



CARLISLE'S SURE-SEAL

Sure-Seal® Adhered Roofing System 30-year Golden Seal™ Total System Warranty

TABLE OF CONTENTS

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	Page
Part I - General	
1.01 Description.....	3
1.02 Design Options.....	3
1.03 Quality Assurance.....	4
1.04 Submittals.....	4
1.05 Product Delivery, Storage and Handling.....	5
1.06 Job Conditions.....	5
1.07 Warranty.....	5
Part II - Products	
2.01 General.....	6
2.02 Membrane.....	6
2.03 Insulation/Underlayments.....	6
2.04 Sure-Seal Fastener and Plates.....	8
2.05 Related Materials.....	8
2.06 Other Carlisle Accessories.....	9
Part III - Execution	
3.01 General.....	10
3.02 Roof Deck Criteria.....	10
3.03 Substrate Preparation.....	10
3.04 Installation.....	11
A. Insulation Attachment.....	11
B. Membrane Installation.....	11
C. Additional Membrane Securement.....	12
D. Flashing.....	13
1. General Flashing Considerations.....	13
2. Overlayment at Angle Change.....	13
3. Overlayment at "T" Joints.....	13
4. Overlayment at Flashing Overlaps.....	14
5. Corner Flashings.....	14
6. Roof Drains.....	14
7. Other Penetrations.....	15
8. Metal Edging.....	15
3.05 Other Related Work.....	16



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This Carlisle Sure-Seal Adhered Roofing System specification outlines the various membrane assemblies by which a 30-year Golden Seal Total System Warranty can be achieved. While certain specific requirements have been outlined herein due to the use of **90-mil thick EPDM Membrane**, application procedures for items such as membrane bonding, membrane cleaning/priming, SecurTAPE™ application, etc., are contained in Carlisle's Adhered Roofing System Specifications in Part II, Application, and can still be referenced for specific installation procedures. Installation details pertaining to the application of this roofing system have been included at the end of this section and have been designated as **X3A Details**. The use of any other Carlisle standard detail is not acceptable.

PART I GENERAL

1.01 DESCRIPTION

This Design "A" Adhered Roofing System incorporates **Sure-Seal (black) 90-mil thick non-reinforced EPDM membrane**. An acceptable Carlisle insulation is mechanically fastened to the roof deck or adhered with FAST™ Adhesive and the EPDM membrane is fully adhered to the insulation or an acceptable membrane underlayment with Sure-Seal 90-8-30A Bonding Adhesive. Adjoining sheets of EPDM membrane are spliced together with 6" wide SecurTAPE/Primer (Factory-Applied TAPE is also available). Splice intersections are overlaid with two layers of uncured and semi-cured Pressure-Sensitive Flashing. All field and flashing splices are sealed with Sure-Seal Lap Sealant.

1.02 DESIGN OPTIONS

In addition to the **puncture resistance coverage** associated with the 30-year Golden Seal Total System Warranty, **wind speed and hail coverage** is influenced by the roof assembly selected and the use of specific membrane underlayments to which the membrane is to be adhered.

A. **Projects with 100 mph peak gust wind speed and 2" hail coverage**

The membrane assembly must incorporate **Sure-Seal Polyisocyanurate/OSB Composite Insulation** or 7/16" thick Oriented Strand Board (OSB) installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) or other acceptable Carlisle insulation with all joints staggered between layers. Except for fibrous cement and gypsum decks, both layers of insulation may be mechanically fastened or FAST Adhesive may be used to adhere the top layer of Sure-Seal Polyiso/OSB Composite insulation. Projects with fibrous cement or gypsum decks, both Sure-Seal Polyiso insulation and Sure-Seal Polyiso/OSB Composite must be attached with FAST Adhesive in order to obtain the 100 mph peak gust wind speed coverage. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment and Detail X3A-D.

Note: On fibrous cement or gypsum decks, when a single layer of insulation is specified, Sure-Seal Polyiso/OSB Composite must be used in conjunction with FAST Adhesive, however, the maximum thickness shall not exceed 2-1/2".

B. **Projects with 72 mph peak gust wind speed and 2" hail coverage**

The membrane assembly must incorporate **1/2" thick Dens-Deck Prime (supplied by Carlisle)** as a membrane underlayment installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) or other acceptable Carlisle insulation with all joints staggered between layers. Both layers may be mechanically fastened (excluding fibrous cement or gypsum decks) or adhered with FAST Adhesive, where applicable. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment and Detail X3A-C.

Notes: On fibrous cement or gypsum decks, the use of Sure-Seal Polyiso/OSB Composite insulation is required in order to obtain the 72 mph peak gust wind speed coverage. The composite board must be attached with FAST Adhesive if specified as a single layer (maximum thickness 2-1/2"). In multiple layer applications, the bottom layer shall be Sure-Seal Polyiso or other acceptable Carlisle Insulation and may be mechanically fastened with the appropriate Carlisle Fastener and Plate.

C. **Projects with 55 mph peak gust wind speed and 2" hail coverage**

The membrane assembly must incorporate **1/2" thick HP Recovery Board or 1/4" thick Dens-Deck Prime (supplied by Carlisle)** installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) or other acceptable Carlisle insulation with all joints staggered between layers. Both layers may be mechanically fastened or FAST Adhesive may be used to adhere the HP Recovery Board top layer. The use of FAST Adhesive is not permitted to attach the 1/4" thick Dens-Deck Prime. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment and Detail X3A-B, Option #2.

D. **Projects with standard wind speed coverage (55 mph peak gust wind speed) and no hail coverage.**

1. The membrane assembly must incorporate a top layer of Carlisle Polyisocyanurate insulation with **25 psi compressive strength and a thickness between 1.5" and 2.5" thick**, installed over a base layer of Sure-Seal Polyisocyanurate insulation with standard 20 psi compressive strength with all joints staggered between layers. Both layers may be mechanically fastened or adhered with FAST Adhesive, where applicable. Refer to Detail X3A-A, Option 1.

Note: When both layers of insulation are of the same thickness, Sure-Seal Polyisocyanurate with a 25 psi compressive strength must be used for both layers to avoid mixing boards with different compressive strength in each layer.

2. The membrane assembly may incorporate a single layer of Sure-Seal Polyisocyanurate Insulation with 25 psi compressive strength and a thickness between 2" to 2.5" if the board is to be mechanically fastened. Where FAST Adhesive is permitted, the thickness of the single layer shall be between 1.4" to 2.5".
3. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment.

