

# FleeceBACK® EPDM

## Membranes with Factory-Applied Tape™ Seam Technology



### Overview

Carlisle's Sure-Seal® and Sure-White® FleeceBACK EPDM membranes are manufactured using a patented hot-melt adhesive technology to bond a fleece backing to the EPDM sheeting. FleeceBACK EPDM membranes are available in total sheet thicknesses of 100-, 115-, 145-mils and are manufactured with 3" or 6" Factory-Applied Tape to ensure consistent, quality seams. Carlisle's FleeceBACK EPDM is tough, durable, and versatile and is ideal for re-roofing or new construction projects.

### Features and Benefits

- » UL Class A rated
- » Choice of Sure-Seal (black) or Sure-White EPDM membranes
- » Superior wind uplift performance and ratings (up to FM 1-990) due to the mechanical bond between fleece and adhesive
- » Fleece reinforcement adds toughness, durability, and enhanced puncture resistance
  - 100-mil membrane delivers 40% greater puncture resistance and 180% greater tear resistance than 60-mil EPDM
  - Better puncture resistance than modified bitumen
- » 67% fewer seams than modified bitumen systems when 10' FleeceBACK sheets are used
- » Factory-Applied Tape provides consistent seam quality and enhances productivity
- » Excellent hail damage resistance
  - Passes FM's severe hail test
  - Passes UL-2218 Class 4 rating
  - Passes National Bureau of Standards – 23 Ice Ball test up to 3"-diameter hail with the membrane cooled to 32°F

### Installation

**Adhered Roofing System** -Insulation is mechanically fastened or adhered with Flexible FAST™ Adhesive to the roof deck. When adhering insulation with Flexible FAST Adhesive, spray-apply, splatter, or extrude the adhesive onto the substrate and allowed to rise and foam. Once adhesive develops string/body/gel (approximately 2 minutes depending on climate), place insulation into the adhesive and walk it in. Roll the insulation with a 150-pound segmented weighted roller to ensure full embedment. Spray-apply, splatter, or extrude Flexible FAST Adhesive to the membrane and allow foam to develop string/body/gel (approximately 2 minutes depending on climate) prior to setting FleeceBACK into the adhesive. Roll FleeceBACK membrane with a 150-pound segmented weighted roller to ensure full embedment. Splices are sealed with Factory-Applied Tape. End laps are butted then sealed with Pressure-Sensitive Cured Cover Strip or Overlayment Strip.

When the completion of flashings and terminations is not possible by the end of each work day, provisions must be taken to temporarily close the membrane to prevent water infiltration.

*Review Carlisle specifications and details for complete installation information.*

### Splicing

1. Roller-apply HP-250 Primer or Low-VOC EPDM Primer to the splice area of the bottom sheet with a short-nap-length paint roller. The primed area will be free of globs and puddles. Allow primer to dry until it does not transfer to a dry finger.
2. Allow the taped edge of the top sheet to fall freely onto the primed sheet below.
3. Pull the poly backing from the Factory-Applied Tape beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface.
4. Press top sheet onto bottom sheet using firm, even hand pressure across the splice and toward the splice edge.
5. Immediately roll the splice with a 2"-wide (50 mm) steel roller or Carlisle's Stand-Up Seam Roller, using positive pressure. Roll across the splice edge when using a 2" roller, not parallel to it. When using the Stand-Up Seam Roller, roll parallel to direction of the splice.
6. For cold-weather splicing below 40°F (4°C), these steps must be followed:
  - Heat the primed area of the bottom membrane with a hot-air gun as the top sheet with Factory-Applied Tape is applied and pressed into place.

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- Prior to rolling the splice area with a 2"-wide steel hand roller, apply heat to the top side of the membrane with a hot-air gun. The heated surface should be hot to the touch. Be careful not to burn or blister the membrane.
7. Install Pressure-Sensitive Elastoform Flashing® or Pressure-Sensitive T-Joint Covers over all field splice intersections. Apply Lap Sealant according to appropriate detail.

### Precautions

- » UV-resistant sunglasses are required when working with Sure-White membranes.
- » White surfaces reflect heat and may become slippery due to frost and ice accumulation. Exercise caution when walking on wet membrane.
- » Care must be exercised when working close to a roof edge when the surrounding area is snow-covered.
- » FleeceBACK membrane rolls must be tarped and elevated to keep dry prior to installation. If the fleece gets wet, use a wet vac system to help remove moisture from the fleece. Do not install membrane if fleece is wet.
- » Prolonged jobsite storage at temperatures in excess of 90°F (32°C) may affect product shelf life.
- » In warm, sunny weather, shade the tape end of the rolls until ready to use.

