CARLISLE SYNTEC SYSTEMS

Sure-White® EPDM
Reinforced Membrane

Overview

Carlisle's Sure-White polyester-reinforced EPDM roof membranes are 60 mils (1.52mm) thick and are available with and without 6" Factory-Applied Tape™. Sure-White Reinforced membrane is formulated with non-halogenated fire retardants to inhibit the spread of flame and meets or exceed UL Class A requirements for slopes up to 2" (5.08cm), depending on the assembly.

Features and Benefits

- Internally reinforced sheets provide excellent resistance to punctures, tears, and scuffs that can be caused by maintenance traffic and are backed by the industry's longest puncture warranty
- Rubber membrane provides greater traction for rooftop maintenance personnel
- Factory-Applied Tape seams and Pressure-Sensitive flashing accessories enhance workmanship quality
- Extruded manufacturing technology results in seamless sheets that are UL Classified and FM Approved
- EPDM is the most dimensionally stable, heat-resistant membrane and stays flexible even in extremely cold conditions
- Zero fungi growth in ASTM G21 test
- Low gloss rating reduces glare while still being reflective
- Carlisle manufactures all the major components of a typical roofing system including membrane, flashings, tapes, adhesives, sealants, insulations, and insulating cover boards

Sustainable Attributes

Carlisle SynTec Systems has always focused on innovation to solve problems, improve performance, reduce labor, and above all, improve sustainability. Carlisle is committed to driving sustainable and efficient processes in the design and manufacturing of all products.

- Carlisle's Sure-White EPDM formulation has 25 years of proven performance
- Industry-leading resistance to outdoor weathering with 25,200 kJ/m^2 total radiant exposure without cracking or crazing
- White EPDM helps reduce air conditioning costs in warmer climates
  - Be advised a heating penalty may outweigh the cooling benefit in central and northern climates
- Life Cycle Assessment using EPA's TRACI model analyzed EPDM, TPO, PVC, and Modified Bitumen
  - EPDM had the lowest global warming potential
  - EPDM had the lowest acid rain impact
  - EPDM had the lowest contribution to smog

Carlisle's Factory-Applied Tape Seam Technology

With Carlisle's patented Factory-Applied Tape seam technology, most of the labor to create seams between membrane panels is completed in a quality-controlled, state-of-the-art environment. This process results in a reliable seam with no entrapped air bubbles. Consistent placement of the Factory-Applied Tape also maximizes the splice area, resulting in a high-quality seam.

Installation

Sure-White Reinforced 60-mil (1.52mm) membranes are utilized in Design MFS (Mechanically Fastened), Design MR (Metal Retrofit), and Design A (Fully Adhered) roofing systems.

Design MFS (Mechanically Fastened) and Design MR (Metal Retrofit): Insulation is mechanically fastened to the roof deck and membrane is secured with seam fastening plates or bars and fasteners. To complete seams between two adjoining membrane panels, apply primer to the splice area in conjunction with Carlisle's Factory-Applied Tape or hand-applied SecurTAPE™. Sheet flutter/noise may occur on mechanically fastened systems.

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Design A (Fully Adhered): Insulation is mechanically attached or adhered to the roof deck. The substrate and membrane are coated with the appropriate Carlisle bonding adhesive. The membrane is then rolled into place and broomed down. To complete seams between two adjoining membrane panels, apply primer to the splice area in conjunction with Carlisle's Factory-Applied Tape or hand-applied SecurTAPE.

Follow these steps for splicing in temperatures below 40°F (4°C):

- 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.
- 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.

Review Carlisle specifications and details for complete installation information.

Precautions

- Sunglasses that filter out ultraviolet light are strongly recommended as the white surface intensifies sunlight through reflection.
- White surfaces reflect heat and may become slippery due to frost and ice build-up. Membranes are slippery when wet. Exercise extreme caution during cold or wet conditions to prevent falls.
- Use caution when working close to a roof edge when surrounding area is snow-covered, as roof edge may not be clearly visible.
- Use proper stacking procedures for sufficient stability of materials.
- Membranes with Factory-Applied Tape should not be exposed to prolonged jobsite storage temperatures in excess of 90°F (32°C); otherwise, the shelf life of the Factory-Applied Tape may be affected. Shade the tape end of the rolls until ready to use in warm, sunny weather.
- Shelf life for Factory-Applied Tape is 1 year.

Radiative Properties for Cool Roof Rating Council (CRRC) and LEED®

Physical Property	Test Method	Sure-White EPDM
CRRC – Initial solar reflectance	ASTM C1549	0.77
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.66
CRRC – Initial thermal emittance	ASTM C1371	0.84
CRRC – Initial thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.87
SRI – (Solar Reflectance Index)	ASTM E1980 (initial) 3 year aged	95 80

LEED Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
Solar Reflectance Index	95
Corporate Sustainability Report	Yes

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Typical Properties and Characteristics

Sure-White EPDM

Physical Property	Test Method	SPEC (PASS)	Typical
Tolerance on Nominal Thickness, %	ASTM D751	±10	±10
Thickness Over Scrim, min, in. (mm) .060	ASTM D4637 Annex	0.015 (0.381)	0.025 (0.635)
Weight, lbm/ft² (kg/m²) .060			0.40 (2.0)
Breaking Strength, min, lbf (N) .060	ASTM D751 Grab Method CD	90 (400)	225 (996)
Elongation, Ultimate, min, % .060	ASTM D412 Die C	250**	480**
Tearing Strength, min, lbf (N) .060	ASTM D751 B Tongue Tear	10 (45)	70 (311)
Brittleness Point, max, °F (°C)*	ASTM D2137	-49 (-45)	-49 (-45)
Resistance to Heat Aging*	ASTM D573		
Properties after 7 days @ 240°F (116°C) Breaking Strength, min, lbf (N) Elongation, Ultimate, min, % Linear Dimensional Change, max, %	 ASTM D751 ASTM D412 Die C ASTM D1204	 80 (355) 200** ±1.0	 250 (1,110) 250** -1.0
Ozone Resistance* Condition after exposure to 100 pphm Ozone in air for 168 hours @ 104°F (40°C) Specimen wrapped around 3 in. mandrel	ASTM D1149	No Cracks	No Cracks
Resistance to Water Absorption* After 7 days immersion @ 158°F (70°C) Change in mass, max, %	ASTM D471	+8, -2**	5.2**
Water Vapor Permeance* Max, perms	ASTM E 96 (Proc. B or BW)	0.10	0.02
Fungi Resistance	ASTM G21	N/A	0 (No Growth)
Specular Gloss at 85°C	ASTM D523	N/A	3
Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, total radiant exposure at 0.70 W/m² irradiance, 80°C black panel temperature	ASTM G155	No Cracks No Crazing 2,520 kJ/m² 1,000 hrs	No Cracks No Crazing 25,200 kJ/m² 10,000 hrs
At 0.35 W/m² irradiance, 80°C black panel temperature		2,000 hrs	20,000 hrs
Air Permeance	ASTM E2178	(0.02 L/s*m²)	Pass

*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.

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.

Note: Sure-White reinforced EPDM membrane meets or exceeds the minimum requirements set forth by ASTM D4637 for Type II reinforced EPDM single-ply roofing membranes.

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