1.03 QUALITY ASSURANCE

- A. This roofing system must be installed by a Carlisle Authorized Applicator approved to install this 30-year Adhered Membrane Assembly. The installation of this roofing system must be in compliance with Carlisle's specification and the shop drawings as approved by Carlisle. There must be no deviations made from Carlisle's specifications or the approved shop drawings without the **PRIOR WRITTEN APPROVAL** of Carlisle.
- B. Upon completion of the installation, an inspection will be conducted by a Technical Representative of Carlisle to ascertain that the roofing system has been installed according to Carlisle's specifications and details.
- C. As of this publication, this Sure-Seal Adhered Roofing System meets **Underwriters Laboratories (UL) Class A ratings** as follows:
 1. Slopes up to 1" when installed over HP Recovery Board or Oriented Strand Board
 2. Slopes up to 1/2" directly over Sure-Seal Polyisocyanurate
 3. Slopes up to 3" over Dens-Deck Prime
- D. This roofing system also meets **Factory Mutual (FM) Class 1A-60 and 1A-90** requirements.
 1. Slopes up to 1/2" over Polyisocyanurate
 2. Slopes up to 1-1/2" over HP Recovery Board

Refer to the applicable Code Bulletin or contact Carlisle for specific assembly requirements and greater FM ratings achieved when using FAST Adhesive.

1.04 SUBMITTALS

- A. To ensure compliance with Carlisle's warranty requirements, all projects must be forwarded to Carlisle for review prior to installation, preferably prior to bid. A roof plan and applicable details must be included as part of the submittal.
- B. On specialized buildings such as air pressurized buildings, canopies, buildings with large openings where the total wall openings exceed 10% of the total wall area on which the openings are located (such as airport hangars, warehouses and large maintenance facilities) and cold storage/freezer facilities, additional information will be required.
- C. Along with the project submittals (shop drawing and Request for Warranty), the roofing contractor must include pullout test results when the Sure-Seal HP-NTB Fastener is used with cementitious wood fiber or the Sure-Seal HP-NTB or Lite Deck Fastener is used with gypsum decks.
- D. For all projects, a final shop drawing must be approved by Carlisle prior to installation. **No As-Built projects are permitted.**

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the original, unopened containers labeled with the manufacturer's name, brand name and installation instructions.
- B. Job site storage temperatures in excess of 90° F may affect shelf life of curable materials (i.e., uncured and semi-cured Pressure-Sensitive Flashing, "T" Joint Covers, adhesives, sealants, Primers, Splice Tape and Pourable Sealer).
- C. When liquid adhesives and sealants are exposed to lower temperatures, restore to a minimum of 60° F before use.
- D. Do not store adhesive containers with opened lids due to loss of solvent that will occur from flash off.
- E. Insulation and underlayment must be stored so it is kept dry and is protected from the elements. Store insulation on a skid and completely cover with a breathable material such as tarp or canvas. If the insulation is lightweight, it should be weighted to prevent possible wind damage.

1.06 JOB CONDITIONS

- A. A minimum roof slope of 1/4" in 12" is recommended. Projects with a roof slope of minimum 1/8" in 12" may be accepted providing adequate positive drainage is provided. There is no maximum slope restriction for the application of this roofing system.

Drainage must be evaluated by the specifier in accordance with all applicable codes. Slopes may be provided by tapering the structure or through the use of tapered insulation; a sufficient number of roof drains should also be specified and properly located to allow for positive drainage. Significant ponding that could remain after 48 hours is not acceptable and must be eliminated with crickets/saddles and/or the addition of auxiliary drains in low areas where ponding is anticipated.

- B. On retrofit projects, all existing roofing material must be totally removed.
- C. When the use of a vapor retarder is considered, refer to Paragraph 3.03.E.
- D. Coordination between various trades is essential to avoid unnecessary rooftop traffic over sections of the roof and to prevent damage to the membrane or the membrane underlayment.

1.07 WARRANTY

- A. **The 30 year Golden Seal Total System Warranty** is available for a charge on commercial buildings within the United States and Canada and requires all components utilized to be of those manufactured or marketed by Carlisle. This warranty includes coverage against incidental membrane punctures, hail damage and windstorms up to 100 mph peak gust wind speeds. Refer to Design Options for criteria pertaining to a particular roofing assembly and the required membrane underlayment.

APPLICATIONS SUCH AS WALKING DECKS, TERRACES, PATIOS OR AREAS SUBJECTED TO CONDITIONS NOT TYPICALLY FOUND ON ROOFING SYSTEMS WILL **NOT** BE ELIGIBLE FOR A ROOFING SYSTEM WARRANTY

- B. It shall be the owner's responsibility to expose the membrane in the event warranty service is required when access is impaired. Such impairment includes, but is not limited to:
 - 1. Design features, such as window washer systems, which require the installation of traffic surface units in excess of 80 pounds per unit.
 - 2. Any equipment, ornamentation, building service units and other top surfacing materials that are not defined as part of this specification.
 - 3. Rooftop equipment that does not provide Carlisle with reasonable access to the membrane system for purposes of warranty investigation and related repairs.
 - 4. Ponded conditions.
- C. THE FORMATION OR PRESENCE OF MOLD OR FUNGI IN A BUILDING IS DEPENDENT UPON A BROAD RANGE OF FACTORS INCLUDING, BUT NOT LIMITED TO, THE PRESENCE OF SPORES AND NUTRIENT SOURCES, MOISTURE, TEMPERATURES, CLIMATIC CONDITIONS, RELATIVE HUMIDITY, AND HEATING / VENTILATING SYSTEMS AND THEIR MAINTENANCE AND OPERATING CAPABILITIES. THESE FACTORS ARE BEYOND THE CONTROL OF CARLISLE AND CARLISLE SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS, REPAIRS, RESTORATION, OR DAMAGES RELATING TO THE PRESENCE OF ANY IRRITANTS, CONTAMINANTS, VAPORS, FUMES, MOLDS, FUNGI, BACTERIA, SPORES, MYCOTOXINS, OR THE LIKE IN ANY BUILDING OR IN THE AIR, LAND, OR WATER SERVING THE BUILDING.

PART II PRODUCTS

2.01 GENERAL

The components of this roofing system must be products manufactured or supplied by Carlisle SynTec Incorporated.

2.02 MEMBRANE

Maximum 10 foot wide **Sure-Seal** (black) 90-mil thick non-reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) is required for this roofing system and meets the physical properties of ASTM D4637 as follows.

