

# DURO-FLEECE® 50-MIL MEMBRANE

**Advantages:**

Duro-Last® Duro-Fleece® 50-Mil (DF50) 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-fabricated accessories is available for use with DF50.

**Description:**

In addition to the fleece, DF50 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 – 26 mil, nominal

**Weft-Inserted Scrim** – An 18 x 9 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 3.8-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 2.25 inches to provide for hot-air welding to the underlying membrane.

**Total Membrane Thickness** – 50 mil, nominal.

**Overall Thickness (with Fleece)** – 68 mil, nominal.

**Weight** – 0.33 lb. per square foot.

**Color** – White.

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

**Packaging** – DF50 is supplied in the roll sizes shown below. A full pallet contains ten rolls.

**Roll Dimensions**

Dimensions	Approximate Coverage <sup>1</sup>	Approximate Weight
120 in. x 100 ft.	975 sq. ft.	330 lb.
60 in. x 100 ft.	475 sq. ft.	165 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.

**Energy Efficiency:**

White DF50 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
<b>White</b>	0610-0010	0.87	0.67	0.89	0.89	110	81

**LEED-NC & LEED-EB Credits** – White DF50 membrane 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 many other credits.

LEED-NC Credit Category	Duro-Last Attribute
Sustainable Sites Heat Island Reduction	Solar Reflective Index (SRI) = 110

LEED-EB Credit Category	Duro-Last Attribute
Sustainable Sites Heat Island Reduction	Solar Reflective Index (SRI) = 110

**Warranty:**

The following warranties are available for projects utilizing DF50. Contact Duro-Last for warranty details.

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

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

**Codes and Standards:**

Underwriters Laboratories (US & Canada), UL Evaluation Report (ER10128), FM Approvals, Canadian Construction Materials Centre (CCMC 14011-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** – DF50 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** – DF50 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 Roll Good Mechanically Fastened Roofing System Specification for system requirements.

**Physical Properties:**

DF50 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: 68 mil)
Thickness Over Scrim	ASTM D7635	≥ 0.016 in.	PASS	0.026 in. (26 mil)
Breaking Strength <sup>1</sup>	ASTM D751 Grab Method	≥ 200 lbf./in.	PASS	500 x 344 lbf./in.
Elongation <sup>1</sup>	ASTM D751 Grab Method	≥ 15%	PASS	32% x 77%
Seam Strength	ASTM D751 Grab Method	≥ 375 lbf. (75% of Breaking Strength)	PASS	405 lbf.
Tear Strength <sup>1</sup>	ASTM D751 Procedure B	≥ 45 lbf.	PASS	67 x 160 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	0.10% x 0.10%
Water Absorption	ASTM D570	Immersed in water at 158° F for 168 hours. Allowable weight change: ≤ 3%	PASS	2.6%
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

