

# DURO-FLEECE PLUS<sup>®</sup> 50-MIL MEMBRANE

**Advantages:**

Duro-Last<sup>®</sup> Duro-Fleece<sup>®</sup> Plus 50-Mil (DFP50) 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 fastened applications over a wide variety of roof substrates. A complete line of custom-prefabricated accessories is available for the DFP50 membrane.

**Description:**

In addition to the fleece, DFP50 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 – 28 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 fastening 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** – 50 mil, nominal.

**Overall Thickness (with Fleece)** – 80 mil.

**Weight** – 0.35 lb. per square foot.

**Color** – White.

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

**Packaging** – DFP50 is supplied in the roll sizes shown below. A full pallet contains ten rolls.

**Roll Dimensions:**

Dimensions	Estimated Coverage <sup>1</sup>	Roll Weight
10 ft. x 100 ft.	975 sq. ft.	350 lb.
5 ft. x 100 ft.	475 sq. ft.	175 lb.

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



**Energy Efficiency:**

White DFP50 membrane is an excellent product for complying with California Title 24, LEED<sup>®</sup> 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
<b>White</b>	0610-0017	0.87	P <sup>1</sup>	0.90	P <sup>1</sup>	110	P <sup>1</sup>

P<sup>1</sup> Results pending.

**LEED & LEED-EB Credits** - White DFP50 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

**NSF/ANSI 347 GOLD CERTIFIED**

**Warranty:**

The following warranties are available for projects utilizing DFP50 membrane. Contact Duro-Last for warranty details.

Available Warranties				
<b>Supreme</b>	15-Year NDL Warranty	20-Year NDL Warranty – 15 Years Consequential Damages And 5 Years Material	20-Year NDL Warranty – 15 Years Consequential Damages And 5 Years Material and Labor	
<b>Ultra</b>	15-Year NDL Hail Warranty <sup>1</sup>	15-Year NDL Hail & High Wind Warranty <sup>1</sup>	15-Year NDL High Wind Warranty <sup>1</sup>	20-Year NDL High Wind Warranty <sup>1</sup>
<b>Basic</b>	15-Year NDL Warranty <sup>1</sup>		20-Year NDL Warranty <sup>1</sup>	
<b>Residential</b>	15-Year Residential Material Limited Warranty <sup>1</sup>		20-Year Residential Material Limited Warranty <sup>1</sup>	

<sup>1</sup> Excludes consequential damage coverage.

**Codes and Standards:**

Underwriters Laboratories (US & Canada), UL Evaluation Report (ER10128), FM Approvals, 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** – DFP50 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. 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** – DFP50 membrane may be mechanically fastened 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 Roofing System Specification for system requirements.

**Physical Properties:**

DFP50 membrane 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 with a fabric backing. 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	≥ 0.045 and ≤ 0.055 in. (≥ 45 and ≤ 55 mil)	PASS	0.050 in. (50 mil), nominal (With fleece: 80 mil)
Thickness Over Scrim	ASTM D7635	≥ 0.016 in.	PASS	0.028 in. (28 mil)
Breaking Strength <sup>1</sup>	ASTM D751 Grab Method	≥ 200 lbf./in.	PASS	541 x 494 lbf./in.
Elongation <sup>1</sup>	ASTM D751 Grab Method	≥ 15%	PASS	19% x 22%
Seam Strength	ASTM D751 Grab Method	≥ 405 lbf. (75% of Breaking Strength)	PASS	485 lbf.
Tear Strength <sup>1</sup>	ASTM D751 Procedure B	≥ 45 lbf.	PASS	182 x 195 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: ≤ 0.5%	PASS	0.15% x 0.25%
Water Absorption	ASTM D570	Immersed in water at 158° F for 168 hours. Allowable weight change: ≤ 3%	PASS	1.2%
Static Puncture	ASTM D5602	≥ 33 lbf.	PASS	≥ 33 lbf.
Dynamic Puncture	ASTM D5635	≥ 14.7 ft-lbf.	PASS	≥ 14.7 ft-lbf.

<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	No Sustained Growth or Discoloration
Moisture Vapor Transmission	ASTM E96, Proc. B, Method A	< 0.35 U.S. perms