Physical Property	Test Method	SPEC.(Pass)	Typical 90-Mil
Tolerance on Nominal Thickness, %	ASTM D 412	±10	±10
Tensile Strength, min, psi (MPa)	ASTM D 412	1305 (9)	1650 (11.3)
Elongation, Ultimate, min, %	ASTM D 412	300	480
Tear Resistance, min, lbf/in (kN/m)	ASTM D 624 (Die C)	150 (26.3)	195 (34.2)
Resistance to Heat Aging* Properties after 4 weeks @ 240°F (116°C)	ASTM D 573		
Tensile Strength, min, psi (MPa)	ASTM D 412	1205 (8.3)	1500 (10.3)
Elongation, Ultimate, min, %	ASTM D 412	200	225
Tear Resistance, min, lbf/in (kN/m)	ASTM D 624	125 (21.9)	215 (37.6)
Linear Dimensional Change, max, %	ASTM D 1204	±1.0	-0.4
Ozone Resistance* Condition after exposure to 100 ppm Ozone in air for 168 hours @ 104°F (40°C) Specimen is at 50% strain	ASTM D 1149	No Cracks	No Cracks
Brittleness Temp., max, deg. F (deg. C)*	ASTM D 746	-49 (-45)	-67 (-55)
Resistance to Water Absorption* After 7 days immersion @ 158°F (70°C) Change in mass, max, %	ASTM D 471	+8.0, -2.0	+2.0
Water Vapor Permeance* max, perm	ASTM E 96 (Proc. B or BW)	0.10	0.05
Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, 7560 kJ/m ² total radiant exposure at .70 W/m ² irradiance, 176°F (80° C) black panel temp.	ASTM G 155	No Cracks No Cracking	No Cracks No Cracking
* Not a Quality Control Test due to the time required for the test or the complexity of the test. However, all tests are run on a statistical basis to ensure overall long-term performance of the sheeting.			

2.03 INSULATION/UNDERLAYMENT

A. **Sure-Seal Polyisocyanurate HP-H:** A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-01. Meets test method CAN/ULC-S770 for determining a 15 year time-weighted average Long Term Thermal Resistance (LTTR). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches in .1 inch increments. 4' x 4' tapered panels are also available.

- Sure-Seal Polyisocyanurate (25 psi minimum):** Sure-Seal Polyisocyanurate with a minimum compressive strength of 25 psi is required when direct adhesion of the membrane is specified. The minimum thickness is 1.4" and the maximum shall not exceed 2.5" as outlined in Paragraph 1.02, Design Options.
- Sure-Seal Polyisocyanurate (20 psi minimum):** Sure-Seal Polyisocyanurate with a minimum compressive strength of 20 psi is used in conjunction with a membrane underlayment of Sure Seal HP Recovery Board, Dens-Deck Prime or Oriented Stand Board (OSB). It is also used in conjunction with 25 psi Polyisocyanurate or Sure-Seal Polyisocyanurate/OSB Composite when additional R-Value is required. Maximum board thickness shall be limited to 2.5" when used as a base layer in conjunction with FAST Adhesive. When a greater R-Value is desired, multiple layers shall be used.

Sure-Seal Polyisocyanurate Physical Properties

Property	Test Method	Specification	
		25 psi	20 psi
Compressive Strength	ASTM D 1621 Procedure A	Min. 25	Min. 20
Moisture Vapor Transmission, perms	ASTM D 355	Max. 1.0	Max. 1.0
Foam Core Density lb/ft ³	ASTM D 1622	Min. 2.0	Nominal 2.0
Flame Spread (foam core)	ASTM E 84	Max. 25	Max. 25
Service Temperature, range in ° F	--	-100 to 250	-100 to 250

Refer to applicable Technical Data Bulletin for available thickness and Long-Term Thermal Resistance (LTTR).

- B. **Sure-Seal SecurShield™ Polyiso:** A foam core insulation board covered on both sides with a coated glass fiber mat facer meeting ASTM C 1289-05a. Meets test method CAN/ULC-S770 for determining a 15 year time-weighted average Long Term Thermal Resistance (LTTR). The product is available in 4' x 8' standard size with a thickness from 1 to 4 inches. 4' x 4' tapered panels are also available.
1. **Sure-Seal SecurShield Polyiso (25 psi minimum):** Sure-Seal SecurShield Polyiso with a minimum compressive strength of 25 psi is required when direct adhesion of the membrane is specified. The minimum thickness is 1.5" and the maximum shall not exceed 2.5" as outlined in Paragraph 1.02, Design Options.
 2. **Sure-Seal SecurShield Polyiso (20 psi minimum):** Sure-Seal SecurShield Polyiso with a minimum compressive strength of 20 psi is used in conjunction with a membrane underlayment of Sure Seal HP Recovery Board, Dens-Deck Prime or Oriented Strand Board (OSB). It is also used in conjunction with 25 psi SecurShield Polyiso or Sure-Seal Polyisocyanurate/OSB Composite when additional R-Value is required. Maximum board thickness shall be limited to 2.5" when used as a base layer in conjunction with FAST Adhesive. When a greater R-Value is desired, multiple layers shall be used.

Sure-Seal SecurShield Polyiso Physical Properties

Property	Test Method	Specification	
		25 psi	20 psi
Compressive Strength	ASTM D 1621 Procedure A	Min. 25	Min. 20
Moisture Vapor Transmission, perms	ASTM D 355	<1perm ((57.5 ng/(PA•s•m ²)))	<1perm ((57.5 ng/(PA•s•m ²)))
Foam Core Density lb/ft ³	ASTM D 1622	Min. 2.0	Nominal 2.0
Flame Spread (foam core)	ASTM E 84	<50	<50
Service Temperature, range in ° F	--	-100 to 250	-100 to 250

Refer to applicable Technical Data Bulletin for available thickness and Long-Term Thermal Resistance (LTTR).

- C. **Sure-Seal Polyisocyanurate/OSB Composite:** Sure-Seal Polyisocyanurate insulation bonded on the bottom side with a medium weight fiber-reinforced felt face and laminated with a top surface of 7/16" thick Oriented Strand Board (OSB). Available in 4' x 8' boards with thickness from 1-1/2" to 4" in 1/2" increments. Used as a membrane underlayment/insulation in assemblies where 100 mph peak gust wind speed coverage is specified.

Note: When FAST Adhesive is used to attach the Sure-Seal Polyisocyanurate/OSB Composite the maximum board thickness shall not exceed 2-1/2".

