FleeceBACK® Roofing Systems

G U I D E - S P E C

Sure-Weld® FleeceBACK Adhered Roofing System

July 2026

This **GUIDE-SPEC** is a brief outline of Carlisle's Sure-Weld FleeceBACK Adhered Roofing System requirements and is intended for use as a submittal with a bid package. Specifiers and the Carlisle Authorized Roofing Applicator must comply with the applicable Sections of Carlisle's Technical Manual, prior to design or bid.

PART I GENERAL

1.01 DESCRIPTION

The Sure-Weld FleeceBACK Adhered Roofing System incorporates 45, 60 or 80-mil thick, 12' or 6' wide, scrim-reinforced, white, gray, tan or Special Color TPO, Sure-Weld Thermoplastic Polyolefin (TPO) membrane laminated to a 55-mil thick non-woven polyester fleece-backing resulting in a total finished sheet thickness of 100, 115 or 135-mils. The membrane is fully adhered to an acceptable insulation or substrate with a two-component, spray or extrusion applied, low-rise Flexible FAST Adhesive. Adjoining sheets of membrane are overlapped and joined together with a minimum 1-1/2" wide hot air weld.

1.02 QUALITY ASSURANCE

A. The specified roofing system must be installed by a Carlisle Authorized Roofing Applicator in compliance with drawings and specifications as approved by Carlisle SynTec.

B. Upon request, an inspection shall be conducted by a Field Service Representative of Carlisle to ascertain that the membrane roofing system has been installed according to Carlisle's published specifications and details applicable at the time of bid. This inspection is to determine whether a warranty shall be issued. It is not intended as a final inspection for the benefit of the owner.

C. For specific code approvals achieved with this system, refer to Carlisle's FleeceBACK Code Approval Guide, DORA (Directory of Roof Assemblies), FM Approvals or UL Fire Resistance Directory for Roofing Materials and Systems.

1.03 SUBMITTALS

A. To ensure compliance with Carlisle's minimum warranty requirements, the following projects should be forwarded to Carlisle for review prior to installation, preferably prior to bid.

1. Air pressurized buildings, canopies, and buildings with large openings, cold storage buildings or freezer facilities, adhered roofing system projects over 100' in height or projects where the FleeceBACK membrane is expected to come in direct contact with petroleum-based products, waste products (i.e., grease, oil, animal fats, etc) and other chemicals.

B. Shop drawings must be submitted to Carlisle by the Carlisle Authorized Roofing Applicator along with a completely executed Notice of Award (Page 1 of Carlisle's Request For Warranty form) for approval. Approved shop drawings are required for inspection of the roof and on projects where on-site technical assistance is requested.

1.04 GENERAL DESIGN CONSIDERATIONS

A. It is the responsibility of the building owner or his/her designated representative to verify structural load limitation. In addition, a core cut may be taken to verify weight of existing components when the roofing system is to be specified on an existing facility.

B. On new construction projects, especially in cold climate regions, moisture generated due to the construction process could adversely impact various components within the roofing assembly if not addressed. [Refer to Design References DR-01-21 "Construction Generated
Moisture" included in the Carlisle Technical Manual.]

C. On structural concrete decks, when a vapor retarder is not used, gaps in the deck along the perimeter and around penetrations must be sealed along with vertical joints between tilt-up panels, if present, to prevent infiltration of hot humid air and possible moisture contamination resulting from condensation. This is specifically important when adhesive is used to attach the roof insulation.

CAUTION: If left unaddressed, collected moisture could weaken insulation boards and facers resulting in a blow-off or increase the probability of mold growth.

D. Vapor Retarders

1. Carlisle does not require a vapor retarder for the protection of the membrane; however, it should be considered by the specifier for the protection of the roofing assembly (i.e. primarily insulation, underlayment and adhesives). The following criteria should be considered by the specifier:

a. Use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly, should be investigated by the specifier.

b. 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.

1.05 WARRANTY

Table I FleeceBACK Adhered Systems Warranty Options

Years	Minimum Membrane Thickness	Warranty Wind Speed			Additional Hail Coverage			
		55 or 72 mph	80 mph	90 or 100 mph	1" Dia. Hail	2" Dia. Hail	3" Dia. Hail	4" Dia. Hail
5,10, or 15 year	Sure-Weld 100-mil	√	√	√	√	√ (1)	N/A	N/A
20 year	Sure-Weld 115-mil	√	√	√	√	√	√ (1)	N/A
25 year	Sure-Weld 135-mil	√	√	√	√	√	√ (1)	N/A
30 year	Sure-Weld 135-mil	√	√	√	√	√	√ (1)	N/A

Notes: N/A = Not Acceptable √= Acceptable

(1) Requires Flexible FAST in full coverage or beads spaced at 4” o.c.

1.06 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., Flexible FAST Adhesive - Parts A & B, sealants, cleaners, primers, SecurTAPE, Pourable Sealer, Pressure-Sensitive Flashing and uncured flashing).

C. FleeceBACK Membrane should be stored in its original plastic wrap or be covered to protect from moisture. Any moisture absorbed by the fleece-backing must be removed by using a wet-vac system, prior to membrane adhesion

1.07 JOB CONDITIONS

A. Refer to Carlisle Technical Manual for applicable project specific Job Conditions.

PART II PRODUCTS

2.01 GENERAL

The components of this roofing system are to be products of Carlisle or accepted by Carlisle as compatible. The installation, performance or

integrity of products by others, **when selected by the specifier and accepted as compatible by Carlisle,** is not the responsibility of Carlisle and is expressly disclaimed by the Carlisle Warranty.

