

# DURO-LAST® EV FLEECE 80-MIL MEMBRANE

## Advantages:

Duro-Last® EV Fleece 80-Mil (EVF80) is an excellent choice for low-slope roof projects requiring a long-lasting, energy efficient roofing membrane. The inclusion of DuPont™ Elvaloy® KEE (Ketone Ethylene Ester) provides Duro-Last EV with superior physical properties and performance characteristics. The combination of fleece and the proven performance of Duro-Last EV roofing membrane results in an ideal product for use in adhered and mechanically fastened applications over a wide variety of substrates. A complete line of custom-fabricated accessories is available for use with EVF80.

## Description:

In addition to the fleece, Duro-Last EV membrane incorporates a weft-inserted, knitted scrim within KEE-containing films to provide exceptional strength and waterproofing.

**Duro-Last EV membranes must not be used with Duro-Last, Duro-Fleece® or Duro-Tuff® membranes.**

**KEE-Containing Film** – Proprietary thermoplastic KEE-containing formulation of resins, plasticizers, stabilizers, biocides, flame retardants and U.V. absorbents.

- PVC film above weft-inserted scrim – 38 mil, nominal

**Weft-Inserted Scrim** – An 18 x 9 polyester fabric construction with weft insertion, composed of 840 x 1,000 denier threads, provides superior tear and puncture resistance. The polyester thread is treated to prevent wicking.

**Fleece** – The 5.5-ounce per square yard needle-punched polypropylene fleece provides excellent properties for adhering to, or mechanically fastening over, a wide variety of substrates. Each roll of membrane has one selvage edge where the fleece is held back 2.25 inches to provide for hot-air welding to the underlying membrane.

**Total Membrane Thickness** – 80 mil, nominal.

**Overall Thickness (with Fleece)** – 110 mil, nominal.

**Weight** – 0.53 lb. per square foot.

**Color** – Top surface: white. Bottom surface: white.

**R-Value** – 0.1 R (0.1 ft<sup>2</sup>·°F·hr/Btu).



**Packaging** – EVF80 is supplied in the roll sizes shown below. A full pallet contains 10 rolls.

## Roll Dimensions

Item Number	Dimensions	Approximate Coverage <sup>1</sup>	Approximate Weight
661491	120 in. x 65 ft.	633 sq. ft.	345 lb.
661490	60 in. x 65 ft.	308 sq. ft.	173 lb.

<sup>1</sup> Assuming 3-inch overlap.

**Overlap Line** – A line, 6 inches from one edge of the sheet, is factory-applied to the top of the sheet to assist in maintaining proper overlap between sheets.

## Seam Plate and Fastener Placement Guides –

“X”s are placed at 6-inch intervals along one edge of the sheet to assist in maintaining proper spacing between fasteners. Install fasteners so that the outside edge of the seam plate is flush with the edge of the sheet.

**“T-Lap” Patches** – A patch, with rounded corners, is required at all lap areas where 3 or more layers of membrane intersect (“T-Lap”). The minimum size of the patch is 4 x 4 inches or 4-inch diameter. Patches can be made of EV membrane of any thickness.

## Energy Efficiency:

White EVF80 is an excellent product for complying with California Title 24, LEED® and other energy efficiency programs requiring the use of a highly reflective roof membrane.

## Cool Roof Rating Council (CRRC)

	CRRC ID	Solar Reflectance		Thermal Emittance		Solar Reflective Index (SRI)	
		Initial	3-yr	Initial	3-yr	Initial	3-yr
White	0610-0011	0.86	0.71	0.89	0.88	108	87

**LEED-NC & LEED-EB Credits** – White EVF80 alone can obtain 1 credit in either U.S. Green Building Council's LEED-NC or LEED-EB programs. In combination with other design criteria, the membrane may help attain other credits.

LEED-NC Credit Category	Duro-Last Attribute
Sustainable Sites Heat Island Reduction	Solar Reflective Index (SRI) = 108

LEED-EB Credit Category	Duro-Last Attribute
Sustainable Sites Heat Island Reduction	Solar Reflective Index (SRI) = 108

#### Warranty:

The following warranties are available for projects utilizing EVF80. Contact Duro-Last for warranty details.

