	COLD ADHERED	32'	24'	16'	16'	12'	NR
	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
SELF ADHERED	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'

n/a = Cap sheet end lap spans are not limited. End lap fastening is not required.

NR = Assembly is not recommended at specified slope.

Figure 5.2a Steep Sloped Granular Surfaced Cap Sheet With Nailers

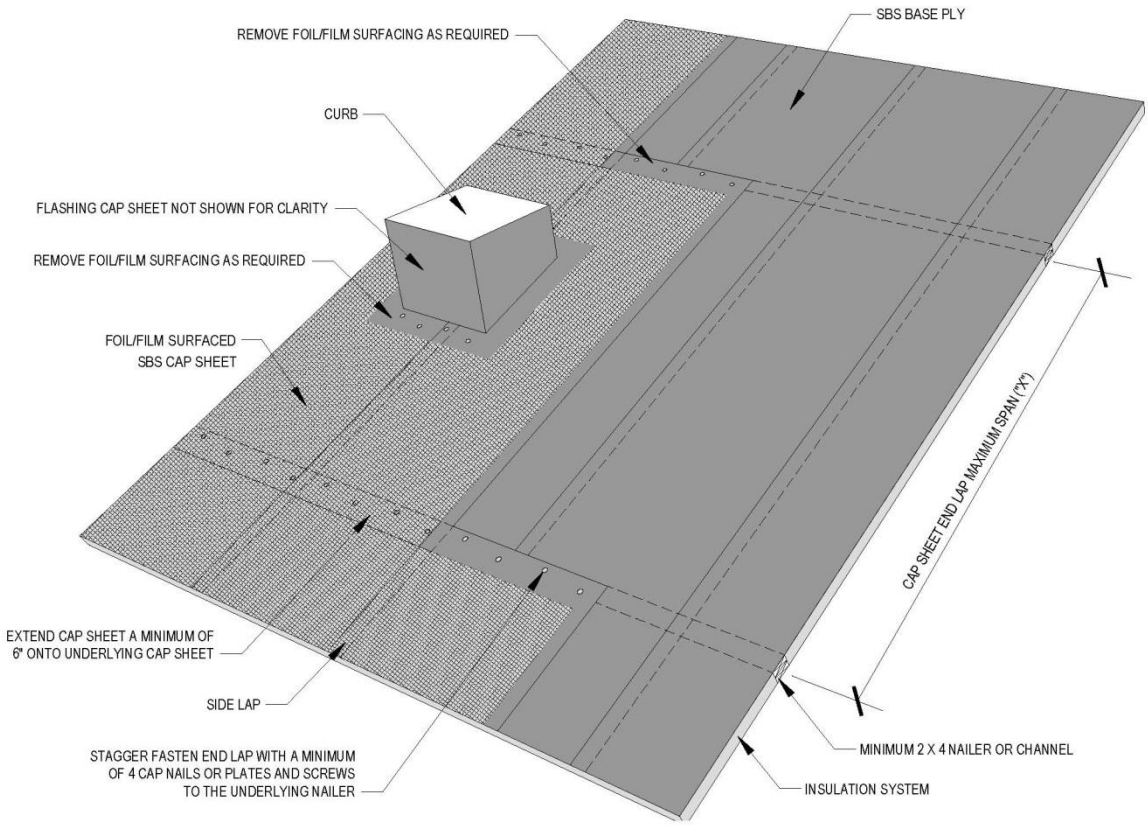


STEEP SLOPE MEMBRANE FASTENING REQUIREMENTS							
METHOD OF APPLICATION		CAP SHEET END LAP MAXIMUM SPAN ("X")					
BASE PLY(S)	CAP SHEET	1/2:12 to 1:12	1:12 to 2:12	2:12 to 3:12	3:12 to 6:12	6:12 to 12:12	GREATER THAN 12:12
HOT ASPHALT	COLD ADHERED	32'	NR	NR	NR	NR	NR
	HEAT WELDED	32'	NR	NR	NR	NR	NR
HEAT WELDED	COLD ADHERED	32'	24'	16'	16'	12'	NR
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
COLD ADHERED	HEAT WELDED	32'	24'	16'	16'	12'	NR
	COLD ADHERED	32'	24'	16'	16'	12'	NR
SOPRAFIX	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
	COLD ADHERED	32'	24'	16'	16'	12'	NR
	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
SELF ADHERED	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'

n/a = Cap sheet end lap spans are not limited. End lap fastening is not required.