2.02 MEMBRANE

Sure-Weld FleeceBACK 100, 115 or 135 membrane incorporates 45, 60 or 80-mil thick Thermoplastic Polyolefin (TPO) membrane laminated to a 55-mil non-woven fleece backing resulting in a total finished sheet thickness of 100, 115 or 135- mils. Membrane sheets are available in rolls 12' or 6' wide by 50', 75' or 100' long. Sure-Weld FleeceBACK Membrane is available in white, gray, tan or Special Color TPO.

2.03 RELATED MATERIALS

A. Carlisle Flexible FAST Adhesive, Sure-Weld Reinforced and Non-Reinforced Flashing, Pressure Sensitive Cover Strips, Cut-Edge Sealant, Weathered Membrane Cleaner, Termination Bars, Insulation Fasteners and Water Cut-Off Mastic. Other Carlisle products such as insulation and edgings are also required when a System Warranty is specified.

B. **Other Products:** Heat Weldable Walkway Pads, Pre-Molded Pipe Flashings, Split Pipe Boots, Curb Wraps, Inside and Outside Corners, LIQUISEAL Liquid Flashing and Molded or Pourable Sealant Pockets.

PART III EXECUTION

3.01 GENERAL

A. 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 minimize construction traffic on completed sections. This will include completion of all flashings and terminations.

3.02 ROOF DECK CRITERIA

A. A proper substrate 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. Refer to Carlisle Technical Manual for acceptable decks and the applicable Sure-Seal Fasteners (when mechanical attachment of insulation is specified).

3.03 SUBSTRATE REQUIREMENTS

A. The membrane may be adhered with Flexible FAST Adhesive directly over structural concrete, wood, gypsum and fibrous cement roof decks (new or tear-off). An existing smooth surfaced asphalt built-up roof (Type III or IV Asphalt), modified bitumen or mineral surfaced cap sheet are also acceptable substrates. Direct application over certain types of lightweight insulating concrete substrates may also be specified (contact Carlisle for acceptable lightweight insulating concretes).

B. Acceptable Carlisle insulations include all types currently approved with Design "A" Adhered Roofing Systems.

C. The substrate must be dry, relatively smooth, free of protrusions, debris, sharp edges or foreign materials and must be free of accumulated water, ice and snow. Cracks or voids in the substrate greater than 1/4" must be filled with Flexible FAST Adhesive or other suitable material.

D. On retrofit-recover projects, cut and remove wet insulation as identified by the specifier and fill all voids with new insulation, so that it is relatively flush.

3.04 INSTALLATION

Refer to the applicable Safety Data Sheets and Product Data Sheets for cautions and warnings.

A. **Insulation Attachment**

1. Carlisle Flexible FAST Adhesive may be specified for insulation securement in full spray or beads with spacing as outlined in the Carlisle Technical Manual.

2. Carlisle Fasteners may be used, when specified, to secure Carlisle Insulation at the specified density outlined in the Carlisle Technical Manual.

B. **Membrane Installation**

1. FleeceBACK Membrane shall be fully adhered to an acceptable substrate with Carlisle Flexible FAST Adhesive. The adhesive is spray applied or extruded to the substrate only and the membrane is rolled into the wet adhesive once it has foamed up approximately 1/8" to 3/4"and begins to string when touched with a HP Splice wipe. Roll the membrane with a 30" wide, 150 pound weighted segmented steel roller to set the membrane into the adhesive.

2. Adjoining sheets of FleeceBACK Membrane are overlapped a minimum of 2" along the length of the membrane (at the selvage edge) in preparation for membrane splicing. At end laps (along the width of the sheet), membranes shall be butted together which will be overlaid with a minimum 6" wide Sure-Weld reinforced membrane heat welded on all edges.

3. Refer to Carlisle Technical Manual for alternate attachment methods.

4. **Membrane Splicing – Heat Welding**

   a. Along the length of the membrane (at selvage edges), heat weld membrane sheets a minimum of 1-1/2" with an Automatic Heat Welder or Hot Air Hand Welder and silicone roller. Refer to Carlisle Technical Manual for specific heat welding procedures.
   b. Membrane that has been exposed to the elements for approximately 7 days must be prepared by scrubbing the splice area with a scouring pad and Carlisle Weathered Membrane Cleaner. Clean all residue from the prepared splice area with a HP Splice Wipe or clean natural fiber (cotton) rag prior to welding.

C. **Flashing**

1. When feasible, flash all walls/curbs, etc., with continuous deck membrane. When the use of continuous deck membrane is not feasible, a separate piece of Sure-Weld Reinforced Membrane may be utilized (in conjunction with Sure-Weld Bonding Adhesive).

2. Sure-Weld Non-Reinforced Flashing shall be limited to inside/outside corners, field fabricated pipe flashings, scuppers or other unusually shaped walls or penetrations where the use of Sure-Weld FleeceBACK Membrane, Reinforced Sure-Weld Membrane or Prefabricated accessories (pipe flashings, pourable sealer pockets, corners) is not practical.

3. When using the Pressure-Sensitive Cover Strip to overlay metal edging flanges, Carlisle Weathered Membrane Cleaner is used to clean surfaces as needed. Apply Carlisle TPO Primer prior to applying Pressure-Sensitive Cover Strip.

4. Terminate the flashing in accordance with the appropriate Carlisle Details above anticipated slush line.

5. Copings, counterflashing and metal work, not supplied by Carlisle, shall be fastened to prevent metal from pulling free or buckling and sealed to prevent moisture from entering the roofing system or building.

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Physical properties of Sure-Weld FleeceBACK Membrane can be referenced in Part II, "Products" of the FleeceBACK Specification. Attach copies of the applicable Carlisle Details that pertain to the individual project to complete a bid package submittal.