Physical Properties

Property	Test Method	Specification
Compressive Strength	ASTM D 1621	20 psi
Dimensional Stability	ASTM D 2126	2% Linear change 7 days
Moisture Vapor Transmission	ASTM E 96	<1perm ((57.5 ng/(PA•s•m ²)))
Water Absorption	ASTM C209	<1% volume
Service Temperature	--	-100 to 250° F

- D. **Sure-Seal HP Recovery Board:** A 1/2" or 1" thick high density wood fiberboard with an asphalt coated facer that can be specified for assemblies where a 55 mph peak gust wind speed and 2" hail coverage is required. The HP Recovery Board is used as a membrane underlayment over Sure-Seal Polyisocyanurate (minimum 20 psi) or Sure-Seal EPS or Extruded Polystyrene.
- E. **Sure-Seal EPS or Extruded Polystyrene Insulation:** May be specified beneath Sure-Seal HP Recovery Board, Dens-Deck Prime or Oriented Strand Board. Refer to applicable Technical Data Bulletin for physical properties.
- F. **Other Membrane Underlayments:**
1. **Dens-Deck Prime Roof Board** (supplied by Carlisle): 1/4", 1/2" or 5/8" thick moisture resistant treated gypsum core that incorporates glass-mat facings on the top and bottom side. The top surface is pre-primed and provides excellent bond strength. The Dens-Deck Prime may be used as a membrane underlayment in conjunction with other Carlisle insulations for roofing assemblies where 55 mph (1/4" thick) or 72 mph (1/2" or 5/8" thick) peak gust wind speed coverage and hail coverage of 2" is specified.
 2. **Oriented Strand Board (OSB):** Minimum 7/16" thick APA rated exterior grade wood strands bound with a waterproof heat-cured adhesive. Required as a membrane underlayment in conjunction with other Carlisle insulations when 100 mph peak gust wind speed and 2" hail coverage is specified. OSB is not supplied Carlisle but can be included in the Carlisle warranty for an upcharge.

2.04 SURE-SEAL FASTENERS AND PLATES

- A. **HP Fastener:** A threaded, black epoxy electro-deposition coated (E-Coat) fastener for use with steel, wood plank or minimum 15/32" thick plywood decks. Minimum 360 pounds pullout resistance is required.
- B. **HP-X Fasteners:** A heavy-duty #15 threaded fastener with a Phillips head for use where increased pullout resistance is necessary. Used for steel and wood decks. Minimum 360 pullout resistance is required.
- C. **CD-10 Concrete Fastener:** A hammer-driven, non-threaded, black epoxy electro-deposition coated (E-Coat) fastener for use with structural concrete decks rated 3,000 psi or greater. Minimum 800 pounds pullout resistance is required.
- D. **HD 14-10 Concrete Fastener:** A #14 threaded fastener used for minimum 3,000 psi concrete decks. Minimum 800 pounds pullout resistance is required.
- E. **HP-NTB Fastener:** A non-penetrating, plastic fastener and corresponding plate used with lightweight deck substrates such as cementitious wood fiber and gypsum. Minimum 225 pounds (cementitious wood fiber decks) and 300 pounds (gypsum decks) pullout resistance is required.
- F. **Lite-Deck Fastener:** An oversized diameter, metal-coated fastener with a deep coarse thread design used to achieve high pullout resistance into gypsum decks. Minimum 300 pounds pullout resistance is required.
- G. **Term Bar Nail-In:** A 1-1/4" long expansion anchor with stainless steel drive pin used for fastening the Sure-Seal Termination Bar or Seam Fastening Plates to concrete, brick or block walls.
- H. **Insulation Fastening Plate:** A nominal 3" diameter FM approved metal plate used for insulation attachment in conjunction with Sure-Seal Fasteners.

2.05 RELATED MATERIALS

- A. **FAST Adhesive:** A two-component polyurethane, construction grade, low-rise expanding foam adhesive used for attaching approved insulations to concrete, cellular lightweight insulating concrete, gypsum or cementitious wood fiber decks.
- B. **FAST Adhesive Catalyst:** Added to FAST Adhesive (Part B Side) to quicken adhesive reaction time.
- C. **Sure-Seal SecurTAPE™:** A 6" wide by 100' long splice tape used for splicing adjoining sections of EPDM membrane or 3" wide by 100' long splice tape used for the attachment of the 6" wide RUSS to the underside of the field membrane.
- D. **Sure-Seal HP-250 Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products.
- E. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal EPDM membranes to various surfaces.
- F. **X-TENDA COAT:** A water-based, high solids, elastomeric coating used with EPDM membrane. Available in standard colors of white and gray. Prior to applying X-TENDA COAT, **EPDM Primer** (a spray applied, single component, water-based wash/primer) is applied and reacts with the EPDM membrane surface to ensure a strong bond to the acrylic coating.
- G. **Flashing Accessories**
 - 1. **Sure-Seal Pressure-Sensitive Flashing:** A nominal 40-mil black, **semi-cured** EPDM membrane laminated to a nominal 30-mil cured, pre-applied adhesive tape. Available in 6" and 9" widths and 100' long rolls used to flash metal edgings and as an overlayment over field seams around curbs or skylights.
 - 2. **Sure-Seal Uncured Pressure-Sensitive T-Joint Covers:** A factory cut 6" x 6" (rounded corners), 40-mil thick uncured EPDM flashing laminated to a nominal 30-mil cured pre-applied tape, used to overlay field splice intersections and to cover field splices at angle changes.
 - 3. **Sure-Seal Semi-Cured Pressure-Sensitive T-Joint Covers:** A factory cut 12" x 12" (rounded corners), 40-mil thick semi-cured EPDM flashing laminated to a nominal 30-mil cured pre-applied tape, used to overlay the uncured Pressure-Sensitive T-Joint Covers.
 - 4. **Sure-Seal Pressure-Sensitive Uncured Elastoform® Flashing:** A 6" x 100', 9" x 50', or 12" x 50', 40-mil thick **uncured** EPDM Flashing laminated to a 30-mil pre-applied adhesive tape used in conjunction with Sure-Seal Primer. Used to flash inside/outside corners, vent pipes and other penetrations.

- RUSS™ (Reinforced Universal Securement Strip):** A 6" or 9" wide, 100' long, strip of Sure-Seal (black) reinforced EPDM membrane used for membrane securement at angle changes and roof edges.

H. Metal Accessories

- SecurEdge™:** A 26 gauge galvanized metal water dam and .050" thick aluminum or 24 gauge galvanized steel fascia. The fascia is available in a variety of colors and heights varying from 4-1/4" to 7-1/4". A fascia extension, which yields a 6" exposed face height, is also available. Custom fascias and colors are available upon request.
- SecurEdge 2000:** An anchor bar roof edge fascia system consisting of heavy .100" thick extruded aluminum bar, corrosion resistant stainless steel fasteners and snap-on fascia cover. Refer to installation instructions for various sizes, colors and accessories.
- SecurEdge 3000:** A metal anchor bar fascia system consisting of a 20 gauge steel retainer bar, corrosion resistant fasteners and an aluminum or 24 gauge steel snap-on fascia cover.
- Sure-Seal Drip Edge:** A 22 gauge continuous 12' pre-punched 90-degree angle cleat and 12' long fascia section. Incorporates concealed joint covers and strong 1-1/4" ring shank nails to provide long-term holding power. A selection of colors in 24 gauge steel, Kynar® 500 and .032" aluminum mil finish or Kynar 500 is available.
- SecurEdge Coping:** Incorporates an anchor cleat with pre-slotted holes, a concealed joint cover and 10' or 12' continuous sections of coping cap consisting of .040", .050", .063" or .080" thick Kynar 500, clear and colored anodized finish or 24 gauge steel, Kynar 500 finish. The coping cap is available in a variety of colors and widths. Custom pieces such as tees, crosses, radius copings, etc., are also available.
- Shop Fabricated Metal:** When the use of the Carlisle metal accessories is not feasible and custom fabrication by Carlisle is not available, shop fabricated metal may be incorporated for terminations around roof edges or parapets. Shop fabrication of non-Carlisle metal must be in compliance with the table below and must be fastened in accordance with National Roofing Contractor's Association (NRCA) standards.