NR = Assembly is not recommended at specified slope.

Figure 5.2b Steep Sloped Granular Surfaced Cap Sheet Without Nailers

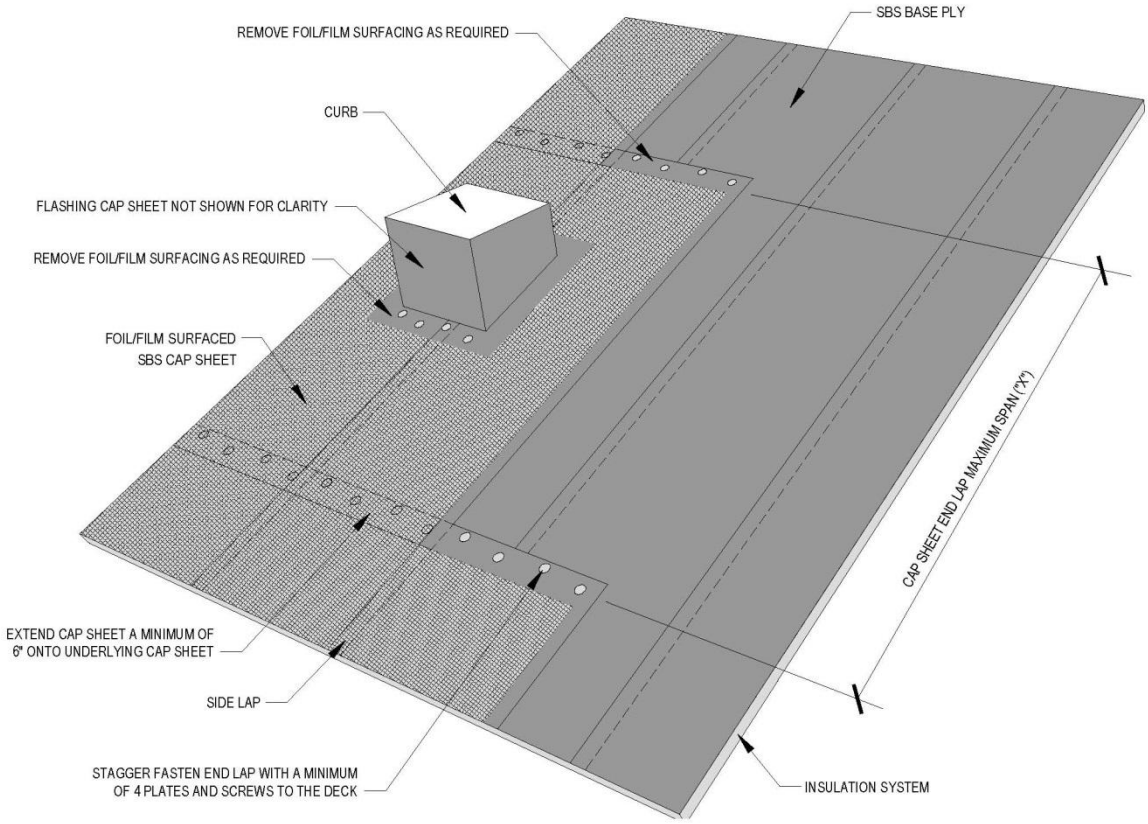


STEEP SLOPE MEMBRANE FASTENING REQUIREMENTS							
METHOD OF APPLICATION		CAP SHEET END LAP MAXIMUM SPAN ("X")					
BASE PLY(S)	CAP SHEET	1/2:12 to 1:12	1:12 to 2:12	2:12 to 3:12	3:12 to 6:12	6:12 to 12:12	GREATER THAN 12:12
HOT ASPHALT	COLD ADHERED	32'	NR	NR	NR	NR	NR
	HEAT WELDED	32'	NR	NR	NR	NR	NR
HEAT WELDED	COLD ADHERED	32'	24'	16'	16'	12'	NR
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
COLD ADHERED	HEAT WELDED	32'	24'	16'	16'	12'	NR
	COLD ADHERED	32'	24'	16'	16'	12'	NR
SOPRAFIX	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
	COLD ADHERED	32'	24'	16'	16'	12'	NR
	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
SELF ADHERED	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'

n/a = Cap sheet end lap spans are not limited. End lap fastening is not required.

