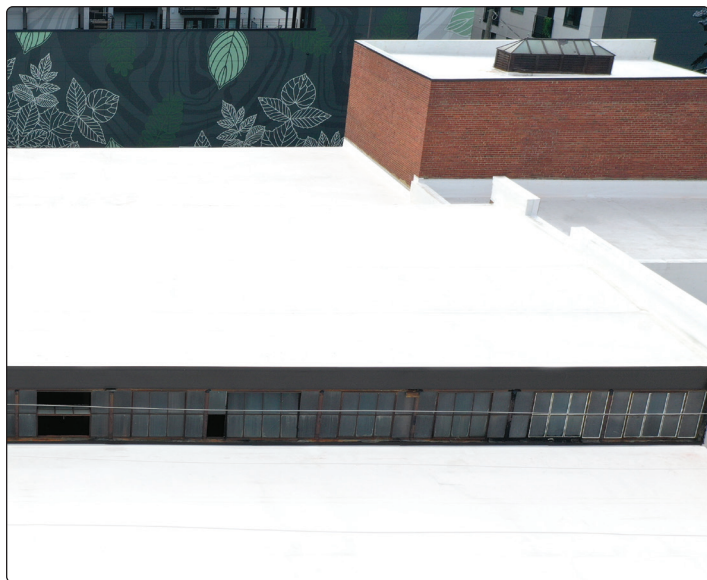




PVC FRS

Fiberglass Reinforced Scrim Membrane

PRODUCT DATA SHEET



DESCRIPTION

MuleHide's PVC FRS is an advanced-formula, heat-weldable PVC membrane used exclusively in fully adhered applications that utilize liquid-applied bonding adhesives. Designed to provide long-term weatherability and performance, thick PVC-based top and bottom plies encapsulate the membrane's internal fiberglass reinforcement, enhancing dimensional stability. The membrane's smooth surface facilitates a permanent weld for a consistent, watertight, monolithic roof assembly. All PVC FRS membranes are manufactured to exceed minimum thickness specifications.

FEATURES AND BENEFITS

- Manufactured to exceed minimum thickness specifications
- Exceptional fire and chemical resistance
- Fully formulated monolithic top-ply for long-term weatherability
- Meets or exceeds the requirements of ASTM D4434 Type II requirements
- Antimicrobials throughout the polymer for increased resistance to mold, mildew, and algae growth
- Highly flexible with wide window of weldability for ease of installation
- Available colors: white, tan and gray

INSTALLATION

Installation requires minimal labor and few components, making it quick and easy to install. Sheet seams are heat-welded together using hot-air welding equipment to create a monolithic, water-tight roof system.

PVC FRS is suitable for the following roof system:

Fully Adhered – membrane is adhered to a suitable substrate utilizing an appropriate bonding adhesive.

Review MuleHide specifications and details for complete installation information.

PRECAUTIONS

- Sunglasses that filter out ultraviolet light are strongly recommended when working on reflective membranes. Roofing technicians should dress appropriately and wear sunscreen.
- Exercise caution when walking on wet membranes; membranes may be slippery when wet or due to frost and ice buildup.
- Care must be exercised while 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.
- Store membrane in its original, undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins.
- Membrane that has been exposed to the weather or contaminated with dirt must be prepared with Sure-Flex PVC/KEE HP Membrane Cleaner prior to hot-air welding.

SUPPLEMENTAL APPROVALS, STATEMENTS AND CHARACTERISTICS

1. Reinforced PVC FRS membrane meets or exceeds the requirements of ASTM D4434 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing. Reinforced PVC FRS is classified as type II as defined by ASTM D4434
2. Reinforced PVC FRS was tested for dynamic puncture resistance per ASTM D5635 using the most recently modified impact head. 60-mil membrane was watertight after an impact energy of 10.0 J (14.75 ft-lbf), which passes the ASTM D4434 requirement
3. Reinforced PVC FRS was tested for static puncture resistance per ASTM D5602 and exceeded 33 lbf (145 N), which passes the ASTM D4434 requirement
4. UL 2218 Class 4 Rating for impact resistance

LEED INFORMATION	
Pre-consumer Recycled Content	Up to 10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI), Initial	White: 110, Tan: 88, Gray: 70



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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	60-mil Minimum	80-mil Minimum
Thickness over scrim, in. (mm) ASTM D7635	0.016 (0.40) minimum	0.034 (0.86)	0.040 (1.02)
Weight, lbs/ft ² (kg/m ²)	No Requirement	0.44 (2.15)	0.54 (2.63)
Breaking Strength, lbf/in (N), MDxCD, ASTM D751 Proc B	55 (245) minimum	118 x 114 (525 x 507)	159 x 150 (707 x 667)
Elongation at break percentage MDxCD, ASTM D75, Proc B	250 x 220 minimum	276 x 220	301 x 277
Tear Resistance, lbf (N), MD x CD, ASTM D1004	10 (45) minimum	21 x 24 (93 x 107)	34 x 33 (151 x 147)
Low Temp Bend, no cracks 5x @ -40°C, ASTM D1004	-40°C	PASS	PASS
Linear Dimensional Change % ASTM D1204, 6 hours @ 176°F	0.1 max	0.05 x 0.05	0.06 x 0.05
Ozone Resistance, no cracks 7x, ASTM D1149, 168 hrs at 100pphm	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D570 166 hours @ 158°F	±3.0 max	PASS	PASS
Puncture resistance Dynamic, J (ft-lb) ASTM D5602	10 (7.4)	PASS	PASS
Puncture resistance Static, lbf (N) ASTM D5635	33 (15)	PASS	PASS
Properties after heat aging ASTM D3045, Tensile Strength ASTM D638, Elongation percent of original	90 min 90 min	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
Seam Strength, percent of original	75 mi.	PASS	PASS

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 (CRR) AND LEED®

RADIATIVE PROPERTY	TEST METHOD	WHITE PVC	TAN PVC	GRAY PVC
CRR - Initial Solar Reflectance	ASTM C1549	0.87	0.72	0.59
CRR - Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.56	0.49
CRR - Initial Thermal Emittance	ASTM C1371	0.89	0.87	0.89
CRR - Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	0.88	0.87	0.89
Solar Reflective Index (SRI) Initial SRI	ASTM E1980	110	89	70
Solar Reflective Index (SRI) SRI after 3 years	ASTM E1980	86	65	57

DISCLAIMER

The statements provided concerning the material shown are intended as a guide for material usage and are believed to be true and accurate at the time of printing. No statement made by anyone may supersede this information, except when done in writing by Mule-Hide Products Co., Inc. ("MuleHide"). Since the manner of use is beyond our control, MuleHide does not authorize anyone to make any warranty of merchantability or fitness for any particular purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material. This product may be eligible for a MuleHide warranty, please check the MuleHide website at www.mulehide.com or contact MuleHide directly at 800-786-1492 for details. Buyer and user accept the product under these conditions and assume the risk of any failure, any injury to person or property (including that of the user), loss or liability resulting from the handling, storage or use of the product whether or not it is handled, stored or used in accordance with the directions or specifications. MuleHide must be notified in writing of any claims and be given the opportunity to inspect the alleged failure before repairs are made.