Recommended Minimum Gauges for Fascia and Cleat¹

Exposed Face Without Brakes	Aluminum Alloy (3003-H14)	Galvanized or Coated (G60 & G90) Steel	Stainless Steel (302 & 304)	Cleat ²
Up to 3" Face	.040"	24 gauge	24 gauge	Same gauge as fascia metal
3" to 6" Face	.050"	24 gauge	24 gauge	One gauge heavier than fascia metal
6" to 8" Face	.060"	22 gauge	22 gauge	One gauge heavier than fascia metal
Over 8" Face	Refer to SMACNA or NRCA Published Guidelines for Requirements			
Notes:				
1. Consideration must be given to wind zone and local conditions in regard to the selection of metal gauge, profile and fastening schedule. Severe conditions or code and regulatory bodies may require more conservative designs. When using the above table, additional items should be considered, such as fastening pattern.				
2. All cleats shall be continuous with lengths not to exceed 12 feet. Allow a 1/4" gap between pieces. Joints in cleat should not coincide with joints in fascia metal.				

Even though metal work by others is not covered by the Carlisle warranty, details where the non-Carlisle metal is used must be reviewed and approved by Carlisle prior to installation and preferably prior to project bid. Projects with non-Carlisle metal are not available for projects where 100 mph peak gust wind speeds are specified.

- Sure-Seal Termination Bar:** A 1" wide and .098" thick extruded aluminum bar pre-punched 6" on center which incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

2.06 OTHER CARLISLE ACCESSORIES

Refer to the Carlisle Specification Manual "Products" Section for other Carlisle accessories (i.e., Lap Sealant, Pressure-Sensitive Pre-Molded Pipe Flashings and Pourable Sealer Pockets, Seam Fastening Plates, roof walkways, etc.) that are used with this roofing system.

PART III EXECUTION

3.01 GENERAL

When feasible, begin the application at the highest point of the highest roof level and work to the lowest point to prevent moisture infiltration and to minimize construction traffic on completed sections. This will include completion of all flashings and terminations.

3.02 ROOF DECK CRITERIA

- A. Proper decking shall be provided by the building owner. The structure shall be sufficient to withstand normal construction loads and live loads.
- B. Defects in the roof deck must be reported and documented to the specifier, general contractor and building owner for assessment. The Carlisle Authorized Roofing applicator shall not proceed unless the defects are corrected.
- C. Acceptable decks and the applicable Sure-Seal Fasteners and/or FAST Adhesive options:
 - 1. **Steel, 22 gauge or heavier** – Sure-Seal HP or HP-X Fasteners are required with a minimum pullout of 360 pounds per fastener.
 - 2. **Structural Concrete, rated 3,000 psi or greater** – Sure-Seal CD-10 (hammer-driven) or HD 14-10 (threaded) Fasteners are required with a minimum pullout of 800 pounds per fastener. FAST Adhesive is an acceptable alternate.
 - 3. **Wood Plank or minimum 15/32 inch thick Plywood** – Sure-Seal HP or HP-X Fasteners are required with a minimum pullout of 360 pounds.
 - 4. **Cementitious Wood Fiber and Gypsum** – Sure-Seal HP-NTB or Lite Deck (gypsum decks only) Fasteners are required with a minimum pullout of 225 pounds for cementitious wood fiber decks and 300 pounds for gypsum decks. FAST Adhesive is an acceptable alternate.
- D. When fasteners are to be used for securement of roof insulation and membrane underlayment, pullouts may be conducted to determine the values as stated above are achieved. When pullout values are less than those listed above, Carlisle must be contacted to determine if an alternate fastening pattern may be required.

3.03 SUBSTRATE PREPARATION

- A. On retrofit projects, **all existing roofing material must be removed** down to the roof deck.
- B. For all projects, the substrate must be even without noticeable high spots or depressions, and must be free of accumulated water, ice or snow.
- C. Prior to placement of new insulation or membrane underlayment, clear the substrate of debris and foreign material. Fresh bitumen based roof cement must be removed or concealed.
- D. **Wood Nailers**

A **horizontal wood nailer** is used to provide an effective substrate for some installation details and for other roof accessories. In addition, it is used to provide solid protection for the edge of the membrane underlayment. Minimum thickness of the nailer must be such that the top of the nailer is relatively flush with the top of the membrane underlayment.

- 1. Wood nailers are required for the securement of metal edgings, metal scuppers, and certain curbs, pourable sealer pockets, pipes, etc., as shown on the applicable detail. **Parapet walls and most curbs do not require the utilization of wood nailers.**

Note: The width of nailers must exceed the width of metal flange of edgings, scuppers, etc.

- 2. When treated lumber is specified, it is recommended that only lumber that has been pressure treated with salt preservatives be specified. Lumber treated with any of the wood preservatives such as, Creosote, Pentachlorophenol, Copper Naphthenate and Copper 8-quinolinolate will adversely affect the EPDM membrane when in direct contact and are, therefore, **unacceptable**.

If non-treated lumber is to be specified, it must be stored to protect it from moisture sources. A seal should be provided between the non-treated lumber and a concrete or gypsum substrate (similar to a sill sealer).

- 3. Methods used to fasten the nailer vary with building conditions; however, it is essential that secure attachment of durable stock be accomplished. Factory Mutual Loss Prevention Data Sheet 1-49 (Perimeter Flashing) contains options for the spacing and sizing of fasteners.

Note: To reduce air infiltration and to prevent excessive positive pressure beneath the membrane, the use of a moisture and insect resistant seal such as, a polyethylene gasket, a cellular foam product or other sealant is strongly recommended to seal any gaps between the wood nailer and the exterior walls. Projects with existing wood nailers may be sealed with a high-grade construction caulking, polyurethane foam or by extending the adhered EPDM membrane below the wood nailer when practical.

E. Vapor Retarder

The use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly should be investigated by the specifier, especially on projects with high interior humidity, such as, swimming pools, breweries, pulp mills, etc.

1. In the generally temperate climate of the United States, during the winter months, water vapor flows upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.
2. On cold storage/freezer facilities, the perimeter details must be selected to promote an air seal to prevent outside air from infiltrating and condensing within the roofing assembly.

Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information regarding dew point calculations and the necessary insulation R-Value. **Carlisle should be contacted concerning an acceptable vapor retarder.**

3.04 INSTALLATION

Refer to the applicable Material Safety Data Sheets and Technical Data Bulletins for cautions and warnings.