NR = Assembly is not recommended at specified slope.

Figure 5.2c Steep Sloped Foil/Film Surfaced Cap Sheet With Nailers



STEEP SLOPE MEMBRANE FASTENING REQUIREMENTS							
METHOD OF APPLICATION		CAP SHEET END LAP MAXIMUM SPAN ("X")					
BASE PLY(S)	CAP SHEET	1/2:12 to 1:12	1:12 to 2:12	2:12 to 3:12	3:12 to 6:12	6:12 to 12:12	GREATER THAN 12:12
HOT ASPHALT	COLD ADHERED	32'	NR	NR	NR	NR	NR
	HEAT WELDED	32'	NR	NR	NR	NR	NR
HEAT WELDED	COLD ADHERED	32'	24'	16'	16'	12'	NR
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
COLD ADHERED	HEAT WELDED	32'	24'	16'	16'	12'	NR
	COLD ADHERED	32'	24'	16'	16'	12'	NR
SOPRAFIX	HEAT WELDED	n/a	n/a	24'	16'	12'	4'
	COLD ADHERED	32'	24'	16'	16'	12'	NR
	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
SELF ADHERED	SELF ADHERED	n/a	n/a	24'	16'	12'	4'
	HEAT WELDED	n/a	n/a	24'	16'	12'	4'

n/a = Cap sheet end lap spans are not limited. End lap fastening is not required.

NR = Assembly is not recommended at specified slope.

Figure 5.2d Steep Sloped Foil/Film Surfaced Cap Sheet Without Nailers

5.3 SBS MODIFIED BITUMEN CAP SHEET SURFACE PREPARATION

5.3.1 GRANULE-SURFACED CAP SHEET PREPARATION

General:

- SOPREMA® granule-surfaced cap sheets must be prepared at end-laps and other overlapping areas with adjacent cap sheets.
- Contact SOPREMA® for additional information.

Preparation:

- Using a torch or heat welder, preheat a round-nose trowel to prevent the bitumen and granules from sticking to the trowel.
- Apply heat to the end lap granule surfacing area to soften the bitumen beneath the granules.
- As the surfacing is heated, the granules will begin to sink into the bitumen. Remove the heat source from the surface. Use a hot trowel to embed the granules into the bitumen. Do not remove the bitumen or granules.
- An embedder tool is a specialized heated steel roller that can also be used to embed granules more efficiently.
- Refer to the following for additional information:
    - "Granulated Cap Membrane Granule Embedment Procedures" (Instructional Video)
        - Link: https://www.youtube.com/watch?v=E5WK-BzSbnQ&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q&index=7

5.3.2 FOIL/FILM-SURFACED CAP SHEET PREPARATION

General:

- Foil/Film surfaced cap sheets must be prepared at end-laps and other overlapping areas with adjacent cap sheets.
- Contact SOPREMA® for additional information.

Preparation:

- Allow for the adjacent cap sheet to be installed to extend ½ in beyond the lap mark.
- Using a knife blade, score the foil/film surfacing at the end lap mark. Ensure the SBS reinforcement is not cut.
- Using a torch or heat welder, preheat a round-nose trowel and insert under the foil/film surfacing to provide a "peel point".
- Apply heat to the top surface of the surfacing to be removed.
- As the surfacing is heated, peel away the surfacing.
- Refer to the following for additional information:
    - SOPRALAST™ 50 TV ALU Delamination Procedure (Instructional Video)
        - Link: https://www.youtube.com/watch?v=q3ugUdh-vew&index=8&list=PLCkWI-tgKqeWtmaTluoO3OLOgLSn7pD-q

5.4 LOW-PROFILE EXPANSION JOINTS

General:

- SOPREMA® SOPRAJOINT® PLUS is an EPDM-based synthetic rubber, monolithic expansion joint used for low profile expansion joint applications. Refer to Figures 5.4a through 5.4d.
- SOPRAJOINT® PLUS consists of an expandable core with flange surfacings composed of a woven polyacrylonitrile fabric.
- SOPRAJOINT® PLUS comes in varying gland widths to accommodate various gap openings and anticipated joint movement. Refer to product data sheets for more information.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.

