

DURO-FLEECE PLUS[®] 60-MIL MEMBRANE

Advantages:

Duro-Last[®] Duro-Fleece[®] Plus 60-Mil (DFP60) membrane is an excellent choice for projects requiring a long lasting, energy efficient roofing membrane. The combination of fleece and the proven performance of Duro-Last roofing membrane results in an ideal product for use in adhered and mechanically attached applications over a wide variety of roof substrates. A complete line of custom prefabricated accessories is available for the DFP60 membrane.



Description:

In addition to the fleece, DFP60 membrane incorporates a weft-inserted, knitted scrim within PVC films to provide exceptional strength and waterproofing.

Duro-Fleece membranes must not be used with Duro-Last EV membranes.

PVC Film - Proprietary thermoplastic PVC formulation of resins, plasticizers, stabilizers, biocides, flame retardants, and U.V. absorbents.

- PVC film above weft-inserted scrim – 32 mil

Weft-Inserted Scrim - An 18 x 14 polyester fabric construction with weft insertion, composed of 840 x 1000 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 attaching over, a variety of substrates. Each roll of membrane has one selvage edge where the fleece is held back 3 inches to provide for hot-air welding to the underlying membrane.

Total Membrane Thickness – 60 mil, nominal.

Overall Thickness (with Fleece) – 90 mil.

Weight – 0.40 lb. per square foot.

Color – White.

R-Value – 0.1 ft²·F·hr/Btu.

Packaging – DFP60 is supplied in the roll sizes shown below. A full pallet contains ten rolls.

Roll Dimensions:

Dimensions	Estimated Coverage	Roll Weight
10 ft. x 80 ft.	780 sq. ft.	320 lb.
5 ft. x 80 ft.	380 sq. ft.	160 lb.

Energy Efficiency:

White DFP60 membrane 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)¹

	Solar Reflectance		Thermal Emittance		Solar Reflective Index (SRI)	
	Initial	3-yr	Initial	3-yr	Initial	3-yr
White	0.87	Pending	0.89	P ²	110	P ²

¹ Duro-Last's CRRC Product ID: 0610.

² 3-year aged results pending.

LEED & LEED-EB Credits - White DFP60 membrane alone can obtain 1 credit in either U.S. Green Building Council's LEED or LEED-EB programs. In combination with other design criteria the membrane may help attain many other credits.

LEED Credit Category	Duro-Last Attribute
Sustainable Sites Credit 7.2 Heat Island Effect: Roof	Solar Reflective Index SRI = 110

LEED-EB Credit Category	Duro-Last Attribute
Sustainable Sites Credit 7.2 Heat Island Effect: Roof	Solar Reflective Index SRI = 110

Warranty:

The following warranties are available for projects utilizing DFP60 membrane. Contact Duro-Last for warranty details.

Available Warranties				
Supreme	15-YR NDL	15 + 5 Material Only ²		15 + 5 ²
Ultra	15-YR Hail ¹	15-YR Hail & High Wind ¹	15-YR High Wind ¹	20-YR High Wind ¹
Basic	15-YR NDL ¹		20-YR NDL ¹	
Residential	15-YR Material Only ¹		20-YR Material Only ¹	

¹ Excludes consequential damage coverage.

² Excludes consequential damage coverage for last 5 years.

Codes and Standards:

Underwriters Laboratories (US & Canada), FM Approvals, ICC-ES (ESR-1660), Canadian Construction Materials Centre (CCMC 13695-L), 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 – DFP60 membrane 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 Duro-Fleece Membrane Adhesive or splatter-applied Duro-Grip® CR-20. Prior written approval from the Duro-Last Engineering Services Department is required prior to adhering to BUR. Refer to the Adhered Duro-Fleece Roofing System Specification for substrate preparation, acceptable adhesives and system requirements.

Mechanically Fastened – DFP60 membrane may be mechanically attached to a variety of roof deck and wall materials. An appropriate slip sheet or cover board may be required. Refer to the Roll Good Mechanically Fastened Systems Specification for system requirements.

Physical Properties:

DFP60 membrane has been subjected to the tests required by ASTM 4434 “Standard Specification for Poly (Vinyl Chloride) Sheet Roofing” and has been classified as a Type III, internally reinforced sheet with a fabric backing. The results of each test are listed below.

Physical Property	Test Method	ASTM 4434 Requirement	Result	Typical Value
Overall Thickness	ASTM D751	≥ 0.045 in.	PASS	0.060 in. (60 mil), nominal (With fleece: 90 mil)
Thickness Over Scrim	ASTM D7635	≥ 0.016 in.	PASS	0.032 in. (32 mil)
Breaking Strength ¹	ASTM D751 Grab Method	≥ 200 lbf./in.	PASS	546 x 490 lbf./in.
Elongation ¹	ASTM D751 Grab Method	≥ 15%	PASS	20% x 39%
Seam Strength	ASTM D751 Grab Method	≥ 409 lbf. (75% of Breaking Strength)	PASS	539 lbf.
Tear Strength ¹	ASTM D751 Procedure B	≥ 45 lbf.	PASS	104 x 192 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 G154 (formerly G53)	5,000 hours total test time. Irradiance level of 0.68 W/m ² -nm. Cycle: 8 hours at 145° F, 4 hours condensation at 122° F	PASS	PASS
Dimensional Stability ¹	ASTM D1204	Conditioned for 6 hours in oven maintained at 176° F. Allowable change: ≤ 0.5%	PASS	0.15% x 0.15%
Water Absorption	ASTM D570	Immersed in water at 158° F for 168 hours. Allowable weight change: ≤ 3%	PASS	2.1%
Static Puncture	ASTM D5602	≥ 33 lbf.	PASS	≥ 33 lbf.
Dynamic Puncture	ASTM 5635	≥ 14.7 ft-lbf.	PASS	≥ 14.7 ft-lbf.

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