A. Insulation Attachment

1. General

- a. Do not install more insulation or underlayment than can be covered by membrane and made watertight in the same day.
 - b. All insulation boards must be butted together with no gaps greater than 1/4". Gaps greater than 1/4" must be filled with the same material.
 - c. Sure-Seal Fasteners must be installed in conjunction with 3" diameter Sure-Seal Insulation Fastening Plates.
2. Sure-Seal Polyisocyanurate Insulation, Oriented Strand Board (OSB)/Polyisocyanurate Composite, and HP Recovery Board or Dens-Deck Prime over an approved Carlisle insulation shall be mechanically fastened to the roof deck with 1 insulation fastener and plate every 2 square feet.
 3. When 7/16" thick Oriented Strand Board is used as a membrane underlayment over an approved Carlisle insulation, it shall be mechanically fastened at the minimum rate of 17 fasteners and plates per 4' x 8' board. Oriented Strand Board cannot be attached with FAST Adhesive. When the use of FAST Adhesive is desired in conjunction with OSB, an OSB/Polyisocyanurate Composite board must be used.

Note: HP Recovery Board, Dens-Deck Prime and Oriented Strand Board can only be used as a membrane underlayment in conjunction with an approved Carlisle insulation.

4. In roof assemblies with multiple layers of insulation, both insulation layers may be mechanically fastened or mechanical fasteners may be limited to the bottom layer and FAST Adhesive may be used to attach the top layer.
5. When mechanical attachment of the insulation is not desired over structural concrete, cementitious wood fiber and gypsum decks, an alternate insulation attachment method using FAST Adhesive may be specified.

Note: FAST Adhesive cannot be used to attach insulation to steel decks.

B. Membrane Installation

1. Starting from the high point working down slope, place membrane in a shingled fashion. Overlap adjoining sheets a minimum of 6" to 6-1/2" to provide for the minimum 5-1/2" wide splice.

Notes: When SecurEdge 2000 or 3000 is specified, position the first membrane sheet parallel to the roof edge along the entire perimeter (picture framing) to eliminate consecutive splice intersections with the edging and ensure proper alignment of the anchor bar edging.

With any SecurEdge Anchor Bar System (2000 or 3000) care shall be exercised to ensure proper compression and seal at the intersections with field seams. Offsets created by the field splices could create water channels and will require a heavy bead of Water Cut-Off Mastic along the intersecting splice.

2. Fully adhere the EPDM membrane to the acceptable substrate with 90-8-30A Bonding Adhesive at the rate specified on the container label.
 3. **Membrane Splicing With SecurTAPE** (Factory-Applied TAPE is also available):
 - a. Apply Sure-Seal HP-250 Primer to the splice area and allow to properly dry.
 - b. Position SecurTAPE onto bottom membrane sheet with the edge of the release film along a line marked 3/4" from the top sheet. Press tape onto sheet using hand pressure, overlapping tape roll ends a minimum of 1".
 - c. Remove the release film and press top sheet onto tape using hand pressure. Roll the splice with a 2" wide steel roller. The SecurTAPE should be visible approximately 1/4" to 1/2" from the edge of the top membrane.
 - d. **Field Splice Intersections**
 - 1) Intersections between field splices must be overlaid with a layer of 6" x 6" **Uncured** Pressure-Sensitive "T" Joint Cover followed by a layer of 12" x 12" **Semi-Cured** Pressure-Sensitive "T" Joint Cover.
 - 2) Apply HP-250 Primer to the intersecting membrane extending approximately 7" to 8" in all directions from the intersection.
 - 3) Prior to placement of the first "T" Joint Cover at the splice intersection, apply Lap Sealant along the leading edge of the membrane splice to cover the exposed SecurTAPE 2" in all directions from the splice intersection. Refer to appropriate X3A Detail.
 - 4) Position first layer of "T" Joint Cover (6" x 6" Uncured) so it is centered over the step-off and roll with a 2" wide steel roller creasing the uncured flashing into the step-off and prime the top surface of the "T" Joint Cover.
 - 5) Center the second layer of "T" Joint Cover (12" x 12" semi-cured) over the first layer and roll with a 2" wide steel roller creasing the flashing into the step-off.
- Note:** When using Pressure-Sensitive products in colder temperatures, use a heat gun to warm the product. Apply heat to the EPDM flashing side of the product. Do not apply heat directly to the preapplied adhesive. The Pressure-Sensitive Flashing must be applied immediately after Primer flashes off.
- 6) Apply Sure-Seal Lap Sealant along **all** edges of field splices and "T" Joint Covers.

C. **Additional Membrane Securement**

Membrane must be secured at the perimeter of each roof level, roof section, expansion joint, curb, skylight, interior wall, penthouse, etc., at any angle change which exceeds 2 inches in one horizontal foot, and at other penetrations in accordance with the appropriate Carlisle X3A Detail. Additional membrane securement shall be provided by RUSS (Reinforced Universal Securement Strip) wherever possible or Seam Fastening Plates as outlined below.

When the size of the unit is greater than 4' x 4', RUSS shall be used for membrane base securement.

For curbs, skylights, etc. less than 4' x 4', or where continuous membrane cannot be used for flashing, a separate piece of 90-mil thick membrane can be used in accordance with Carlisle X3A-5 Detail.

1. **RUSS (Reinforced Universal Securement Strip)**

- a. Loose lay the 6" wide RUSS along parapet walls and fasten with Seam Fastening Plates and the appropriate Carlisle fastener to the roof deck or vertically into the parapet wall. Spacing of the Seam Fastening Plates shall be a maximum of 12" on center.
- b. Adjoining sections of the reinforced strip need not be overlapped; however, gaps between adjoining sections must not exceed 1".
- c. To splice the deck membrane to the RUSS, prime both the backside of the membrane and the RUSS with HP-250 Primer and allow to dry. Apply 3" wide SecurTAPE to the RUSS then roll the membrane to the angle change.
- d. Complete wall flashing in accordance with procedures in Paragraph 3.04.D, Flashing.

2. Seam Fastening Plates

Where the use of RUSS is not feasible (at smaller curbs, skylights or some parapet walls), Sure-Seal 2" diameter Seam Fastening Plates may be used.

- a. Seam Fastening Plates may be installed horizontally into the structural deck or vertically into walls or curbs.
- b. Securement of the EPDM membrane with the approved Carlisle Fasteners and Seam Fastening Plates must be a maximum of 12" on center.
- c. After securing the Seam Fastening Plates, flash in accordance with the appropriate X3A Detail.

D. Flashing

1. General Flashing Considerations

All existing flashing must be removed prior to the application of new membrane. New membrane flashing must not conceal weep holes or cover existing throughwall counterflashing.

