

Sure-Seal® EPDM

Cool Gray Membrane



Overview

Carlisle's Sure-Seal Cool Gray is a 60-mil (1.52 mm) non-reinforced EPDM-based elastomeric homogenous roof covering. This roofing membrane may be used for new single-ply roof construction and re-roofing applications. Sure-Seal Cool Gray EPDM is available in a 10' (3 m) width and lengths of up to 100' (30 m).

Features and Benefits

- » Sure-Seal Cool Gray EPDM offers reflectivity while still providing a "dry-down" effect
- » Full 60-mils of weathering material with no internal scrim
- » Added slip resistance of rubber and less glare than white roofs
- » Gray EPDM can be an ideal choice in markets where heating and cooling costs are more balanced
- » 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
- » Numerous studies and real world experience confirm that Sure-Seal EPDM's 540% elongation and weathering resistance result in superior hail damage resistance
- » EPDM is the most dimensionally stable heat resistant membrane and stays flexible even in extremely cold conditions, down to -40°F (see Flexibility/Torsion DMA data)
- » Extruded manufacturing technology results in seamless 10' wide sheets
- » 60-mil membranes available for up to 25-year warranties and are UL and FM approved
- » Zero fungi growth in ASTM G21 test

- » Carlisle manufactures all the major components of a typical roofing system including membrane, flashings, tapes, adhesives, sealants, insulations and insulating cover boards

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.

Productivity Boosting Features and Benefits:

- » With Carlisle's Factory-Applied Tape, most of the labor to create seams between membrane panels is completed in a quality-controlled, state-of-the-art environment
- » Factory-Applied Tape is available on 10' (3 m) wide Sure-Seal Cool Gray membrane, providing the fastest way to complete a seam in today's roofing market



Installation

Sure-Seal membrane is primarily utilized in Design A, Fully Adhered Roofing Systems.

Sure-Seal Design A: Fully Adhered Roofing System: insulation is mechanically attached or adhered to the roof deck. The substrate and membrane are coated with 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. As an alternative, Carlisle's hand-applied SecurTAPE™ may be used.

For cold weather splicing below 40°F (5°C), these steps must be followed:

1. 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.
2. 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.

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Precautions

- » Light Gray surfaces reflect heat and may become slippery due to frost and ice build-up. Exercise extreme caution during cold 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.
- » Exercise caution when walking on wet membrane. Membranes are slippery when wet.
- » 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.
- » When Sure-Seal with Factory-Applied Tape is used, 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-Seal Cool Gray EPDM
CRRC – Initial solar reflectance	ASTM C1549	0.48
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.42
CRRC – Initial thermal emittance	ASTM C1371	0.88
CRRC – Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.88
SRI – (Solar Reflectance Index)	ASTM E1980 (initial) 3 year aged	55 47

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
Solar Reflectance Index	55
Corporate Sustainability Report	Yes

Typical Properties and Characteristics

Physical Property	Test Method	SPEC. (PASS)	Typical
Tolerance on Nominal Thickness, %	ASTM D412	±10	±10
Weight, lbs/ft ² (kg/m ²) 60-mil			0.40 (2.0)
Tensile Strength, min, psi (MPa)	ASTM D412	1305 (9)	1465 (10.1)
Elongation, Ultimate, min, %	ASTM D412	300	540
Tear Strength, min, lbf/in (kN/m) (Die C)	ASTM D624	150 (26.3)	187 (32.7)
Factory Seam Strength, min	Modified ASTM D816	Membrane Rupture	Membrane Rupture
Resistance to Heat Aging* Properties after stated days @ 240°F (116°C)	ASTM D573	7 Days	21 Days
Tensile Strength, min, psi (MPa)	ASTM D412	1205 (8.3)	1345 (9.3)
Elongation, Ultimate, min, %	ASTM D412	200	280
Tear Strength, min, lbf/in (kN/m)	ASTM D624	125 (21.9)	170 (29.8)
Linear Dimensional Change, max, %	ASTM D1204	±1.0	-0.2
Ozone Resistance* Condition after exposure to 100 pphm Ozone in air for 168 hours @ 104°F (40°C) Specimen is at 50% strain	ASTM D1149	No Cracks	No Cracks
Brittleness Temp., max, °F (°C)*	ASTM D746	-49 (-45)	-67 (-55)
Resistance to Water Absorption* After 7 days immersion @ 158°F (70°C) Change in mass, max, %	ASTM D471	+8, -2	+3.3
Water Vapor Permeance* Max, perms	ASTM E 96 (Proc. B or BW)	0.10	0.02
Flexibility/Torsion DMA	ASTM D5279-08	N/A	55 MPa @ -40°F
Fungi Resistance	ASTM G21	N/A	0 (No Growth)
Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, total radiant exposure at 0.70 W/m ² irradiance, 80°C black panel temperature	ASTM G155	No Cracks No Cracking 7,560 kJ/m ² 3,000 hrs	No Cracks No Cracking 15,120 kJ/m ² 6,000 hrs
At 0.35 W/m ² irradiance, 80°C black panel temperature		6,000 hrs	12,000 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.

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-Seal non-reinforced EPDM membrane meets or exceeds the minimum requirements set forth by ASTM D4637 for Type I non-reinforced white EPDM single-ply roofing membranes.