



CARLISLE'S FLEECEBACK® SURE-SEAL®

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

May 2007

TABLE OF CONTENTS

	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	7
2.04 Sure-Seal Fastener and Plates	8
2.05 Related Materials	8
2.06 Other Carlisle Accessories.....	10
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	12
C. Membrane Splicing (SecurTAPE).....	13
D. Lap Sealant Application	14
E. Flashing	15
1. General Flashing Considerations	15
2. Overlayment at Angle Change	15
3. Overlayment at "T" Joints.....	15
4. Overlayment at Flashing Overlaps	16
5. Corner Flashings.....	16
6. Roof Drains	17
7. Other Penetrations	17
8. Metal Edging	17
3.05 Other Related Work	17
Details	



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This Carlisle Sure-Seal FleeceBACK Adhered Roofing System specification outlines the various roof assemblies by which a 30-year Golden Seal Total System Warranty can be achieved. While specific requirements have been outlined herein and due to the use of **145-mil thick EPDM Membrane**, application procedures for items such as membrane bonding, membrane cleaning/priming, SecurTAPETM application, etc., are contained in Carlisle's FleeceBACK 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

The 30-year Total System FleeceBACK Adhered Roofing System utilizes 10' wide Sure-Seal® (black) FleeceBACK membrane with a total thickness of approximately 145-mil thick (90-mil thick non-reinforced EPDM membrane laminated to a 55-mil thick non-woven polyester, polypropylene blended fleece-backing).

Fleece backed membrane is fully adhered to an acceptable substrate with Carlisle's two-component low rise FAST Adhesive in a full coverage. Adjoining sheets of membrane spliced together with 6" wide Factory-Applied SecurTAPETM and Primer. Sheet end laps are butted and overlaid with 6" wide Sure-Seal Pressure-Sensitive Cured Cover Strip and overlaid with 12" wide Sure-Seal Pressure-Sensitive Overlayment Strip. All field and flashing splices are sealed with Sure-Seal Lap Sealant.

1.02 DESIGN OPTIONS

The 30-Year Golden Seal™ Total System Warranty includes 2" hail, limited accidental puncture and 80-mph peak gust wind speed coverage.

For projects requesting additional peak gust wind speed coverage, refer to the assemblies outlined below for additional design enhancements:

A. Projects with a 120-mph peak gust wind speed warranty

The membrane assembly must incorporate a minimum single layer of **Sure-Seal Polyisocyanurate/OSB Composite Insulation** (with a maximum thickness of 2-1/2") installed with Carlisle FAST Adhesive **or** 7/16" thick Oriented Strand Board (OSB) installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) and fastened into the structural deck. For multiple layers of insulation, the first layer may be mechanically fastened to the structural deck and FAST Adhesive may be used to adhere the top layer of Sure-Seal Polyiso/OSB Composite insulation. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment and Detail X3A-D.

Note: 120-mph peak gust wind speed coverage is not available on fibrous cement or gypsum decks.

B. Projects with a 100-mph peak gust wind speed warranty

The membrane assembly must incorporate **5/8" thick Carlisle Dens-Deck or Dens-Deck Prime** as a membrane underlayment installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) 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.

Note: On fibrous cement or gypsum decks, all layers of insulation are required to be adhered with FAST Adhesive.

D. Projects with a 90-mph peak gust wind speed warranty

The membrane assembly must incorporate **1/2" thick HP Recovery Board or 1/2" thick Carlisle Dens Deck or Dens-Deck Prime** installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) with all joints staggered between layers. Both layers may be mechanically fastened or adhered with FAST Adhesive. Refer to Part III Execution, Paragraph 3.04.A Insulation Attachment and Detail X3A-B, Option #2

Note: On fibrous cement or gypsum decks, all layers of insulation are required to be adhered with FAST Adhesive.

D. Projects with an 80-mph peak gust wind speed warranty

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 or 1/4" thick Carlisle Dens-Deck Prime**, installed over a base layer of Sure-Seal Polyisocyanurate insulation (standard 20 psi compressive strength) with all joints staggered between layers. Both layers may be mechanically fastened or adhered with FAST Adhesive. Refer to Detail X3A-A, Option 1.

Note: When both layers of Sure-Seal Polyisocyanurate insulation are of the same thickness, both layers are required to have 25 psi compressive strength 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 1.5" 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 FleeceBACK 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 Field Service Representative of Carlisle SynTec Incorporated to ascertain the roofing system has been installed according to Carlisle's specifications and details. This inspection is to determine whether a Carlisle Warranty can be issued, it is not intended as the final inspection for the building owner or his representative.