- a. Wall flashings shall extend a minimum of 8" above the roof surface and be terminated with a Sure-Seal Termination Bar in conjunction with counterflashing or surface mounted reglets or extended beneath a SecurEdge metal coping.
- b. Where applicable, install surface mounted reglets and compression bar terminations directly to the wall surface.
- c. Flash all parapet walls with continuous cured EPDM Membrane in conjunction with RUSS (Reinforced Universal Securement Strip) and terminate flashing with either a Carlisle SecurEdge Coping or a Carlisle Termination Bar in conjunction with throughwall counterflashing. A Carlisle Termination Bar in conjunction with surface mounted reglet or a coping stone may also be used as membrane termination.
- d. **Tie-in's to existing roofs are not permitted.** Individual roof sections must be totally isolated with a self-sustained drainage system.
- e. Metal counterflashing, surface mounted reglets, rain hoods and sheet metal apron flashing, where applicable, must be sealed with Sure-Seal Lap Sealant or a high-grade elastomeric caulking to prevent moisture migration behind the new wall flashing. Caulking used to seal metal accessories or construction joints is not covered by the Carlisle Warranty and must be maintained by the building owner.

2. Overlayment at Angle Change

- a. All **vertical field splices at the base of a wall or curb (angle change)** must be overlaid with two layers of Pressure-Sensitive Uncured Elastoform Flashing cut from 9" wide rolls with rounded corners.
- b. The first layer shall be 4-1/2" wide and centered over the seam and shall extend 3" onto the horizontal and vertical surface.
- c. The second layer shall be 9" wide, centered over the first layer and shall extend 6" onto the horizontal and vertical surface (3" beyond the first layer).
- d. Seal all exposed edges of splice and flashing overlays with Sure-Seal Lap Sealant.

3. Overlayment at "T" Joints

- a. Field Splices between two sections of cured membrane used for wall flashing or intersections between continuous pieces of wall flashing and a field splice should be treated as a "T" joint and must be overlaid with a layer of 6" x 6" **Uncured** Pressure-Sensitive "T" Joint Covers followed by a layer of 12" x 12" **Semi-Cured** "T" Joint Covers.
- b. Prior to placement of any of the "T" Joint Covers, apply Lap Sealant along the leading edge of the membrane splice to cover the exposed SecurTAPE 2" in all directions from the splice intersection. Refer to appropriate X3A Detail.
- c. Position first layer of "T" Joint Cover (6" x 6" Uncured) so it is centered over the step-off and roll with a 2" wide steel roller creasing the uncured flashing into the step-off.
- d. Center the second layer of "T" Joint Cover (12" x 12" semi-cured) over the first layer and seal all exposed edges with Sure-Seal Lap Sealant.

Note: When using Pressure-Sensitive products in colder temperatures, use a heat gun to warm the product. Apply heat to the EPDM flashing side of the product. Do not apply heat directly to the preapplied adhesive. The Pressure-Sensitive Flashing must be applied immediately after Primer flashes off.

4. Overlayment at Flashing Overlaps

When cured 90-mil thick EPDM membrane is used for wall flashing and the use of RUSS is not feasible, overlaps between adjoining sections of flashing should be sealed with one layer of 4-1/2" followed by a layer of 9" wide Pressure-Sensitive Uncured Elastoform Flashing. Begin by measuring and cutting each layer including rounding of corners and priming.

- a. Prior to placement of the first layer of uncured flashing apply Lap Sealant along the leading edge of the membrane flashing splice to cover the exposed SecurTAPE and extend 2" beyond the splice edge at each end. Refer to Detail X3A-12A.
- b. Center 4-1/2" wide Pressure-Sensitive Uncured Elastoform Flashing along the flashing overlap extending approximately 3" on each side of the splice.
- c. Position the second layer of Pressure-Sensitive Uncured Elastoform Flashing (9" wide) along the center of the first layer and extend approximately 3" beyond the edges of the first layer (4-1/2" wide).
- d. Seal all edges with Sure-Seal Lap Sealant.

5. Corner Flashings

- a. Flash inside/outside corners in accordance with the appropriate X3A-15 Detail. Cut and position cured membrane into the corner and splice cut edges as shown in the detail.
- b. For inside corners, prior to placement of the uncured flashing, prime the entire corner area with HP-250 Primer and apply Lap Sealant over the splice located in the inside corner. Form a "pig ear" using 9" x 9" Pressure-Sensitive Uncured Elastoform Flashing. Place "pig ear" in the corner area so the fold in the flashing is not directly located over a field splice in the cured membrane. Refer to Detail X3A-15A and 15B.
- c. For outside corners, prime entire corner area extending approximately 2" past the end laps of the wall flashing. Seal end laps intersecting with the corner (if present) with Lap Sealant and flash corner with two layers of 4-1/2" x 4-1/2" and 9" x 9" Pressure-Sensitive Uncured Elastoform Flashing, respectively. Refer to Detail X3A-15C.
- d. Seal all exposed edges of the flashing with Sure-Seal Lap Sealant.
- e. Install **protective layers** of Pressure-Sensitive Flashing over all inside/outside corners using 3 layers of Pressure-Sensitive Uncured Elastoform Flashing with rounded corners.
 - 1) **Inside corners** – Use two layers of 9" x 9" flashing on the horizontal plane installing the first layer over the splice intersection between the deck membrane and the wall flashing. Proceed with the second layer so it overlaps the previous layer approximately 3" and extends to the corner. The third protective layer shall be 9" x 12" and should be installed over the wall flashing, centered over the inside corner extending down to the angle change so it butts against the previously installed protective layer on the deck membrane.
 - 2) **Outside corners** – Position two layers of 9" x 12" flashing on each side of the outside corner so it extends 3" past the outside corner and 3" beyond the splice between wall flashing and deck membrane. Center a third layer of 9" x 12" flashing over the outside corner so it extends down to the angle change butting the previously installed protective layers on the deck membrane.
 - 3) Seal all exposed edges with Lap Sealant. Refer to appropriate X3A-15 Details.

6. Roof Drains (U-6 Details)

- a. Provide a smooth transition from the roof surface to the drain clamping ring. Prepare the substrate around each roof drain to avoid membrane bridging in excess of 2" at the sump area and possible distortion at the drain clamping ring.
- b. The mating surfaces between the clamping ring and drain base must be clean and have a smooth finish.
- c. Field splices at roof drains must be located at least 12" outside the drain sump.
- d. Cut membrane so it extends approximately 1/2" beyond the attachment points of the clamping ring. The hole in the membrane must not restrict water flow or be smaller than the drain pipe.

- e. Remove all existing flashing material to prepare for the membrane seal (application of Water Cut-Off Mastic).
- f. All bolts and/or clamps must be in place to provide compression on the Water Cut-Off Mastic.
- g. Use drain strainers that have been approved by the specifier in accordance with applicable codes.