Preparation:

- Contact SOPREMA® for guidance for measuring project conditions.
- Ensure environmental conditions are acceptable to proceed. Monitor precipitation, temperature, humidity, wind, cloud cover and sun that may have an effect on materials and roofing application.
- Conditions should remain dry, and the ambient temperature should be well above the dew point at all times during roofing application.
- Ensure all roofing substrates are prepared and acceptable to receive SOPRAJOINT® PLUS and flashing materials.
- Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.

Application:

- Refer to detail drawings for SOPRAJOINT® PLUS installation and flashing guidelines. See Figures 5.4a through 5.4d.
- Loose lay the SOPRAJOINT® PLUS to ensure positioning and measurements are accurate.
- Adhere SOPRAJOINT® PLUS to the base ply:
    - Heat-weld:
        - Direct roof torch or hot-air welder onto the heat-welded SBS base ply to melt bitumen.
        - Press SOPRAJOINT® PLUS into place to ensure full adhesion.
    - Cold adhesive:
        - Apply COLPLY™ EF FLASHING CEMENT to the sanded SBS base ply and back of SOPRAJOINT® PLUS.
        - Press SOPRAJOINT® PLUS into place to ensure full adhesion.
        - For heat-welded SBS base plies, remove burn-off film where COLPLY™ EF FLASHING CEMENT will be applied.
- Install fasteners as specified and shown on Figures Figures 5.4a through 5.4d.
- Immediately strip-in SOPRAJOINT® PLUS as shown on detail drawings to ensure the fabric flange surfacing is sealed watertight.
- Install the cap sheet and flashing cap sheet, extending to the gland of SOPRAJOINT® PLUS.
- Apply a bead of SOPRASEAL® SEALANT at the termination of the SBS plies and gland of SOPRAJOINT® PLUS.

Inspection:

- 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.

