

FleeceBACK® RL™ PVC

RapidLock Membrane



Overview

Carlisle's RapidLock (RL) Roofing System is a revolutionary membrane attachment method that provides an adhered membrane without the use of adhesives. This innovative system utilizes VELCRO® Brand Securable Solutions along with FleeceBACK RL PVC to achieve performance equal to adhered single-ply systems. RapidLock systems, in conjunction with an approved RapidLock insulation board, are VOC- and odor-free, have no temperature restrictions, and offer significant labor savings due to their simplicity and ease of installation.

FleeceBACK RL PVC membranes are manufactured using a hot-melt extrusion process for complete scrim encapsulation. The PVC is reinforced and then enhanced with RL fleece, creating a very tough, durable and versatile membrane that is ideal for re-roofing or new construction projects. FleeceBACK RL PVC sheets, available in total thicknesses of 115-mil and 135-mil, provide excellent chemical resistance to acids, restaurant oils, and greases.

FleeceBACK RL PVC utilizes heat-weldable PVC thermoplastic membrane that is designed for long-term weatherability and performance. The physical properties of the membrane are enhanced by a tenacious, weft-inserted polyester fabric that is encapsulated by thick PVC-based top and bottom plies. The smooth surface of the PVC membrane allows for a total surface fusion and permanent weld, creating a consistent, watertight, monolithic roof assembly.

Features and Benefits

- » Available in white, gray, light gray, slate gray, and tan and offered in 115- and 135-mil thicknesses
- » Roll Sizes: 115-mil = 10' x 100'; 135-mil = 10' x 75'
- » No temperature restrictions
- » Adhesive-less system saves time and labor
- » 67% fewer seams than modified bitumen systems
- » Low-volatility plasticizer
- » Wide window of weldability
- » Fleece reinforcement adds toughness, durability, and enhanced puncture resistance
- » 115-mil membrane delivers 33% greater puncture resistance and 33% greater breaking strength than 60-mil PVC
- » Greater puncture resistance than modified bitumen
- » Wind uplift ratings comparable to fully adhered single-ply systems
- » Excellent resistance to hail damage
- » No VOCs
- » No odors
- » Eligible for up to a 30-year warranty
- » White and Light Gray KEE HP are California Title 24 compliant, can contribute to LEED® (Leadership in Energy and Environmental Design) credits.

Productivity Boosting Features and Benefits:

- » Up to 80% rooftop labor savings over traditional bonding adhesives
- » No waiting for flash-off or string time
- » Up to 25% rooftop labor savings over low-rise urethanes
- » No equipment required
- » Reduces jobsite cleanup by eliminating buckets and drums



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Installation

RapidLock Roofing System

Insulation Attachment (Mechanically Fastened) - RapidLock insulation is mechanically fastened to the roof deck per Carlisle's specification.

Insulation Attachment (Adhered) – RapidLock insulation is adhered with Flexible FAST™ Adhesive to the roof deck. When adhering insulation with Flexible FAST, the adhesive is spray-applied or extruded onto the substrate and allowed to rise and foam. Once the adhesive develops string/body/gel (approximately 2 minutes depending on climate), place insulation into adhesive and walk board into place. Roll the insulation with a 150-pound segmented weighted roller to ensure full embedment.

Membrane Attachment – Prior to membrane placement, the surface of the RapidLock insulation must be cleaned of dust and other foreign matter using a fine push broom or a blower.

Option 1

Remove the RapidLock fleece release film on one half of the sheet, starting from the split in the liner at the middle of the sheet. The liner should be removed at an angle to reduce splitting or tearing.

Roll the membrane onto the substrate at an angle while avoiding wrinkles. When applying Carlisle's FleeceBACK RL PVC membrane, it is recommended to maintain a large curve (radius) on the leading edge of the membrane. This will help eliminate creases and bubbles that cannot be removed after the sheet is in place.

Broom the sheet and then roll the membrane in place using a 150-pound roller, starting from the middle of the 10'-wide sheet and working toward the outer edge.

