

VERSIFLEX™ -E KEE HP MEMBRANE



Overview

Versico's VersiFlex-E KEE HP (High Performance) membrane is manufactured using DuPont® Elvaloy® KEE HP resin modifier. KEE HP enhances the performance of PVC compounds by providing outstanding thermal stability and flexibility while extending the low- and high-temperature performance limits of standard KEE. The addition of Elvaloy KEE HP, a non-volatile resin modifier, provides enhanced heat and chemical resistance.

The physical properties of the membrane are enhanced by a tenacious polyester fabric that is encapsulated by thick KEE HP PVC-based top and bottom plies. The smooth surface of the KEE HP membrane allows a total surface fusion weld over a wide temperature range, creating a consistent, watertight, one-piece roof assembly. VersiFlex-E KEE HP is available in white, gray, and tan.

Features and Benefits

- Chemical resistance
- Energy efficiency
- Heat weldability
- Low-temperature flexibility
- Impact/puncture resistance
- Easy installation
- Solar, UV, ozone, oxidation resistance



Installation

VersiFlex-E KEE HP roof systems are fast to install, as minimal labor and few components are required. The membranes weld quickly, cleanly and consistently.

Mechanically Attached Roofing System

The mechanically attached system starts with approved insulation being fastened with a minimum of 5 fasteners per 4' by 8' board. The KEE HP reinforced membrane is then mechanically attached to the deck using HPVX or HPV-XL Fasteners and Plates. Adjoining sheets of KEE HP membrane are overlapped over the fasteners and plates and joined together with a minimum 1½-inch-wide hot-air weld.

Fully Adhered Roofing System

The fully adhered system starts with a suitable surface upon which to apply the Low-VOC PVC Bonding Adhesive. Refer to respective technical data bulletins or Versico specifications and details for complete installation information.

REVIEW CURRENT VERSICO SPECIFICATIONS AND DETAILS FOR SPECIFIC INSTALLATION REQUIREMENTS.

Precautions

1. Sunglasses that filter out ultraviolet light are strongly recommended as the white surface is highly reflective to sunlight. Roofing technicians should dress appropriately and wear sunscreen to protect skin from the sun.
2. Smooth surfaces may be slippery due to frost and ice build-up. Exercise caution during cold conditions to prevent falls.
3. 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.
4. Use proper stacking procedures to ensure sufficient stability of the materials.
5. Exercise caution when walking on wet membrane. Membranes may be slippery when wet.

A SINGLE SOURCE FOR SINGLE-PLY ROOFING

Versico, PO Box 1289, Carlisle, PA 17013
Tel: 800.992.7663 Fax: 717.960.4036 Web: www.versico.com

- Store VersiFlex-E KEE HP membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. VersiFlex-E KEE HP membrane that has been exposed to the weather or contaminated with dirt must be prepared with PVC Membrane Cleaner prior to hot-air welding.

Supplemental Approvals, Statements and Characteristics

VersiFlex-E KEE HP meets or exceeds the requirements of ASTM D4434 Standard Specification for Poly (Vinyl Chloride) Sheet Roofing. VersiFlex-E KEE HP is classified as Type III and/or Type IV as defined by ASTM D4434.

TYPICAL PROPERTIES AND CHARACTERISTICS				
Physical Property	ASTM D4434 Requirement	50-mil	60-mil	80-mil
Tolerance on nominal thickness, % ASTM D751 test method	+10, -10	±10	±10	±10
Thickness over scrim, in. (mm) ASTM D4434 optical method average of 3 areas	0.016 min (0.40)	0.024 (0.61)	0.029 (0.74)	0.036 (0.91)
Weight, lbs/ft ² (kg/m ²)	No requirement	0.33 (1.61)	0.38 (1.86)	0.51 (2.49)
Breaking strength (MD x CD), lbf/in (kN/m) ASTM D751 grab method	275 min (48)	290 x 290 (51 x 51)	320 x 300 (56 x 52)	330 x 320 (58 x 56)
Elongation break of reinforcement (MD x CD), % ASTM D751 grab method	25 min	30 x 30	30 x 30	30 x 30
Tearing strength (MD x CD), lbf (N) ASTM D751 proc. B, 8 in. x 8 in.	90 min (400)	120 x 125 (534 x 556)	120 x 125 (534 x 556)	140 x 150 (623 x 667)
Low temperature bend, ASTM D2135, no cracks 5x at -40°C	PASS	PASS (-46°C)	PASS (-46°C)	PASS (-46°C)
Linear dimensional change, % ASTM D1204, 6 hours at 176°F	±0.5 max	0.4 typ.	0.4 typ.	0.4 typ.
Ozone resistance, no cracks 7x ASTM D1149, 100pphm, 168 hrs	PASS	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D570, 166 hours at 158°F water	±3.0 max	1.25	0.87	0.89
Puncture resistance - Dynamic, J (ft-lbf) ASTM D5635	20 (14.7)	PASS	PASS	PASS
Puncture resistance - Static, lbf (N) ASTM D5602	33 (145)	PASS	PASS	PASS
Xenon-Arc resistance, no cracks/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	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	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 or specification range for any particular property of this product.

LEED® INFORMATION	
Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	White: 108

RADIATIVE PROPERTIES FOR ENERGY STAR®, COOL ROOF RATING COUNCIL (CRRC), AND LEED				
Physical Property	Test Method	White KEE HP	Tan KEE HP	Gray KEE HP
ENERGY STAR - E-903 Initial Solar Reflectance	Solar Spectrum Reflectometer	0.82	0.74	0.57
ENERGY STAR - E-903 Solar Reflectance after 3 years	Solar Spectrum Reflectometer (Uncleaned)	Pending	Pending	Pending
CRRC - Initial Solar Reflectance	ASTM C1549	0.82	0.74	0.57
CRRC - Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	Pending	Pending	Pending
CRRC - Initial Thermal Emittance	ASTM C1371	0.89	0.88	0.88
CRRC - Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	Pending	Pending	Pending
Solar Reflective Index (SRI)	ASTM E1980	102	90	67
Solar Reflective Index (SRI) SRI after 3 years	ASTM E1980	Pending	Pending	Pending

