



PVC FRS Fleece Back

Fiberglass Reinforced Scrim Membrane

PRODUCT DATA SHEET



DESCRIPTION

Fleece Back PVC FRS membranes are manufactured using a state-of-the-art extrusion process for complete scrim encapsulation. The PVC is reinforced with a high-strength fiberglass scrim and enhanced with fleece, creating a very tough, durable and versatile sheet that is ideal for reroofing or new construction projects. Available in total sheet thicknesses of 115- and 135-mils, this product can be used in fully adhered and mechanically fastened applications.

The Fleece Back PVC FRS formulation delivers excellent weatherability, flexibility and toughness, and the fiberglass reinforcing scrim provides additional dimensional stability to the sheet. In addition to providing a built-in separation layer for rough concrete decks or existing asphaltic-based roofing systems, the fleece backing enhances the membrane's puncture resistance.

FEATURES AND BENEFITS

- Available in white, gray, and tan and offered in 115- and 135-mil thicknesses
- Superior wind-uplift resistance due to the bond between fleece and adhesive
- 67% fewer seams than modified bitumen systems (using 10'-wide sheets)
- Wide window of weldability
- Fleece reinforcement adds toughness, durability, and enhanced puncture resistance
- Good chemical resistance to acids, bases, restaurant oils, fats, greases, and acid rain
- White PVC is California Title 24 compliant, and contribute to LEED® (Leadership in Energy and Environmental Design) credits

INSTALLATION

Adhered Roofing System – Low-Rise Foam

Insulation is mechanically fastened or adhered with Helix Low-Rise Adhesive to the roof deck. Spray-apply or extrude adhesive onto the substrate, and allow foam to develop string/body/gel prior to setting Fleece Back membrane into the adhesive. Roll Fleece Back membrane with a 75 lb. -150 lb. segmented weighted roller weighing at least 50 lbs. per linear foot to ensure full embedment. Splices are hot-air welded.

Adhered Roofing System – Water-Based

The fully adhered system starts with a suitable surface on which to apply the HydroBond™ Water-Based Adhesive. HydroBond can be applied to the approved substrate with a medium nap roller. Once the adhesive has been applied, roll the membrane in place. To prevent over-drying, MuleHide recommends applying the adhesive 3'-4' at a time ahead of the roll. Immediately broom the membrane starting from the center and working out to the sides of the sheet using a soft bristle push broom to work out any air bubbles. Immediately after brooming, a 75 lb.-150 lb. segmented weighted roller weighing at least 50 lbs. per linear foot.

Review MuleHide specifications and details for complete installation information.

PRECAUTIONS

- Sunglasses that filter out ultraviolet light are strongly recommended since the membrane's white surface is highly reflective to sunlight. Roofing technicians should dress appropriately and wear sunscreen.
- Smooth surfaces may promote slippery conditions due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
- Care must be exercised when working close to a roof edge when the surrounding area is snow-covered, as the roof edge may not be clearly visible.
- Use proper stacking procedures to ensure sufficient stability of the materials.
- Exercise caution when walking on wet membrane. Membranes may be slippery when wet.

LEED INFORMATION

Pre-consumer Recycled Content	5%
Post-consumer Recycled Content	0%
Manufacturing Location	Hillside, NJ
Solar Reflectance Index (SRI), Initial	White: 108, Tan: 89, Gray: 70



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SUPPLEMENTAL APPROVALS, STATEMENTS AND CHARACTERISTICS

Fleece Back PVC FRS membranes meet or exceed the requirements of ASTM D4434 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing. Fleece Back PVC is classified as Type III as defined by ASTM D4434.

PROTECTION & SAFETY

MuleHide maintains safety data sheets on all of its non-exempt products. Safety data sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers. MuleHide's safety data sheets should be read and understood by all of your supervisory personnel and employees before using MuleHide products in your facilities. For industrial professional use only.

ADDITIONAL INFORMATION

On projects where a MuleHide standard or premium warranty is requested, an authorized MuleHide representative shall inspect all completed work.

The information given on this PDS is subject to change without notice. Always check the MuleHide website at www.mulehide.com for the latest information, changes and updates or contact MuleHide at 800-786-1492.

TYPICAL PHYSICAL PROPERTIES

Physical Property*	ASTM D4434 Requirement	115-mil	135-mil
Thickness over scrim, in. (mm) ASTM D4434 optical method, average of 3 areas	0.016 min (0.40)	0.034 typ (0.762)	0.040 typ (1.016)
Membrane Thickness	-	60-mil + 55-mil fleece	80-mil + 55-mil fleece
Breaking Strength, (MDxCD), lbf (N), ASTM D751 Proc. A	55 (245) minimum	118 x 114 (525 x 507)	159 x 150 (707 x 667)
Elongation break of reinforcement (MDxCD), % ASTM D751 grab method	250 x 220 minimum	276 x 220	301 x 277
Seam Strength, min. ASTM D751 grab method (% breaking strength)	>75	PASS	PASS
Tearing Strength, (CD), lbf (N), ASTM D751 Proc. B, 8"x8"	45 (200)	60	60
Low Temp Bend, no cracks 5x ASTM D2136	PASS	PASS (-40°C)	PASS (-40°C)
Linear Dimensional Change % ASTM D1204, 6 hours @ 176°F	±0.5 max	0.36 x 0.00 typ	0.36 x 0.00 typ
Ozone Resistance, no cracks 7x, ASTM D1149, 168 hrs at 100pphm	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D570 166 hours @ 158°F water	±3.0 max	2.0 typ	2.0 typ
Field Seam Strength, lbf/in. (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min 60 (10.5) typ	25 (4.4) min 60 (10.5) typ
Water Vapor Permeance, Perms ASTM E96 Proc. B	No requirement	0.10 max 0.05 typ	0.10 max 0.05 typ
Puncture resistance Dynamic, J (ft-lb) ASTM D5635	20 (14.7)	PASS	PASS
Puncture resistance Static, lbf (N) ASTM D5602	33 (145)	PASS	PASS
Xenon-Arc Resistance, no cracks or crazing @ 10x, ASTM G155, 0.35 w/m ² at 340 nm, 63°C B.P.T, 12,600 kJ/m ² total radiant exposure 10,000 hours	PASS	PASS	PASS
Properties after heat aging ASTM D3045, 56 days at 176°F, Breaking strength, % retained, Elongation reinf., % retained	90 min 90 min	90 min 90 min	90 min 90 min

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.

RADIATIVE PROPERTIES FOR COOL ROOF RATING COUNCIL (CRRC) AND LEED®

RADIATIVE PROPERTY	TEST METHOD	WHITE PVC	TAN PVC	GRAY PVC
CRRC - Initial Solar Reflectance	ASTM C1549	0.86	0.72	0.59
CRRC - Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	0.63	0.60*	0.49*
CRRC - Initial Thermal Emittance	ASTM C1371	0.89	0.87	0.89
CRRC - Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	0.87	0.86*	0.86*
Solar Reflective Index (SRI)	ASTM E1980	108	89	70
Solar Reflective Index (SRI) SRI after 3 years	ASTM E1980	75	65	57

*Rapid Ratings.

DISCLAIMER

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