LEED® Information		
	Sure-Seal	Sure-White
Pre-consumer Recycled Content	5%	0%
Post-consumer Recycled Content	0%	0%
Manufacturing Location	Carlisle, PA	Carlisle, PA
Solar Reflectance Index (SRI)	0-1	98

Radiative Properties for Cool Roof Rating Council (CRRC) and LEED		
Property	Test Method	Sure-White FleeceBACK
CRRC – Initial solar reflectance	ASTM D1549	0.79
CRRC – Solar reflectance after 3 years	ASTM D1549 (uncleaned)	0.71
CRRC – Initial thermal emittance	ASTM C1371	0.86
CRRC – Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.89
LEED – Thermal emittance	ASTM E408	0.91
SRI – (Solar Reflectance Index)	ASTM E1980 (initial) 3 year aged	98 87

Typical Properties and Characteristics				
Physical Property	Test Method	SPEC (PASS)	Sure-Seal	Sure-White
<b>Tolerance on Nominal Thickness, %</b>	ASTM D751	±10	±10	±10
<b>Thickness Over Fleece, min</b>	ASTM D4637			
100-mil (2.54 mm)		.030 (.762)	.045 (1.14)	—
115-mil (2.92 mm)		.045 (1.14)	.060 (1.52)	.060 (1.52)
145-mil (3.68 mm)		.080 (2.03)	.090 (2.28)	.090 (2.28)
<b>Weight, lbm/ft² (kg/m²)</b>				
100-mil	—	—	0.29 (1.4)	—
115-mil			0.38 (1.9)	0.42 (2.1)
145-mil			0.59 (2.4)	0.63 (3.1)
<b>Breaking Strength, min, lbf (N)</b>	ASTM D751			
100- & 115-mil	Grab Method	90 (400)	210 (934)	210 (934)
145-mil			250 (1,112)	235 (1045)
<b>Elongation, Ultimate, min, %</b>	ASTM D412	300**	480**	500**
<b>Tearing Strength, min, lbf (N)</b>	ASTM D751			
100- & 115-mil	B Tongue	10 (45)	45 (200)	45 (200)
145-mil	Tear		60 (266)	45 (200)
<b>Puncture Resistance, Joules</b>	ASTM D5635			
100-mil			20	—
115-mil			27.5	25
145-mil			35	42.5
<b>Puncture Resistance, lbf</b>	FTM 101C			
100-mil	Method 2031		328	—
115-mil			338	325
145-mil			355	307
<b>Puncture Resistance, lbf</b>	ASTM D120			
100-mil			18	17
115-mil			22	19
145-mil			28	22
<b>Puncture Resistance, lbf</b>	ASTM D5602			
100-mil			63.99	—
115-mil			63.99	63.99
145-mil			63.99	63.99
<b>Hail Resistance</b>	UL 2218			
100-mil	Over Iso	Class 4 Rating	Pass	Pass
115-mil	HP Rec. Bd.	2" Steel	Pass	Pass
145-mil	Gypsum Bd.	Ball at 20'	Pass	Pass
<b>Brittleness point, max, °F (°C)</b>	ASTM D2137	-49 (-45)	-67 (-55)	-67 (-55)
<b>Resistance to Heat Aging*</b>	ASTM D573			
Properties after 4 weeks @ 240°F (116°C) for Sure-Seal, 1 week @ 240°F (116°C) for Sure-White				
<b>Breaking Strength, min, lbf (N)</b>	ASTM D751	80 (355)	200 (890)	200 (890)
Elongation, Ultimate, min, %	ASTM D412	200**	225**	250**
Linear Dimensional Change, max, %	ASTM D1204	±1.0	-0.7	-0.7
<b>Ozone Resistance*</b>	ASTM D1149	No cracks	No cracks	No cracks
Condition after exposure to 100 pphm Ozone in air for 168 hours @ 104°F (40°C). Specimen wrapped around 3-inch (7.5 cm) mandrel				
<b>Resistance to Water Absorption*</b>	ASTM D471	+8, -2**	+2.0**	+3.6**
After 7 days immersion @ 158°F (70°C). Change in mass, max, %				
<b>Resistance to Outdoor (Ultraviolet) Weathering*</b>	ASTM G155	No cracks	No cracks	No cracks
Xenon-Arc, total radiant exposure at 0.70 W/m² irradiance, 80°C black panel temp.				
	ASTM D4637	No crazing	No crazing	No crazing
	Conditions	7,560 kJ/m²	41,580 kJ/m²	25,200 kJ/m²
		3,000 hrs	16,500 hrs	10,000 hrs

\*Not a Quality Control Test due to the time required for the test or the complexity of the test. However, all tests are run on a statistical basis to ensure overall long-term performance of the sheeting.

\*\*Specimens to be prepared from coating rubber compound, vulcanized in a similar method to the reinforced product. Sure-Seal and Sure-White FleeceBACK EPDM membranes meet or exceed the minimum requirements set forth by ASTM D4637 for Type III fabric-backed EPDM single-ply roofing membranes.

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.