7. Other Penetrations

- a. Flash pipes and round penetrations with Pressure-Sensitive Pre-Molded Pipe Flashings, when feasible.

Intersections between field seams and deck flanges of the Pressure-Sensitive Pipe Flashing must be avoided. At the base of the penetration where the membrane is cut, overlay with an additional layer of 90-mil thick EPDM membrane extending a minimum of 3" beyond the pipe base flange. Refer to the X3A-8 Detail.

- b. When the use of Pressure-Sensitive Pre-Molded Pipe Flashings is not feasible, flash pipes, round penetrations and structural steel tubing (with corner radius greater than 1/4") with Pressure-Sensitive Uncured Elastoform Flashing. All penetrations must be double wrapped in accordance with Detail X3A-14A.

Note: Hot pipes that exceed 180° F must be insulated with metal collars and rain hoods and flashed in accordance with Detail X3A-14C.

- c. Flexible penetrations (braided cables, conduits, wires, etc.) must be enclosed in a stable gooseneck and flashed in accordance with Detail X3A-14B.
- d. Pipe clusters or unusually shaped penetrations, when feasible, must be encapsulated in an insulated curb and sealed with sheet metal enclosures. The curb must be flashed with cured 90-mil thick EPDM membrane. Refer to the appropriate curb and outside corner Detail X3A-16C.
- e. When the use of insulated curbs and sheet metal enclosures is not feasible, Sure-Seal Pourable Pockets may be used in conjunction with rain hoods and an extra layer of Pressure-Sensitive Uncured Elastoform Flashing. Refer to Detail X3A-16A.
 - 1) When the use of rain hoods cannot be incorporated, as may be the case with a cluster of pipes, two stacked Pourable Sealer Pockets must be installed. Refer to Detail X3A-16B.
 - 2) Prior to Pourable Sealer application, apply HP-250 Primer to the inside of the Pourable Sealer Pocket and scrub the penetration extending above the projected pourable sealer level. EPDM Flashing that will be embedded into the pourable sealer must also be primed. Refer to Detail X3A-16A or B.

8. Metal Edging

- a. Metal accessories used as an additional termination (i.e., counterflashings, surface mounted reglets, rain hoods or metal used to form a gooseneck) shall be sealed with Sure-Seal Lap Sealant or a good-quality construction caulking and must be periodically maintained by the building owner.
- b. When using SecurEdge Metal Edging and in order for the spring clip mechanism to properly function, position spring clips so they are not placed directly over a field splice.
- c. SecurEdge 2000 or 3000 metal fascia is required for projects with 100 mph peak gust wind speed warranty coverage.

Note: Offsets created by the field splices could create water channels that may be difficult to seal, especially when a compression edging system is used (i.e., SecurEdge 2000 and 3000). When SecurEdge 2000 or 3000 are to be used, membrane sheets should be positioned parallel to the roof edge (picture framed) to eliminate consecutive membrane offsets caused by field seams. Care should also be exercised with any SecurEdge Anchor Bar Edging to ensure proper seal along field seams intersecting with the metal edging.

- d. Sure-Seal Drip Edge may be specified on projects with standard 55 mph peak gust wind speed coverage. Two layers of semi-cured Pressure Sensitive Flashing must be used to flash the deck flange. Use one layer of 6" semi-cured Pressure-Sensitive Flashing followed by a top layer of 9" of the same material.

At splice intersections, apply Lap Sealant along the leading edge of the membrane splice to cover the exposed SecurTAPE 2" in all directions and center a 6" x 6" "T" Joint Cover and seal all edges with Lap Sealant. Refer to Detail X3A-1C.

Note: Prior to installing Pressure-Sensitive Flashing to overlay metal edging flanges, Sure-Seal Primer must be used to clean the membrane and metal surfaces followed by a thin coat of EP-95 Splicing Cement

which is allowed to properly dry.

3.05 OTHER RELATED WORK

Walkways are required at all traffic concentration points (i.e., roof hatches, access doors, rooftop ladders, etc.), regardless of traffic frequency. Walkways are also required if regular maintenance (once a month or more) is necessary to service rooftop equipment. Walkways are considered a maintenance item and are excluded from the Carlisle Warranty.

- A. Carlisle Pressure-Sensitive Walkway Pads can be adhered to the membrane.
- B. Smooth concrete pavers, when used, shall be loose laid over rubber paver pedestals positioned over a slip sheet of cured membrane. Pavers are not recommended when the roof slope is greater than 2 inches per one horizontal foot.

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CARLISLE'S **SURE-SEAL**

Sure-Seal® Adhered Roofing System 30 year Golden Seal™ Total System Warranty Details

TABLE OF CONTENTS

May 2008

Design Options

- X3A-A** 55 MPH Wind Speed Assembly (Option #1)
- X3A-B** 55 MPH Wind Speed Assembly (Option #2)
- X3A-C** 72 MPH Wind Speed Assembly
- X3A-D** 100 MPH Wind Speed Assembly
- X3A-E** Fibrous Cement / Gypsum Deck Attachment

Metal Edging

- X3A-1A** Carlisle SecurEdge 200
- X3A-1B** Carlisle SecurEdge Anchor Bar Edging
- X3A-1C** Sure-Seal Drip Edge
- X3A-1D** Metal Bar Termination

Membrane Splice

- X3A-2** Membrane Splice

Expansion Joints

- X3A-3A** Deck-to-Deck Expansion Joint
- X3A-3B** Deck-to-Wall Expansion Joint

Curbs

- X3A-5** Curb Flashing

Pressure-Sensitive Vent Pipe

- X3A-8** Sure-Seal Pressure-Sensitive Molded Pipe Seal

Terminations

- X3A-9** Vertical Flashing Terminations

Curb Flashings

- X3A-12A** Parapet/Curb with Separate EPDM Membrane
- X3A-12B** Wall Flashing with Continuous EPDM Membrane

Alternate Pipes Flashings

- X3A-14A** Field Fabricated Pipe Seal
- X3A-14B** Flexible Penetration
- X3A-14C** Field Fabricated Hot Stack

Corners

- X3A-15A** Inside Corner with Separate EPDM Wall Flashing
- X3A-15B** Inside Corner with Continuous EPDM Wall Flashing
- X3A-15C** Outside Corner with Pressure-Sensitive Uncured Flashing

Pourable Sealer Pockets

- X3A-16A** Sure-Seal Pressure-Sensitive Pourable Sealer Pocket with Rain Hood
- X3A-16B** Sure-Seal Pressure-Sensitive Pourable Sealer Pocket – Double
- X3A-16C** Multiple Penetrations Curb Detail

Insulation Securement

- X3A-27A** 4' x 8' Insulation Securement
- X3A-27B** 4' x 8' OSB Attachment