**Consequential damage coverage is not available for Duro-Last EV installations.**

Available Warranties				
<b>Supreme</b>	Not applicable for this product			
<b>Ultra</b>	15-Year NDL High Wind Warranty	20-Year NDL High Wind Warranty	25-Year NDL High Wind Warranty <sup>1</sup>	
<b>Basic</b>	15-Year NDL Warranty	20-Year NDL Warranty	25-Year NDL Warranty <sup>1</sup>	30-Year NDL Warranty <sup>1</sup>
<b>Residential</b>	15-Year Residential Material Limited Warranty		20-Year Residential Material Limited Warranty	

<sup>1</sup> Refer to the 25 and 30-Year Warranty Requirements for additional installation criteria.

#### Codes and Standards:

Underwriters Laboratories (US & Canada), UL Evaluation Report (ER10128), FM Approvals, State of Florida, Miami-Dade County, Texas Department of Insurance.

#### Storage:

Store rolls lengthwise on pallets. Use tarps to keep rolls dry.

#### Membrane Attachment:

**Adhered** – EVF80 may be adhered to a variety of roof decks, walls, cover boards and insulations. It may be adhered directly to an existing built-up roof (BUR) by using approved membrane adhesives. Adhesion pull tests are required prior to adhering to BUR. The tests must be performed on a 1 x 1-foot area and receive minimum values of 150 pounds per square foot. Refer to the Adhered Duro-Fleece Roofing System Specification for substrate preparation, acceptable adhesives and system requirements.

**Mechanically Fastened** – EVF80 may be mechanically fastened to a variety of roof deck and wall materials. An appropriate slip sheet, insulation or cover board may be required. Refer to the Duro-Last Roll Good Mechanically Fastened Roofing System Specification for system requirements.

**Physical Properties:**

EVF80 has been subjected to the tests required by ASTM D4434 “*Standard Specification for Poly (Vinyl Chloride) Sheet Roofing*” and has been classified as a Type III, internally reinforced sheet. The results of each test are listed below. ASTM’s Overall Thickness requirements for the membrane are plus or minus 10% (nominal) of the listed Typical Value.

Physical Property	Test Method	ASTM D4434 Requirement	Result	Typical Value
Overall Thickness	ASTM D751	$\geq 0.072$ and $\leq 0.088$ in. ( $\geq 72$ and $\leq 88$ mil)	PASS	0.080 in. (80 mil), nominal
Thickness Over Scrim	ASTM D7635	$\geq 0.016$ in.	PASS	0.038 in. (38 mil)
Breaking Strength <sup>1</sup>	ASTM D751 Grab Method	$\geq 200$ lbf./in.	PASS	655 x 436 lbf./in.
Elongation <sup>1</sup>	ASTM D751 Grab Method	$\geq 15\%$	PASS	36% x 34%
Seam Strength	ASTM D751 Grab Method	$\geq 327$ lbf. (75% of Breaking Strength.)	PASS	327 lbf.
Tear Strength <sup>1</sup>	ASTM D751 Procedure B	$\geq 45$ lbf.	PASS	56 x 108 lbf.
Low Temp. Bend	ASTM D2136	Must pass at -40° F.	PASS	PASS
Heat Aging	ASTM D3045	Conditioned for 56 days in oven maintained at 176° F.	PASS	PASS
Accelerated Weathering	ASTM G155	10,000 hours total test time. Irradiance level of 0.35 W/m <sup>2</sup> -340nm. Cycle: 102 minutes light, 18 minutes light + H <sub>2</sub> O spray, 63±2.5° C black panel, 30±5% RH	PASS	PASS
Dimensional Stability <sup>1</sup>	ASTM D1204	Conditioned for 6 hours in oven maintained at 176° F. Allowable change: $\leq 0.5\%$	PASS	0.00% x 0.00%
Water Absorption	ASTM D570	Immersed in water at 158° F for 168 hours. Allowable weight change: $\leq 3\%$	PASS	PASS
Static Puncture	ASTM D5602	$\geq 33$ lbf.	PASS	PASS
Dynamic Puncture	ASTM D5635	$\geq 14.7$ ft-lbf. (20 J)	PASS	PASS

<sup>1</sup> Typical values are shown for both machine and cross machine directions. The machine direction results are listed first.

**Additional Tests**

Fungi Resistance	ASTM G21	Pending
Moisture Vapor Transmission	ASTM E96, Proc. B, Method A	Pending