1.04 SUBMITTALS

- A. To ensure compliance with Carlisle's warranty requirements, all projects must be forwarded with shop drawing and Request for Warranty 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. 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., FAST Adhesive – Parts A and B, 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 or potential moisture contamination.
- E. Membrane, insulation and underlayment must be stored so it is kept dry and is protected from the elements. Store membrane, insulation or underlayment 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

Material Safety Data Sheets (MSDS) must be on location at all times during transportation, storage, and application of materials. The applicator shall follow all safety regulation as recommended by OSHA and other agencies having jurisdiction.

- 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, damage from hail up to 2” in diameter and windstorms up to 120-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 2 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' wide **Sure-Seal** (black) 90-mil thick non-reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) laminated to a 55-mil thick non-woven polyester fleece-backing resulting in a total finished sheet thickness of 145-mil with incorporated Factory-Applied SecurTAPE is required for this roofing system and meets the physical properties of ASTM D4637 as follows.

Physical Property	Test Method	SPEC.(Pass)	Sure-Seal Typical
Tolerance on Nominal Thickness, %	ASTM D 751	±10	±10
Thickness over Fleece, min, in. (mm) 145-mil (3.68 mm)	ASTM D 4637 Annex	.080 (2.03)	.090 (2.28)
Weight, 1 bm/ft ² (kg/m ²) 145-mil (3.68)		—	0.59 (2.37)
Breaking Strength, min, lbf (N)	ASTM D 751 Grab Method	90 (400)	250 (1112)
Elongation, Ultimate, min, %	ASTM D 412	300 **	480 **
Tear Strength, min lbf (N)	ASTM D 751 B Tongue Tear	10 (45)	60 (266)
Brittleness, point, max, °F (°C)	ASTM D 2137	-49 (-45)	-67 (-55)
Resistance to Heat Aging* Properties after 4 weeks @ 240°F (116°C) Breaking Strength, min, lbf (N) Elongation, Ultimate, min, % Linear Dimensional Change, max, %	ASTM D 573 ASTM D 751 ASTM D 412 ASTM D 1204	 80 (355) 200 ** ±1.0	 200 (890) 225 ** -0.7
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
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 **
Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, 17,640 kJ/m ² total radiant exposure at .70 W/m ² irradiance, 176°F (80° C) black panel temp.	ASTM G 155 ASTM D 4637 Conditions	No Cracks No Crazing	No Cracks No Crazing

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" in 1/10" increments. 4' x 4' tapered panels are also available.
1. **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.
 2. **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 Strand 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.

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 6122	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 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 thicknesses from 1-1/2" to 4" in 1/2" increments. Used as a membrane underlayment/insulation in assemblies where 120-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 (PA•s•m ²)
Water Absorption	ASTM C209	<1% volume
Service Temperature	--	-100 to 250° F

- C. **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 90 mph peak gust wind speed. The HP Recovery Board is used as a membrane underlayment over Sure-Seal Polyisocyanurate (minimum 20 psi) or Sure-Seal EPS or Extruded Polystyrene.
- D. **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.
- E. **Carlisle Dens-Deck Prime Roof Board** – 1/4", 1/2" or 5/8" thick moisture resistant treated gypsum core that incorporates glass-mat facings on the top and bottom side with the top surface pre-primed. The Dens-Deck Prime may be used as a membrane underlayment in conjunction with other Carlisle insulations for roofing assemblies where 80 mph (1/4" thick) or 90 mph (1/2" thick) or 100 mph (5/8" thick) peak gust wind speed coverage as outlined in Paragraph 1.02, Design Options.

