CARLISLE'S FleeceBACK® PVC KEE Membranes

Overview

Sure-Flex™ PVC KEE FRS FleeceBACK membranes are manufactured using a hot-melt extrusion process for complete scrim encapsulation. Once the PVC is reinforced and enhanced with fleece, the total sheet thicknesses available are 105, 115 and 135 mils creating a very tough, durable and versatile sheet that is ideal for reroofing or new construction projects.

Sure-Flex PVC KEE FRS FleeceBACK features a high-strength combination of Elvaloy® KEE copolymer along with Fiberglass Reinforcing Scrim and our polyester fleece backing. DuPont's® Elvaloy KEE copolymer is designed to enhance the weatherability, flexibility and toughness of PVC sheeting. Elvaloy KEE is a flexible solid that won't migrate out of the sheet over time, keeping the membrane more pliable and weldable as it ages. The solid nature of Elvaloy results in less smoke generation during the welding process, making it more user friendly. The Fiberglass Reinforcing Scrim is designed to provide dimensional stability to the sheet for fully adhered applications. The fleece backing enhances the puncture resistance of the sheet as well as providing a built in separation layer for rough concrete decks or existing asphaltic-based roofing systems.

Intended Uses

FleeceBACK PVC membranes are intended to be used with Adhered or Mechanically Fastened roofing systems. FleeceBACK PVC is ideally suited for specifiers and building owners who have a need for a tough, durable and dimensionally stable PVC membrane.

Features and Benefits

- Choice of white membranes in 105, 115 and 135 mils
  Roll Sizes: 105-mil = 10' x 100'
  115-mil = 10' x 80'
  135-mil = 10' x 65'
- Superior wind uplift performance due to a mechanical bond between fleece and adhesive
- 67% fewer seams than Modified Bitumen with 10'-wide sheet
- Wide window of weldability
- Fleece reinforcement adds toughness, durability and enhanced puncture resistance
- Excellent dimensional stability with Fiberglass Reinforced Scrim
- Low-volatility plasticizer
- Excellent chemical resistance to acids, bases, restaurant oils, fats, greases and acid rain
- ENERGY STAR®*, LEED® and California Title 24 Compliant

Installation

Adhered Roofing System

Insulation is mechanically fastened or adhered with Flexible FAST™ Adhesive to the roof deck. When adhering insulation with FAST Adhesive, the adhesive is applied to the substrate and allowed to rise and foam. Once FAST Adhesive develops string/body/gel (typically 2 minutes) place insulation into the adhesive and walk it in. Roll the insulation with a 30"-wide 150-pound weighted roller to ensure full embedment. Spray-apply or extrude Flexible FAST Adhesive to the substrate and allow foam to develop string/body/gel (typically 2 minutes) prior to setting FleeceBACK into the FAST Adhesive. Roll FleeceBACK membrane with a 30"-wide 150-pound weighted roller to ensure full embedment. Splices are hot-air welded.

Consult Carlisle specifications for complete installation information.

Precautions

1. Use proper stacking procedures to ensure sufficient stability.
2. Exercise caution when walking on wet membrane.
3. U.V.-resistant sunglasses are required for Sure-Flex membranes.
4. White surfaces reflect heat and may become slippery due to frost and ice accumulation.
5. Care must be exercised when working close to a roof edge when the surrounding area is snow covered.
6. 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.
7. Sure-Flex exposed to the weather must be prepared with Carlisle PVC Membrane Cleaner prior to hot-air welding.

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • **www.carlisle-syntec.com**

Carlisle SynTec

CARLISLE'S

FleeceBACK PVC KEE Membranes

LEED Info

Pre-consumer Recycled Content	5%
Post-consumer Recycled Content	0%
Manufacturing Location	Hillside, NJ
Solar Reflectance Index	White: 107

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

Physical Property	Test Method	White
ENERGY STAR – Initial solar reflectance	Solar Spectrum Reflectometer ASTM E903	0.86
ENERGY STAR – Solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning) E903	0.70
CRRC – Initial solar reflectance	ASTM C1549	0.86
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70
CRRC – Initial thermal emittance	ASTM C1371	0.86
CRRC – Initial thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.82
LEED – Thermal emittance	ASTM E408	0.86
Solar Reflectance Index (SRI)	ASTM E1980	108

Sure-Flex FleeceBACK Membranes

Typical Properties and Characteristics*

Physical Property	Test Method	SPEC. (Pass)	Sure-Flex
Tolerance on Nominal Thickness, %	ASTM D638	+/-10	+/-10
Thickness over Fleece, min	ASTM D4637		
105-mil (2.67 mm)	Annex	.030 (.762)	.050 (1.27)
115-mil (2.92 mm)		.045 (1.14)	.060 (1.52)
135-mil (3.43 mm)		.080 (2.03)	.080 (2.03)
Thickness over Scrim, min	ASTM D4434		
105-mil		0.016	0.016
115-mil		0.016	0.022
135-mil		0.016	0.035
Weight, lbm/ft²			
105-mil		—	0.41
115-mil		—	0.49
135-mil		—	0.58
Breaking Strength, min, lbf (kN)	ASTM D751		
105-mil	Grab Method	90 (0.4)	300 (1.3)
115-mil	MD		400 (1.8)
135-mil			425 (1.9)
Elongation at break of internal fabric, %	ASTM D638	250 min	270
Cross Machine Direction		220 min	250
Tearing Strength, min, lbf (kN)	ASTM D1004		
	B Tongue Tear	10 (45)	12 (53)
Puncture Resistance, Joules	ASTM D5635		
105-mil		20	20
115-mil		20	Pending
135-mil		20	Pending
Static Puncture Resistance, lbf (kg)		33	Pass
Puncture Resistance, lbf	FTM 101C		
100-mil	Method 2031	—	350
115-mil		—	365
135-mil		—	465
Low Temperature Bend	ASTM D2136	-40°F (-40°C)	Pass
Linear Dimensional Charge, %	ASTM D1204	0.1 max	0.05 typical
Water Vapor Permeance, Perms ASTM E96 proc. B	ASTM E96	0.10 max	0.05 typical
Properties after heat aging –ASTM D3045, 56 days @ 176°F 670 hours @ 240°F	ASTM D3045		
Breaking strength, % retained		—	> 90
Elongation reinf. % retained		—	> 90
Tearing Strength, % retained		—	> 90
Weight Change, %		—	Pending
Ozone Resistance 100 pphm, 168 hours	ASTM D1149	No cracks	No cracks
Resistance to Water Absorption After 7 days immersion @ 158°F (70°C) Change in mass, max, %	ASTM D570	+3	+1.25
Resistance to Outdoor (Ultraviolet) Weathering Xenon-Arc, 17,640 kJ/m² total radiant exposure at 0.35 W/m² irradiance, 63°C black panel temp.	ASTM G155	No cracks No loss of breaking or tearing strength	No cracks No loss of breaking or tearing strength

* 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 or specification range for any particular property of this product.

800-479-6832 • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • **www.carlisle-syntec.com**

Carlisle SynTec