

OVERVIEW

StressPly IV Plus membranes are a high strength, polyester/fiberglass reinforced, rubber modified roof membrane designed to be used in torching applications. The 180-195 mil membranes not only offer high strength, but also a high percentage of quality blended Styrene-Butadiene-Styrene (SBS) rubber compound. StressPly IV Plus membranes incorporate a burn-off backer to indicate when proper heat is obtained during application.

StressPly IV Plus membranes can be used in conjunction with Garland's HPR® products as well as with conventional glass base sheets or fiberglass felt underlayment. In addition, StressPly IV Plus membranes can be used as the top ply in a two-ply flashing system. It can also be used to repair splits, cracks or other deteriorated areas of existing modified roof systems.

Superior Strength & Weatherability - The StressPly IV Plus membranes are reinforced with a high strength, polyester/fiberglass reinforced scrim. The superior strength provided by the polyester/fiberglass scrim in StressPly IV Plus membranes provide tensile strength in excess of 300 pounds per inch in the machine and cross machine direction. This translates into long-term resistance to splits and tears in the completed StressPly IV Plus roof systems. The high quality SBS rubber polymer in StressPly IV Plus offers unmatched low temperature flexibility, weathering and elastomeric properties.

Unmatched Reflectivity - The StressPly IV Plus UV Mineral membrane incorporates the unique Sunburst™ mineral, which provides long-term protection and added energy savings. The superior reflectivity of this mineral protects the StressPly IV Plus UV Mineral membrane from UV damage and decreases under roof temperatures. Sunburst mineral membranes exceed the minimum requirement for LEED SS 7.2 Heat Island Effect (Roof) with an SRI of 89 as tested by the Cool Roof Rating Council (CRRRC).

Factory Formulated Reduces Labor Expense - StressPly IV Plus Mineral and StressPly IV Plus UV Mineral are coated at the factory with reflective mineral granules. Consequently, there's no need to flood coat and gravel or aluminize the membrane's surface. Roof projects can be completed on a more timely basis. End result: substantial labor expense savings.

Security in Multi-Ply Applications - StressPly IV Plus membranes are the top component of a multi-ply system. It combines the inherent advantages and proven performance of multi-ply protection with the strength, flexibility and elongation of elastomeric systems. This unique combination minimizes dependence on perfect workmanship, contact adhesive seaming, etc.

APPLICATION

StressPly IV Plus membranes can be applied in a two-ply torch-applied modified system. Garland's HPR Torch Base Sheet is applied to the approved substrate and StressPly IV Plus membranes are solidly torch adhered to the torch base sheet.

StressPly IV Plus membranes can also be used as the torchable top layer of a modified roof system. Two plies of ASTM D 2178, Type IV or VI fiberglass felt are solidly bonded to the approved substrate. StressPly IV Plus membranes are then solidly torch adhered to these base layers.

Properties		CSA A123.23 Criteria: Type C, Grade 3	StressPly IV Plus Tested Value	
Thickness – mm (mils)		1.8 (70)	4.8 (188)	
Selvedge thickness – mm (mils)		1.8 (70)	4.6 (178)	
Mass per unit area – kg/m ² (lbs/100 ft ²)		2.2 (45)	6.1 (125)	
Back surface coating thickness (only for heat-welded sheets), min. – mm (mils)		1.0 (40)	N/A	
			Before Heat Conditioning	After Heat Conditioning
Strain energy (before and after heat conditioning), min. – kN/m (lbf/in)	At 23 ± 2°C (73.4 ± 3.6°F)	5.5 (31)	MD: 31 (177) XMD: 15 (86)	MD: 20 (113) XMD: 19 (112)
	At -18 ± 2°C (-4 ± 3.6°F)	3.0 (17)	MD: 9.7 (55) XMD: 9.5 (54)	MD: 6.7 (38) XMD: 7 (40)
Peak load (before and after heat conditioning), min. – kN/m (lbf/in)	At 23 ± 2°C (73.4 ± 3.6°F)	See Tested Value	MD: 56 (318) XMD: 53 (299)	MD: 58 (332) XMD: 57 (324)
	At -18 ± 2°C (-4 ± 3.6°F)	See Tested Value	MD: 56 (316) XMD: 63 (357)	MD: 66 (376) XMD: 61 (346)
Elongation at peak load (before and after heat conditioning), %	At 23 ± 2°C (73.4 ± 3.6°F)	See Tested Value	MD: 18% XMD: 13%	MD: 6% XMD: 6%
	At -18 ± 2°C (-4 ± 3.6°F)	See Tested Value	MD: 7% XMD: 7%	MD: 6% XMD: 6%
Ultimate elongation at 23 ± 2°C (before and after heat conditioning), %		See Tested Value	MD: 53% XMD: 33%	MD: 15% XMD: 18%
Dimensional stability, max., %		0.5%	0.0%	
Low temperature flexibility (before and after heat conditioning), max. – °C (°F)		-18 (-0.4)	MD: Pass @ -40 (-40) XMD: Pass @ -40 (-40)	MD: Pass @ -18 (-0.4) XMD: Pass @ -18 (-0.4)
Low temperature flexibility after UV weathering (Grades 1 and 2 only), max. – °C (°F)		-12 (10)	MD: N/A XMD: N/A	MD: N/A XMD: N/A
Compound stability, min. – °C (°F)		91 (195)	Pass @ 91 (195)	
Resistance to puncture		Pass	Pass	
Granule embedment (Grade 1 only), max. – g (oz)		N/A	N/A	
Moisture content, max., % *		N/A	N/A	