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. **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.
- F. **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. **Membrane Underlayment - 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 120-mph peak gust wind speed. OSB is not supplied Carlisle but can be included in the Carlisle warranty for an up charge.
- B. **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.
- C. **FAST Adhesive Catalyst:** Added to FAST Adhesive (Part B Side) to quicken adhesive reaction time.
- D. **Sure-Seal SecurTAPTM:** A 6" wide by 100' long splice tape used for splicing adjoining sections of EPDM membrane and the attachment of the 9" wide RUSS to the underside of the field membrane.
- E. **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.
- F. **Sure-Seal Pressure-Sensitive Cured Cover Strip:** A nominal 60-mil (1.52 mm) thick black cured EPDM membrane with a nominal 35-mil (0.89 mm) thick fully cured synthetic rubber pressure-sensitive adhesive. Available in 100" (30.5 m) long rolls in 6" (150 mm), 9" (230 mm) and 12" (305 mm) widths used in applications that require for sealing end laps, stripping in metal edging or stripping in seams.
- G. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal EPDM membranes to various surfaces.
- H. **Sure-Seal Acrylic Coating:** A water-based color coating used with EPDM membrane. Available in standard colors of white and gray. Prior to applying Acrylic Coating, **Carlisle Coating Primer**, a spray applied, water-based wash primer, is used as a soaking detergent to prepare the surface of the EPDM membrane. Available in 5 gallon containers.
- I. **Carlisle PT 304 Polyurethane Sealant:** A single-component, moisture curing, permanently flexible, multi-purpose construction sealant designed to seal most types of construction joints, counterflashings, surface mounted reglets, rain hoods and other metal accessories. Available in 10.3 ounce cartridges, packaged 24 per carton. Available in white only.

J. Flashing Accessories

1. **Sure-Seal Pressure Sensitive Overlayment Strip:** 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 T-Joint Covers:** A factory cut 6" x 6" (rounded corners), 40-mil thick Elastoform Flashing with factory-applied SecurTAPE providing 75-mils of total thickness, used to overlay field splice intersections and to cover field splices at angle changes.
3. **Sure-Seal T-Joint Cover Overlayment:** A factory cut 12" x 12" (rounded corners), 40 mil thick Elastoform Flashing laminated to factory-applied SecurTAPE providing 75-mil of total thickness, used to overlay T-Joint Covers.
4. **Sure-Seal Pressure-Sensitive Uncured Elastoform® Flashing:** A 9" wide by 50' long, 60-mil thick **uncured** EPDM Flashing laminated to a 35-mil pre-applied adhesive tape used in conjunction with Sure-Seal Primer. Used to flash inside/outside corners, vent pipes and other penetrations.

K. Metal Accessories

1. **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.
2. **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.
3. **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.
4. **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.
5. **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)	Cleat²
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 give 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.

- L. **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 3 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 insulation fastening or adhesive attachment:
 - 1. **Steel, 22 gauge or heavier** - Sure-Seal HP or HP-X Fasteners with a minimum pullout of 360 pounds per fastener or Carlisle FAST Adhesive.
 - 2. **Structural Concrete, rated 3,000 psi or greater** - Sure-Seal CD-10 (hammer-driven) or HD 14-10 (threaded) Fasteners 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 with a minimum pullout of 360 pounds.
 - 4. **Cementitious Wood Fiber and Gypsum** - FAST Adhesive is required for insulation attachment over these types of structural decks.
- D. When fasteners are to be used for securement of roof insulation and membrane underlayment, pullouts may be conducted to determine the proper values 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 use of wood nailers.**

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

2. When pressure treated wood nailers are required by the specifier, 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**.

When non-treated lumber is to be specified, it must be stored and protect from moisture sources until the edge detail is completed. When securing non-treated lumber to a concrete or gypsum substrate a separation from the deck and the nailer should be installed (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

Before beginning the installation, refer to applicable Material Safety Data Sheets, OSHA safety requirements, 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, a Polyisocyanurate/OSB 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 or permitted over steel, structural concrete, cementitious wood fiber and gypsum decks, an insulation attachment method using FAST Adhesive may be specified.

B. Membrane Installation

1. General

- a. Do not apply **FAST Adhesive** when surface and/or ambient temperatures are below 25° F.
- b. The addition of Sure-Seal FAST Adhesive Catalyst to FAST Adhesive (Part B) is required to speed up reaction time when temperatures are below 50° F. Refer to FleeceBACK Sure-Seal Application Specification "Attachment III", Insulation Attachment with FAST Adhesive, for additional information.
- c. The coverage rate of FAST Adhesive **used to adhere the membrane** is approximately 10,000 square feet per 50 gallon "drum set" and 3,000 square feet per 15 gallon drum set.
- d. **Ensure** that water does not flow beneath any completed sections of the membrane system by completing all flashings, terminations and daily seals by the end of each workday.
- e. **Sweep** all loose debris from the substrate.
- f. **Verify** all sections are dry prior to proceeding with the application of FAST Adhesive/FleeceBACK membrane.

