

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, and 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 1-945) 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 FAST™ or Flexible FAST Adhesive to the roof deck. When adhering insulation with Flexible FAST or Flexible FAST Adhesive, the adhesive is spray-applied or extruded 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 or extrude Flexible FAST or 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 | 105 |

Radiative Properties for ENERGY STAR®, Cool Roof Rating Council (CRR) and LEED

| Property | Test Method | Sure-White FleeceBACK |
|---|---|-----------------------|
| ENERGY STAR – Initial solar reflectance | Solar Spectrum Reflectometer | 0.84 |
| ENERGY STAR – Solar reflectance after 3 years | Solar Spectrum Reflectometer (after cleaning) | 0.80 |
| CRR – Initial solar reflectance | ASTM D1549 | 0.76 |
| CRR – Solar reflectance after 3 years | ASTM D1549 (uncleaned) | 0.64 |
| CRR – Initial thermal emittance | ASTM C1371 | 0.90 |
| CRR – Thermal emittance after 3 years | ASTM C1371 (uncleaned) | 0.87 |
| LEED – Thermal emittance | ASTM E408 | 0.91 |
| Solar Reflectance Index (SRI) | ASTM E1980 | 105 |

* The ENERGY STAR program recommends using the Roof Savings Calculator (rsc.ornl.gov) to determine if a white reflective roof will save or cost you money compared to a dark-colored roof depending on geographic climate conditions, building location, and other variables.

Typical Properties and Characteristics

| Physical Property | Test Method | SPEC (PASS) | Sure-Seal | Sure-White |
|---|---|---|---|---|
| Tolerance on Nominal Thickness, % | ASTM D751 | ±10 | ±10 | ±10 |
| Thickness Over Fleece, min 100-mil (2.54 mm) 115-mil (2.92 mm) 145-mil (3.68 mm) | ASTM D4637 Annex | .030 (.762) .045 (1.14) .080 (2.03) | .045 (1.14) .060 (1.52) .090 (2.28) | .045 (1.14) .060 (1.52) .090 (2.28) |
| Weight, lbm/ft² (kg/m²) 100-mil 115-mil 145-mil | — | — | 0.29 (1.4) 0.38 (1.9) 0.59 (2.4) | 0.33 (1.6) 0.42 (2.1) 0.63 (3.1) |
| Breaking Strength, min, lbf (N) 100- & 115-mil 145-mil | ASTM D751 Grab Method | 90 (400) | 200 (890) 250 (1,112) | 200 (890) 210 (934) |
| Elongation, Ultimate, min, % | ASTM D412 | 300** | 480** | 500** |
| Tearing Strength, min, lbf (N) 100- & 115-mil 145-mil | ASTM D751 B Tongue Tear | 10 (45) | 45 (200) 60 (266) | 45 (200) 45 (200) |
| Puncture Resistance, Joules 100-mil 115-mil 145-mil | ASTM D5635 | — | 15 20 25 | 25 25 32 |
| Puncture Resistance, lbf 100-mil 115-mil 145-mil | FTM 101C Method 2031 | — — — | 328 338 355 | 316 325 307 |
| Puncture Resistance, lbf 100-mil 115-mil 145-mil | ASTM D120 | — — — | 18 22 28 | 17 19 22 |
| Hail Resistance 100-mil 115-mil 145-mil | UL 2218 Over Iso HP Rec. Bd. Gypsum Bd. | Class 4 Rating 2" Steel Ball at 20' | Pass Pass Pass | Pass Pass Pass |
| Brittleness point, max, °F (°C) | ASTM D2137 | -49 (-45) | -67 (-55) | -67 (-55) |
| Resistance to Heat Aging* Properties after 4 weeks @ 240°F (116°C) for Sure-Seal, 1 week @ 240°F (116°C) for Sure-White | ASTM D573 | | | |
| Breaking Strength, min, lbf (N) Elongation, Ultimate, min, % Linear Dimensional Change, max, % | ASTM D751 ASTM D412 ASTM D1204 | 80 (355) 200** ±-1.0 | 200 (890) 225** -0.7 | 200 (890) 250** -0.7 |
| Ozone Resistance* 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 | ASTM D1149 | No cracks | No cracks | No cracks |
| Resistance to Water Absorption* After 7 days immersion @ 158°F (70°C). Change in mass, max, % | ASTM D471 | +8, -2** | +2.0** | +3.6** |
| Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, total radiant exposure at 0.70 W/m² irradiance, 80°C black panel temp. | ASTM G155 ASTM D4637 Conditions | No cracks No crazing 7,560 kJ/m² 3,000 hrs | No cracks No crazing 41,580 kJ/m² 16,500 hrs | No cracks No crazing 25,200 kJ/m² 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.