

# Sure-Seal® EPDM Roofing Systems

## G U I D E - S P E C

### Sure-Seal®/Sure-White™ EPDM Adhered Roofing System

January 2021

This **GUIDE-SPEC** is a brief outline of Carlisle's Sure-Seal/Sure-White EPDM 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 Carlisle Technical Manual prior to design or bid. The "Products" Section included in the Carlisle technical manual and Carlisle's Product Data Sheets contain information on proper usage of Carlisle products as well as applicable cautions and warnings. Prior to the installation of this roofing system, this information must be thoroughly reviewed.

#### PART I GENERAL

##### 1.01 DESCRIPTION

**The Design "A" Adhered Roofing System** incorporates Sure-Seal (black) 60 or 90- mil thick non-reinforced or Sure-White (white-on-black) 60 or 90-mil thick non-reinforced or 45, 60 or 75-mil Sure-Tough™ reinforced EPDM membrane. An acceptable insulation is mechanically fastened to the roof deck or adhered with Carlisle supplied urethane-based insulation adhesive or hot asphalt and the EPDM membrane is fully adhered to the insulation with Carlisle EPDM Bonding Adhesive (Sure-Seal Bonding Adhesive, Low-Voc Bonding Adhesive, Solvent-Free Bonding Adhesive, Water Based Adhesive or CAV-GRIP III Low-VOC Adhesive). Adjoining sheets of EPDM membrane are spliced together using 3" or 6" wide SecurTAPE™ and Primer OR Factory-Applied TAPE (FAT™) and Primer. There are no maximum slope restrictions for the application of this roofing system.

##### 1.02 QUALITY ASSURANCE

- A. This roofing system must be installed by a Carlisle Authorized Roofing Applicator in compliance with shop drawings 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 EPDM 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 EPDM 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 Spec Supplement G-01-18 "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.

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 Non-Reinforced EPDM Membrane Thickness for Various Warranty Options**

Warranty Duration	Sure-Seal or Sure-White Non-Reinforced Membranes				
	Warranty Wind Speed Coverage			Minimum Membrane Thickness	Hail Coverage
	55, 72 or 80 mph	90 to 100 mph	110 to 120 mph		*(Cover Board set in Adhesive)
	Adhered	Adhered	Adhered		
5,10, or 15 year	√	√	√	60-mil Sure-Seal OR Sure-White	1" for Adhered*
20 year	√	√	√	60-mil Sure-Seal OR Sure-White	1" for Adhered*
25 year (3)	√ (1)	√ (1)	N/A	60-mil Sure-Seal OR Sure-White	1" for Adhered*
30 year (3)	√ (1)	√ (1)	N/A	90-mil Sure-Seal OR Sure-White	2" for Adhered*

Notes: N/A = Not Acceptable √= Acceptable

- (1) Standard 90-8-30A, EPDM x-23 Low-VOC or CAV-GRIP III Bonding Adhesive must be utilized.
- (2) When Sure-Tough Reinforced membrane is specified, 60-mil membrane minimum is required for warranties for up to 15 year. Projects with 20 Year Warranty must incorporate 75-mil membrane.
- (3) See Carlisle Technical Manual for enhanced design requirements.

**Table II Reinforced EPDM Membrane Thickness for Various Warranty Options**

Warranty Duration	Sure-Tough Reinforced Membranes					
	Warranty Wind Speed Coverage			Minimum Membrane Thickness	Hail Coverage	Puncture Coverage
	55, 72 or 80 mph	90 mph	100 to 120 mph		*(Cover Board set in Adhesive)	
	Adhered	Adhered	Adhered			
5,10, or 15 year	√	√	√	45-mil Sure-Tough	N/A	8 man hours
20 year	√	√	√	60-mil Sure-Tough	1" for Adhered*	16 man hours
25 year (2)	√ (1)	√ (1)	√ (1)	75-mil Sure-Tough	2" for Adhered*	32 man hours
30 year (2)	√ (1)	√ (1)	√ (1)	75-mil Sure-Tough	2" for Adhered*	32 man hours

Notes: N/A = Not Acceptable √= Acceptable

- (1) Standard 90-8-30A, EPDM x-23 Low-VOC, CAV-GRIP III Bonding Adhesive must be utilized.
- (2) See Carlisle Technical Manual for enhanced design requirements.

## 1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

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

## 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 by Carlisle**, is not the responsibility of Carlisle and is expressly disclaimed by the Carlisle Warranty.

## 2.02 MEMBRANE

- A. **Sure-Seal/Sure-White Non-Reinforced EPDM Membranes:** Cured non-reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) compounded elastomer. 60, or 90 mil thick Non-Reinforced EPDM membrane is available in Sure-Seal (black) or Sure-White (white-on-black). Sure-White membranes are installed with the white surface facing up. Sure-Seal membrane with thickness up to 60-mil can be available in widths up to 50' and lengths up to 150' (200' for 45-mil membrane only). Sure-White membrane with thickness of 60-mil is available up to 30' widths and lengths up to 150' long. Sure-Seal /Sure-White 90-mil membranes are available in widths up to 10' and lengths up to 100'. Sure-Seal KLEEN (black) EPDM Membrane (mica dust has been removed during manufacturing) is available for sheets maximum 10' wide.
- B. **Sure-Tough Reinforced EPDM Membranes:** Cured reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) compounded elastomer. Sure-Tough Reinforced EPDM Membrane is available, only in black and in 45, 60, or 75-mil thicknesses. Reinforced membrane with polyester fabric conforms to ASTM D4637, Type II (reinforced). All sheets are available with 3" or 6" Factory Applied SecurTAPE (FAT).

## 2.03 RELATED MATERIALS

- A. 90-8-30A, Low-VOC or Solvent Free EPDM Bonding Adhesive, Aqua Base Bonding Adhesive, EPDM or Low VOC EPDM Primer, SecurTAPE, Lap Sealant, Cured EPDM Flashing, Pressure-Sensitive Flashing, uncured Elastoform Flashing®, Seam Fastening Plates and Pressure-Sensitive RUSS™ (with the corresponding fasteners) are required for use with this roofing system. Other Carlisle products, such as, insulation, insulation fasteners, edgings and termination bars are also required when a Total System Warranty is specified.
- B. Other Products: Walkway Pads, Pre-Molded Pipe Flashings, Cured EPDM Flashing, Pressure-Sensitive Inside/Outside Corners, Pipe Flashings, LIQUISEAL Liquid Flashing and Pourable Sealer 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 to 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 PREPARATION

- A. 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.
- 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. Clear the substrate of debris and foreign material. Fresh bitumen based roof cement must be removed or concealed.

### 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. Fully adhere the EPDM membrane to the acceptable substrate with 90-8-30A, Low-VOC or Solvent Free EPDM Bonding Adhesive or Aqua Base Bonding Adhesive at the rate specified on the container label. Overlap adjacent EPDM membrane sheets a minimum of 3".
2. **Membrane Splicing with SecurTAPE (membrane is available with Factory-Applied Tape).**
  - a. Refer to Carlisle Technical Manual for membrane splicing.

#### C. **Additional Membrane Securement**

EPDM 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 other penetrations in accordance with Carlisle's details. Additional membrane securement may be provided by Pressure-Sensitive RUSS™ (Reinforced Universal Securement Strip) and Seam Fastening Plates.

#### D. **Membrane Flashing**

1. Refer to Carlisle Technical Manual for membrane flashing.

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