2. Membrane Placement/Bonding

- a. Position and unroll successive sheets and align to provide the minimum 6" wide splice.
- b. Fold adjacent sheets in half lengthwise to expose an approximate 10' wide by 50' long (the length of the sheet) substrate area.
- c. Apply FAST Adhesive onto the substrate and allow adhesive to foam up approximately 1/8" and develop **strings when touched with an HP Splice Wipe**. Roll the membrane with a weighted steel roller, approximately 30" wide weighing 100 - 150 pounds, or nylon bristle push broom to set the membrane into the adhesive. **Avoid saturation of fleece with FAST Adhesive by not placing the membrane into the adhesive too early and not using heavier rollers than specified.**

- d. Apply FAST Adhesive to the substrate and continue the process described above until all sheets are fully bonded, allowing for the necessary splice overlaps at selvage edges.
- e. At end laps (along the width of the sheet), membrane shall be butted together and overlaid with 6" wide Pressure-Sensitive Cured Cover Strip and 12" Pressure Sensitive Flashing (in conjunction with HP-250 Primer) respectively.

C. MEMBRANE SPLICING (SecurTAPE)

FleeceBACK membrane has selvage edges (fleece-backing is discontinued) and Factory Applied SecurTAPE along the length of the sheet for membrane splicing in accordance with the following procedures.

Selvage edges are not provided along the width of the membrane; adjoining membrane sheets shall be butted together and overlaid with 6"wide Pressure Sensitive Cured Cover Strip and 12" Pressure Sensitive Elastoform (in conjunction with HP-250 Primer) respectively in accordance with Detail FB-2-D or E.

1. General

- a. Tape splices must be a minimum of 6" wide using 6" wide Factory Applied SecurTAPE.
 - b. Field splices located in areas where ponding water occurs or those that resist water flow, must be overlaid with 6" Pressure Sensitive Overlayment Strip or 6" wide Pressure Sensitive Cured Cover Strip.
 - c. At end laps, butt membrane together and overlay with 6" wide Pressure Sensitive Cured Cover Strip (with primer) and 12" Pressure Sensitive Overlayment Strip (in conjunction with HP-250 Primer) respectively.
 - d. Factory-Applied Tape can be flush with sheet edge.
 - e. **Prior to SecurTAPE application, the splice area must be primed with Sure-Seal HP-250 or LV-600 Primer.** LV-600 Primer is required in areas where volatile organic compound (VOC) regulations are in effect.
 - f. Field splices at roof drains must be located outside the drain sump.
 - g. **Cold Weather Restrictions** - When temperatures are below 40°F
 - 1) Splice tape must be stored in a warm, dry area. Hot boxes must be provided for temporary storage to maintain the temperature of the tape above 40°F.
 - 2) After Primer has been applied and allowed to properly dry, **heat the primed area of the bottom membrane sheet** with a hot air gun as the tape is applied and pressed into place (not applicable with factory-applied tape).
 - 3) When temperatures fall below 20°F, use a steel roller to apply pressure to the tape prior to removing the release film.
 - 4) Position the top sheet and remove the release film. Prior to rolling the splice with the 2" steel roller, apply heat to the topside of the splice area with a hot air gun. The heated surface should be very hot to the touch of bare skin (approximately the temperature of hot tap water). Take care not to burn or blister the membrane.
2. If the splice area is contaminated with field dirt, adhesive or other residue, scrub with Sure-Seal Weathered Membrane Cleaner prior to application of Universal Cleaner/Primer.
 3. Position membrane sheets to allow for an approximate 6" overlap.

4. **Apply HP-250 or LV-600 Primer** with a 1/2" medium nap roller to achieve a **thin, even coat** on both membrane surfaces. Splice area must be uniform in color, streak free and free of globs or puddles.

Note: Hycron® gloves (available from Carlisle) are required for hand protection when primer is being used.

5. The **coverage rate for HP-250 Primer is approximately 250 square feet per gallon**. This equates to approximately 150 linear feet per gallon for a completed 6" wide splice area.

The **coverage rate for LV-600 Primer is approximately 600 square feet per gallon**. This equates to approximately 360 linear feet per gallon for a completed 6" wide splice area.

6. **Allow** Primer to dry until tacky but does not transfer to a dry finger touch.

Note: Due to solvent flash-off, condensation may form on freshly applied HP-250 Primer when the ambient temperature is near the dew point. If condensation develops, the application of Primer and SecurTAPE must be discontinued since proper adhesion will not be achieved. Allow the primer surface to dry and apply a thin freshener coat of HP-250 Primer to the previously coated surface and apply SecurTAPE when conditions allow.