* Applicable only for APP-modified membranes



This product meets the requirements of CSA 123.23.

For more information, visit us at: www.garlandco.com

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Tests verified by independent laboratories. Actual roof performance specifications will vary depending on test speed and temperature. Data reflects samples randomly collected. A ± 10% variation may be experienced. The above data supersedes all previously published information. Consult your local Garland Representative or Garland Corporate Office for more information.

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Properties		CSA A123.23 Criteria: Type C, Grade 3	StressPly IV Plus Mineral Tested Value	
Thickness – mm (mils)		2.8 (110)	4.9 (193)	
Selvedge thickness – mm (mils)		1.8 (70)	4.3 (170)	
Mass per unit area – kg/m ² (lbs/100 ft ²)		2.9 (60)	6.6 (135)	
Back surface coating thickness (only for heat-welded sheets), min. – mm (mils)		1.0 (40)	N/A	
			Before Heat Conditioning	After Heat Conditioning
Strain energy (before and after heat conditioning), min. – kN/m (lb/in)	At 23 ± 2°C (73.4 ± 3.6°F)	5.5 (31)	MD: 22 (125) XMD: 13 (71)	MD: 20 (113) XMD: 20 (112)
	At -18 ± 2°C (-4 ± 3.6°F)	3.0 (17)	MD: 10 (55) XMD: 10 (54)	MD: 6 (38) XMD: 7 (40)
Peak load (before and after heat conditioning), min. – kN/m (lb/in)	At 23 ± 2°C (73.4 ± 3.6°F)	See Tested Value	MD: 66 (372) XMD: 55 (307)	MD: 59 (332) XMD: 57 (324)
	At -18 ± 2°C (-4 ± 3.6°F)	See Tested Value	MD: 56 (316) XMD: 63 (357)	MD: 66 (376) XMD: 61 (346)
Elongation at peak load (before and after heat conditioning), %	At 23 ± 2°C (73.4 ± 3.6°F)	See Tested Value	MD: 12% XMD: 10%	MD: 6% XMD: 6%
	At -18 ± 2°C (-4 ± 3.6°F)	See Tested Value	MD: 7% XMD: 7%	MD: 6% XMD: 6%
Ultimate elongation at 23 ± 2°C (before and after heat conditioning), %		See Tested Value	MD: 31% XMD: 30%	MD: 15% XMD: 18%
Dimensional stability, max., %		0.5%	0.0%	
Low temperature flexibility (before and after heat conditioning), max. – °C (°F)		-18 (-0.4)	MD: Pass @ -40 (-40) XMD: Pass @ -40 (-40)	MD: Pass @ -18 (-0.4) XMD: Pass @ -18 (-0.4)
Low temperature flexibility after UV weathering (Grades 1 and 2 only), max. – °C (°F)		-12 (10)	MD: N/A XMD: N/A	MD: Pass @ -12 (10) XMD: Pass @ -12 (10)
Compound stability, min. – °C (°F)		91 (195)	Pass @ 91 (195)	
Resistance to puncture		Pass	Pass	
Granule embedment (Grade 1 only), max. – g (oz)		2.0 (0.07)	1.12 (0.04)	
Moisture content, max., % *		N/A	N/A	

* Applicable only for APP-modified membranes



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