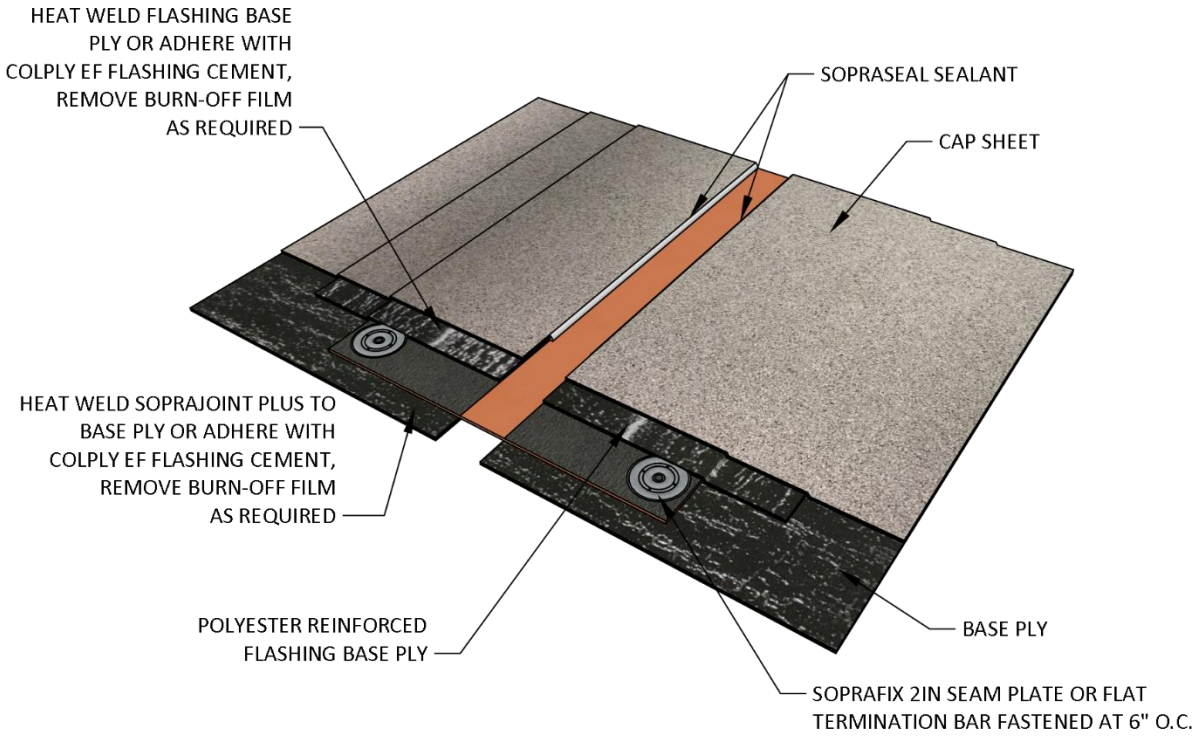


Figure 5.4a SOPRAJOINT® PLUS Field Expansion Joint On Heat-Welded SBS Base Ply Surface

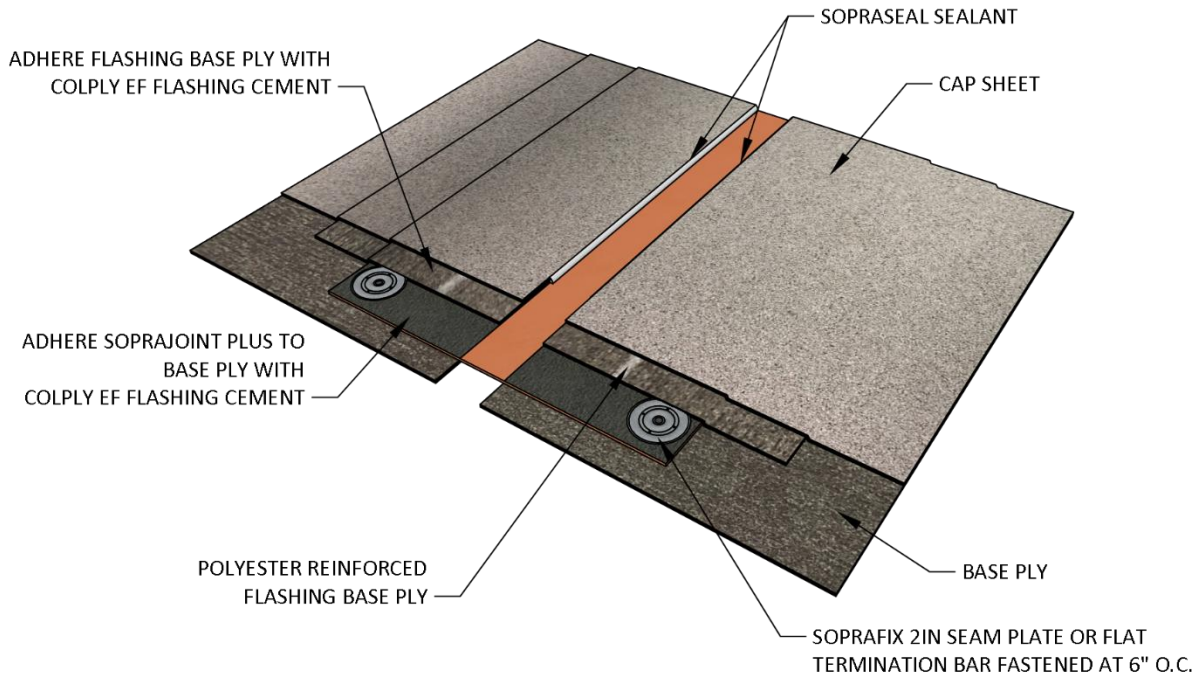


Figure 5.4b SOPRAJOINT® PLUS Field Expansion Joint On Sanded SBS Base Ply Surface

