



G U I D E - S P E C
Sure-Weld® TPO FleeceBACK AFX
Mechanically-Fastened Roofing System

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This **GUIDE-SPEC** is a brief outline of Carlisle’s Sure-Weld TPO FleeceBACK AFX Mechanically-Fastened Roofing System requirements and is intended for use as a submittal with a bid package. Specifiers and Carlisle Authorized Roofing Applicators must comply with the specification and details contained in Carlisle’s Technical Manual.

PART I GENERAL

1.01 DESCRIPTION

The Sure-Weld TPO FleeceBACK AFX Mechanically-Fastened Roofing System incorporates the use of Mechanically-Fastened AFX Membrane to recover various existing roof systems. The AFX membrane combines either Sure-Weld TPO membrane with 10 ounce per square yard, non-woven polyester polypropylene blended fleece-backing. Without an underlayment, the membrane can be installed directly over a smooth surfaced BUR, mineral surfaced cap sheet, modified bitumen, or an acceptable single-ply membrane and mechanically fastened to an acceptable steel or wood deck.

Securement of membrane will be with Carlisle HP-X Fasteners and Piranha Plates spaced a maximum of 12” on center in the field of the roof area. As an alternate to the Piranha Plates, Carlisle Metal Fastener Bar or Polymer Bar may be substituted. Membrane securement to other types of decks will require approval from Carlisle based upon pullout values achieved.

A salvage edge (fleece-backing is discontinued) is provided on one edge along the length of the membrane. Adjoining Sure-Weld sheets are seamed together with a hot air weld. Sheet end laps are butted and overlaid with Sure-Weld reinforced membrane and hot air welded.

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 AFX 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 50’ in height or projects where the membrane is expected to come in direct contact with petroleum-based products, waste products (i.e., grease, oil animal fats, etc.) and other chemicals.
 - 2. Projects where 20 or 25-year System Warranties or wind speed coverage greater than 72 mph are specified.

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. Interior moisture generated due to the construction process or from the operation of the building could adversely impact various components within the roofing assembly if not addressed. Refer to Carlisle Technical Manual for industry recommendations.



1.05 WARRANTY

Membrane System Warranty is available for roofing systems on commercial buildings within the United States and applies only to products manufactured or marketed by Carlisle SynTec. The membrane system is defined as membrane, flashings, adhesives, sealants and other Carlisle brand products utilized in the installation.

Table I Sure-Weld TPO FleeceBACK AFX Mechanically Fastened Systems Warranty Options

Years	Minimum Membrane Thickness	Peak Gust Wind Speed Warranty
		55 mph
5,10, or 15 year	Sure-Weld 120-mil	√

Notes: N/A = Not Acceptable √= Acceptable

General: Mechanical Fastening limited to 55 mph, refer to Attachment I, of the FleeceBACK AFX Specification for number of fastening sheets and fasteners

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., Sealant, cleaners, primers, Pourable Sealer, and Pressure-Sensitive Flashing).
- C. 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 mopping.

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

The membrane incorporates 45-mil, 60-mil or 80-mil thick reinforced Sure-Weld TPO membrane laminated to 10 ounce per square yard, non-woven polyester polypropylene blended fleece resulting in a total finished sheet thickness of 120-mil, 135-mil or 155-mil. Membranes are available in 6' or 12' wide and length of 75'.

2.03 RELATED CARLISLE MATERIALS

- A. Carlisle Base Sheets, Fasteners/Plates, CCW-550 Primer, Primer, Lap Sealant, Pressure Sensitive Cover Strips, Weathered Membrane Cleaner, Termination Bars, Water Cut-Off Mastic, and other Carlisle products such as cover boards, insulations, and edgings are also required when a System Warranty is specified.
- B. Other Carlisle Products – Walkway Pads, Pre-Molded Pipe Seals, LIQUISEAL Liquid Flashing and Pressure-Sensitive Inside/Outside Corners.

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 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 Carlisle Fasteners (when mechanical attachment of insulation or base sheets is specified).

3.03 SUBSTRATE REQUIREMENTS

- A. The membrane may be installed over an existing smooth surfaced asphalt built-up roof (Type III or IV Asphalt), modified bitumen or mineral surfaced cap sheet and mechanically fastened to the roof deck with Carlisle Fasteners/ Plates or Bars for up to a 15 year warranty.
- B. The substrate must be dry, relatively smooth, and free of protrusions, debris, sharp edges or foreign materials, accumulated water, ice and snow. Cracks or voids in the substrate greater than 1/4" must be filled with a suitable material.
- C. Cut and remove wet insulation as identified by the specifier and fill all voids with new insulation, so that it is flush with the existing roofing assembly.

3.04 INSTALLATION

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

A. Membrane Installation

1. Sure-Weld TPO FleeceBACK AFX Membrane shall be positioned over the existing roof surface and mechanically fastened to the roof deck with Carlisle Fasteners and Plates or Bars spaced a maximum of 12" on center in the field of the roof area. Placement of the securement will be along the edge without a selvage edge.
2. **Perimeter Securement Requirements**

The membrane shall be secured around the building perimeter using additional rows of Carlisle Fasteners and Plates or Bars positioned along the centerline of the 12' wide sheets as follows:

Sure-Weld Pressure-Sensitive Cover Strips (in conjunction with TPO Primer) or a minimum 6" wide Sure-Weld Reinforced Membrane (hot air welded) shall be used to overlay the fasteners and plates.

Adjoining sheets of Sure-Weld TPO FleeceBACK AFX Membrane are overlapped approximately 5-1/2" along the length of the membrane (at the selvage edge) where fastening plates will be located.

3. **End Laps**

At end laps (along the width of the sheet), membranes shall be butted together which will be overlaid with 6" wide Sure-Weld reinforced membrane hot air welded on all edges.

B. Additional Membrane Securement

The 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" in one horizontal foot and at all other penetrations in accordance with Carlisle's Details published in the Carlisle Technical Manual.

C. Membrane Flashing

1. Flash all walls and curbs with FleeceBACK AFX or Sure-Weld reinforced membrane. Non-reinforced membrane shall be limited to inside and outside corners, field fabricated pipe seals, scuppers and Sealant Pockets where the use of pre-molded accessories are not practical.
2. When using the Sure-Weld Pressure-Sensitive Cover Strip to overlay metal edging flanges or fasteners/plates, Carlisle Weather Membrane Cleaner is used to clean surfaces as needed. Apply Carlisle TPO Primer or Low-VOC TPO Primer prior to applying Pressure-Sensitive

Cover Strip.

D. Metal Work

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

Note: Fleece backing must be removed from the back of the membrane prior to completing compression seal terminations so Water Cut-Off Mastic is applied directly to the membrane surface. Apply heat to the fleece material and scrape to fully remove.

2. Carlisle recommends a SecurEdge Metal Edging/Coping, or Drip Edge for membrane termination. Installation instruction sheets are available from Carlisle.
3. Metal work by others, when specified, must be fastened to prevent the metal from pulling free or buckling, and sealed to prevent moisture from entering the roofing system or building. **Unless supplied by Carlisle, the performance and integrity of metal work by others is not included in this specification and is excluded from the Carlisle warranty.**
4. **On retrofit projects**, existing counterflashing, edging, expansion joint covers, copings, etc., shall not be reused unless investigated by the specifier to determine its compliance to Carlisle's current details.

Attach copies of the applicable Carlisle Details that pertain to the individual project to complete a bid package submittal.

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