7. Where pre-applied SecurTAPE is not present (i.e., base flashing details, cap sheet locations, etc.) unroll approximately 3' of SecurTAPE. Align release film with marked line and press tape down to bottom sheet using firm even hand pressure. Continue for the length of the splice. Tape roll ends must be overlapped 1". Allow top sheet to rest on release film on backside of the tape.

8. **Pull** release film from SecurTAPE beneath top sheet and allow top sheet to fall freely onto exposed tape.

9. **Press** the top sheet onto the tape using firm even hand pressure across the splice towards the splice edge.

10. **Immediately roll** the splice using positive pressure. When using a 2" wide steel roller, roll across the splice edge, not parallel to it. When using Carlisle's Stand-Up Seam Roller, splices may be rolled lengthwise along the splice.

Note: When temperatures are below 40° F, prior to rolling the splice, apply heat to the topside of the splice area with a hot air gun.

11. **Install** a Sure-Seal "T" Joint Cover or a 6" wide section of Pressure-Sensitive Flashing (with rounded corners) and 12" Pressure Sensitive Flashing (in conjunction with HP-250 Primer) respectively **over all field splice intersections**. Refer to Detail FB-2-B and C.

D. LAP SEALANT APPLICATION

1. General

- a. The use of Lap Sealant with tape splices is optional except at tape overlaps, where Lap Sealant must be utilized.
- b. Lap Sealant is optional on straight runs of Pressure-Sensitive Flashing and around Pressure-Sensitive Pipe Flashings.
- c. Lap Sealant is required at the following locations:
 - 1) Splices between adjoining sections of Pressure-Sensitive Flashing.
 - 2) Intersections between Pressure-Sensitive Flashing and joints in metal edgings.
 - 3) All adhesive splices and in conjunction with Elastoform Flashing.
 - 4) Apply Lap Sealant immediately following completion of splices completed with SecurTAPE.

- 5) Under all "T" Joint Cover details (do not feather).
2. Additional cleaning of the splice edge prior to applying Lap Sealant is **not required** unless contaminated with dirt or other contaminants.
3. Apply a **5/16" (minimum 1/4") diameter bead** of Lap Sealant to completely cover the splice edge. When a 5/16" diameter bead of Lap Sealant is applied, approximately 22 linear feet of coverage per tube can be achieved.
4. **Feather** the Lap Sealant with the specially preformed tool or nozzle (included in the Lap Sealant cartons) so the high point or the crown of the Lap Sealant is located over the edge of the splice.
Clean the feathering tool occasionally for consistent crowning of the Lap Sealant.
5. **APPLICATION OF LAP SEALANT SHOULD BE COMPLETED BY THE END OF THE DAY.** Delayed Lap Sealant application (not within the same day) will require scrubbing of accumulated dirt and dust along the splice edge, rinsing with clean water and cleaning with Universal Cleaner/Primer.

E. 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.

At roof drains and compression seal terminations such as termination bars and coping stones, the fleece-backing must be removed from the back of the membrane so Water Cut-Off Mastic can be applied directly to the EPDM membrane surface.

- a. Parapet walls shall be flashed with continuous cured EPDM Membrane and terminated with either a Carlisle SecurEdge Coping or a Carlisle Termination Bar. A Carlisle Termination Bar in conjunction with surface mounted reglet, throughwall flashing or a coping stone may also be used as membrane termination.
- b. Wall flashings shall extend a minimum of 8" above the roof surface and be terminated with a Sure-Seal Termination Bar directly to the wall surface.
- c. **Tie-in's to existing roofs are not permitted.** Individual roof sections must be totally isolated with a self-sustained drainage system.
- d. Metal counterflashing, surface mounted reglets, rain hoods and sheet metal apron flashing, where applicable, must be sealed with Carlisle PT 304 Polyurethane 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 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” “T” Joint Covers followed by a layer of 12” x 12” “T” Joint Overlayment.
- b. Prior to placement of any of the “T” Joint Covers, place a bead of Lap Sealant 2” out from seam intersection and step-off. 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 Overlayment (12” x 12” Uncured) 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 pre-applied adhesive. The Pressure-Sensitive Flashing must be applied immediately after Primer flashes off.