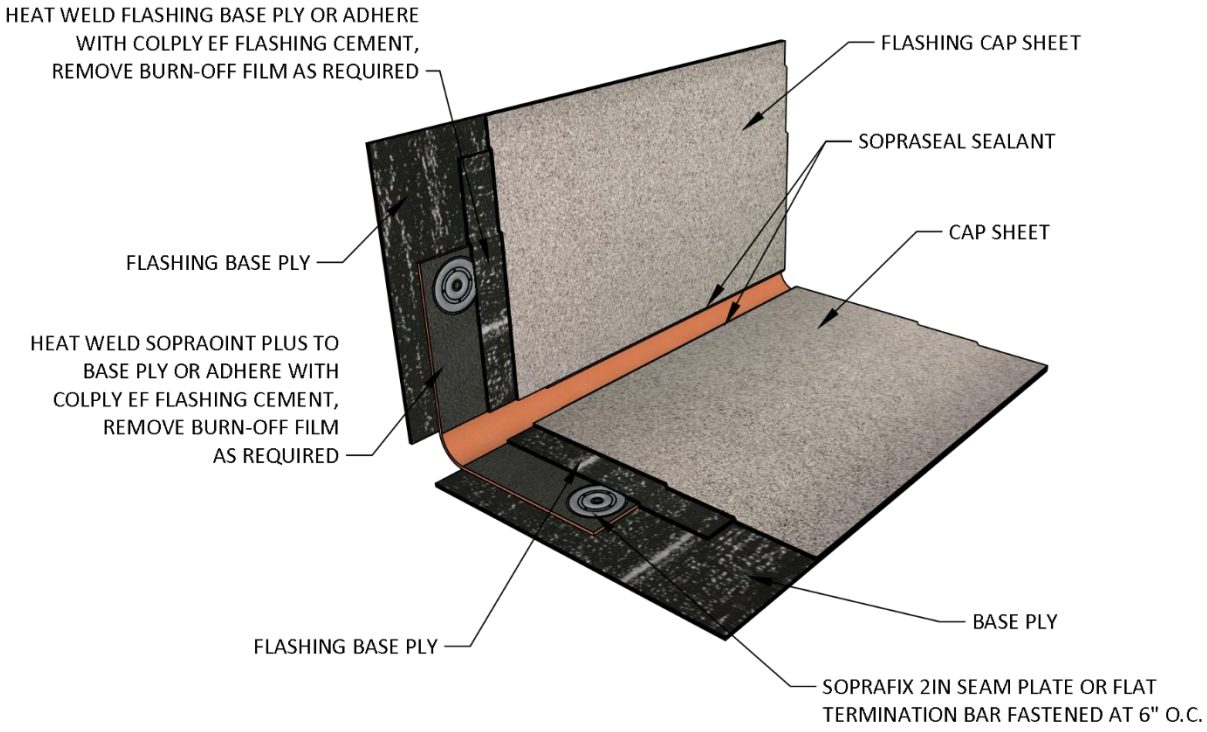


Figure 5.4c SOPRAJOINT® PLUS Wall Expansion Joint on Heat Welded SBS Base Ply Surface