Fold back the remaining half of the sheet and repeat the above process.

Option 2

Pull off both release liners simultaneously from underneath the membrane at a low angle.

Broom the sheet and then roll the membrane in place using a 150-pound roller, starting from the middle of the 10'-wide sheet and working toward the outer edge.

Review Carlisle specifications and details for complete installation information.

Precautions

- » Use proper stacking procedures to ensure sufficient stability.
- » Exercise caution when walking on wet membrane.
- » UV-resistant sunglasses are highly recommended when working with FleeceBACK RL PVC membranes.
- » White surfaces reflect heat and may become slippery due to frost and ice accumulation.
- » Care must be exercised when working close to a roof edge when the surrounding area is snow covered.
- » FleeceBACK RL PVC membrane rolls must be tarped and elevated to keep them dry prior to installation. If the fleece gets wet, use a wet vac system to help remove moisture from the fleece. Do not install membrane if fleece is wet.
- » FleeceBACK RL PVC membrane exposed to the weather must be prepared with Carlisle's PVC & KEE HP Membrane Cleaner prior to hot-air welding.
- » RapidLock fleece and insulation engagement is permanent once paired. Do not rapidly pull RapidLock fleece from the insulation once engaged.
- » RapidLock fleece cannot be used with two-part urethane adhesives (Flexible FAST, OlyBond).
- » RapidLock release film is recyclable in some areas – check local regulations.

For recycling information, check with your local municipality.

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Typical Properties and Characteristics

Physical Property	ASTM D4434 Requirement	115-mil	135-mil
Thickness over fleece	No requirement	60-mil	80-mil
Membrane Thickness Over Scrim , in. (mm) ASTM D4434 optical method, average of 3 areas	0.016 min (0.40)	0.027 (0.686)	0.038 (0.965)
Weight , lbs/ft ² (kg/m ²)	No requirement	0.44	0.56
Breaking strength (MD x CD) , lbf/in (kN/m) ASTM D751 grab method	200 min (890)	390 x 350 (68 x 61)	389 x 392
Elongation break of reinforcement (MD x CD) , % ASTM D751 grab method	15 min	35 x 35	35 x 35
Tearing strength (MD x CD) , lbf (N) ASTM D751 proc. B, 8 in. x 8 in.	45 min (200)	192 x 172 (854 x 765)	148 x 191
Low temperature bend , ASTM D2135, no cracks 5x at -40°C	PASS	PASS	PASS
Linear dimensional change , % ASTM D1204, 6 hours at 176°F	± 0.5 max	0.4 typ.	0.24
Water absorption resistance , mass % ASTM D570, 166 hours at 158°F water	±3.0 max	2.0	
Puncture resistance - Dynamic , J (ft-lbf) ASTM D5635	20 (14.7)	PASS	PASS
Puncture resistance - Static , lbf (N) ASTM D5602	33 (145)	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	
Properties after heat aging ASTM D3045, 56 days at 176°F			
Breaking strength, % retained	90 min	90 min	
Elongation reinf., % retained	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.

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index	White: 108, Tan: 88, Gray: 70, Light Gray: 90, Slate Gray: N/A

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

Physical Property	Test Method	White PVC	Tan PVC	Gray PVC	Light Gray PVC	Slate Gray PVC
CRRC – Initial Solar Reflectance	ASTM C1549	0.86	0.72	0.59	0.74	N/A
CRRC – Solar Reflectance after 3 years	ASTM C1549 (uncleaned)	0.63	0.60*	0.49*	0.64*	N/A
CRRC – Initial Thermal Emittance	ASTM C1371	0.89	0.87	0.89	0.88	N/A
CRRC – Thermal Emittance after 3 years	ASTM C1371 (uncleaned)	0.87	0.86*	0.86*	0.89*	N/A
Solar Reflectance Index (SRI)	ASTM E1980	108	88	0.70	0.90	N/A
Solar Reflective Index (SRI) after 3 years	ASTM E1980	75	71*	0.56*	0.77*	N/A