4. Overlayment at Wall Flashing Overlaps

When cured 90-mil thick EPDM membrane is used for wall flashing, overlaps between adjoining sections of flashing should be sealed with one layer of 4-1/2” followed by a layer of 9” wide uncured Pressure Sensitive 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, place a bead of Lap Sealant on the deck membrane approximately 11” long. Position along the leading edge of the splice overlapping the exposed edge of the SecurTAPE used to form the membrane splice. Refer to Detail X3FB-12C
- b. Center 4-1/2” wide uncured Pressure Sensitive Elastoform Flashing along the flashing overlap extending approximately 3” on each side of the splice.
- c. Position the second layer of uncured Pressure Sensitive 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 Lap Sealant over the splice located in the inside corner. Form a “pig ear” using 9” x 9” Pressure Sensitive 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 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 Elastoform Flashing over all inside/outside corners using 3 layers of Pressure-Sensitive 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 (FB-6 Details)

When the FleeceBACK membrane extends into the drain sump/clamping ring, fleece-backing must be removed from the underside of the membrane so Water Cut-Off Mastic can be applied directly to the membrane surface. Apply heat to the fleece material and scrape to fully remove. As an option, a separate section of cured non-reinforced EPDM can extend into the drain sump. Refer to Detail FB-6-B in the FleeceBACK Adhered Roofing Systems Specification.

- 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 60-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 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 Carlisle PT-304 Sealant or a good-quality construction caulking and must be periodically maintained by the building owner.
- b. SecurEdge 2000 or 3000 metal fascia is required for projects with 100 mph or greater 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 and SecurEdge Anchor Bar Edging to ensure proper seal along field seams intersecting with the metal edging.

- c. Sure-Seal Drip Edge may be specified on projects with standard 80 mph peak gust wind speed coverage. Two layers of Pressure-Sensitive Overlayment Strip must be used to flash the deck flange. Use one layer of 6" Pressure-Sensitive Overlayment Strip followed by a top layer of 9" of the same material.

At field splice intersections, install Lap Sealant along the leading edge of the splice 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 Walkway Pads/Rolls must be adhered to the membrane with SecurTAPE. Pressure-Sensitive Walkway Pads (with SecurTAPE pre-applied to the walkway underside) are also available.
- 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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Sure-Seal® FleeceBACK Adhered Roofing System 30 year Golden Seal™ Total System Warranty Details

TABLE OF CONTENTS

May 2007

Design Options

- X3FB-A** 80 MPH Wind Speed Assembly
(Option #1)
- X3FB-B** 80 MPH Wind Speed Assembly (Option #2)
- X3FB-C** 90 MPH Wind Speed Assembly
- X3FB-D** 100 MPH Wind Speed Assembly
- X3FB-E** 120 MPH Wind Speed Assembly

Metal Edging

- X3FB-1B** Carlisle SecurEdge Anchor Bar Edging
- X3FB-1C** Sure-Seal Drip Edge
- X3FB-1D** Metal Bar Termination

Membrane Splice

- X3FB-2** Membrane Splice with SecurTAPE

Expansion Joints

- X3FB-3A** Deck to Deck Expansion Joint
- X3FB-3B** Deck to Wall Expansion Joint

Curbs

- X3FB-5** Curb Flashing

Pressure-Sensitive Vent Pipe

- X3FB-8** Sure-Seal Pressure-Sensitive
Molded Pipe Seal

Terminations

- X3FB-9** Vertical Flashing Terminations

Curb Flashings

- X3FB-12A** Parapet/Curb with Continuous
FleeceBACK Membrane
- X3FB-12C** Parapet/Curb with Cure EPDM
Membrane (SecurTAPE)

Alternate Pipes Flashings

- X3FB-14A** Field Fabricated Pipe Seal
- X3FB-14B** Flexible Penetration
- X3FB-14C** Field Fabricated Hot Stack

Corners

- X3FB-15A** Inside Corner with Separate EPDM
Wall Flashing
- X3FB-15B** Inside Corner with Continuous EPDM
Wall Flashing
- X3FB-15C** Outside Corner with Pressure-Sensitive
Uncured Flashing

Pourable Sealer Pockets

- X3FB-16A** Sure-Seal Pressure-Sensitive Pourable
Sealer Pocket with Rain Hood
- X3FB-16B** Sure-Seal Pressure-Sensitive Pourable
Sealer Pocket – Double Application
- X3FB-16C** Multiple Penetrations Curb Detail

Insulation Securement

- X3FB-27A** 4' x 8' Insulation Attachment
- X3FB-27B** 4' x 8' OSB Attachment