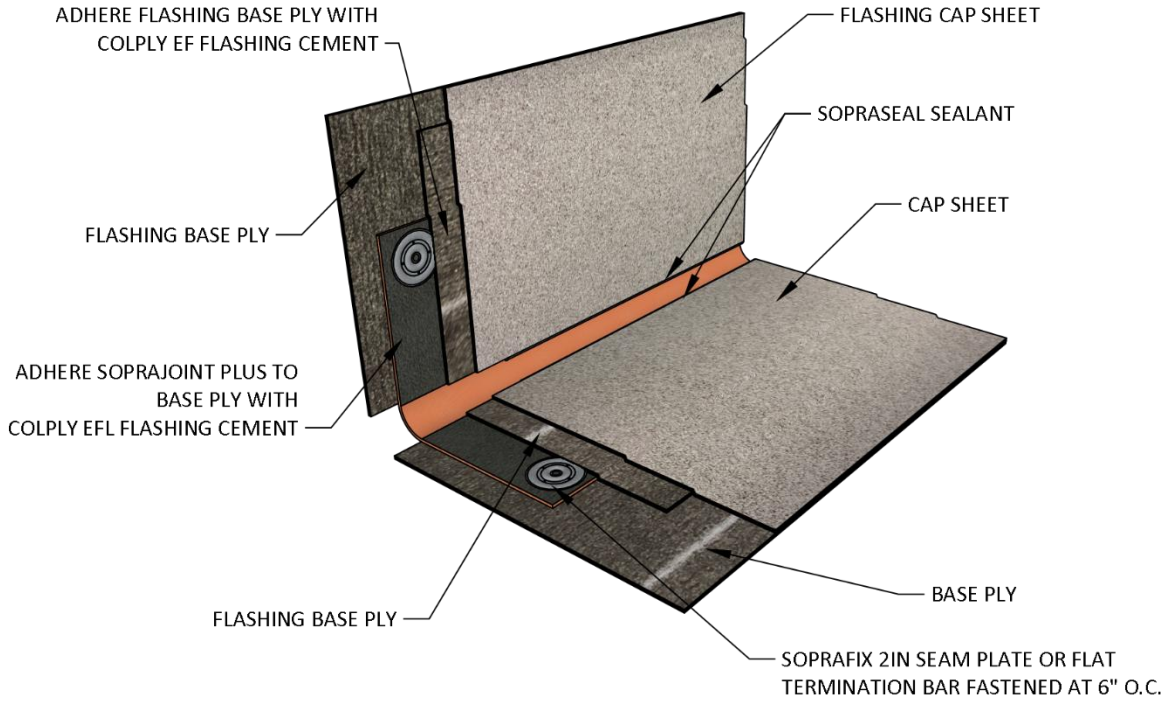


Figure 5.4d SOPRAJOINT® PLUS Wall Expansion Joint On Sanded SBS Base Ply Surface

5.5 SBS MASTICS AND SEALANTS

General:

- SOPREMA® mastics and sealants are used to seal roofing and flashing transitions, termination and penetrations. Refer to Table 5.5a for SOPREMA® products and applications.
- The contractor and/or applicator is responsible for managing and controlling all exposures related to chemical hazards, toxic substances and odors. This includes personal protective equipment (PPE), administrative and work practice controls, and engineering controls. The contractor is responsible for the elimination or substitution of products as necessary to manage and control exposures related to chemical hazards, toxic substances and odors.
- 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.
- Refer to the PDS and SDS for additional product information.

Table 5.5a SBS Mastics and Sealants

Product	Substrate	Application
SOPRAMASTIC™ SBS ELASTIC CEMENT	SBS base plies with sanded top surface	Mastic used to set soft metal flashings at roof drains, pipe boots, etc.
	SBS base plies with plastic burn-off film top surface	Mastic used to set soft metal flashings at roof drains, pipe boots, etc. Burn off plastic film from base ply before installing.
SOPRAMASTIC™ ALU	Edge metals	Sealant used to seal ends of SOPRALAST™ 50 TV ALU and SOPRALAST™ 50 TV ALU SANDED at edge metals where bleedout is not sufficient.
SOPRAMASTIC™ SP1	Concrete walls	Sealant used to seal reglets and surface mounted counterflashings.
	Brick/block walls	Sealant used to seal reglets and surface mounted counterflashings.
	Edge metals	Sealant used to seal SBS membranes at edge metal.
	Granular surfaced SBS cap sheets	Sealant used to spot adhere SBS walkway membranes.
		Sealant used to adhere lightning protection pads.
		Sealant used to seal exposed fasteners.
	Foil/Film surfaced SBS cap sheets	Sealant used to spot adhere SBS walkway membranes.
		Sealant used to adhere lightning protection pads.
SOPRALASTIC 124 ALU	SBS modified bitumen	Mastic used to treat bleed-out on SOPRALAST™ 50 TV ALU and SOPRALAST™ 50 TV ALU SANDED.
#101 ALL WEATHER PLASTIC CEMENT	SBS, APP, and BUR	Utility asphaltic base plastic roof cement ideal for night tie-ins and repairs in wet or dry conditions.