

OVERVIEW

StressPly Plus membranes feature a high strength, mineral surfaced, UV resistant, rubber modified roof membrane designed for use as the waterproofing and reinforcement layer of a modified built-up roofing system. The sheets consist of a fiberglass/polyester reinforcement sandwiched by a unique Styrene-Butadiene-Styrene (SBS) in a high penetration index asphalt mixture containing post-consumer recycled rubber from scrap tires.

StressPly Plus membranes are designed for use as the top component in a roofing system where fire retardancy is required. It can also be used in conjunction with Garland's HPR® products as well as with conventional glass base sheets or fiberglass roofing felts. In addition, StressPly Plus membranes can be used as the top ply in a two-ply flashing system. It can also be used to repair splits, cracks, and other deteriorated areas in existing asphalt based roofing systems. Specifications are available for either hot or cold applied systems.

Environmentally Friendly – StressPly Plus membranes utilize post-consumer scrap from waste tires. With absolutely no sacrifice in quality, StressPly Plus membranes maintain Garland's reputation as a manufacturer of high performance roofing systems while benefitting the environment.

Superior Strength – StressPly Plus membranes are reinforced with a fiberglass/polyester scrim that provides tensile strength in excess of 300 pounds per inch in the machine and cross machine direction. The superior strength provided by the fiberglass/polyester scrim resists the movement created by today's modern buildings. This translates to long-term resistance to splits and tears in the roof system.

Factory Formulation Reduces Labor Expense – StressPly Plus FR Mineral is coated 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. The end result is substantial savings in labor expense.

Superior Fire Resistance – StressPly Plus FR Mineral contains a fire retardant that is added to the compound during the manufacturing process. As a result, it will maintain its fire rating for the life of the membrane. StressPly Plus FR Mineral has a Class A fire rating over a combustible roof deck.

APPLICATION

Hot-Applied

StressPly Plus membranes can be used with ASTM D 312, Type III or IV asphalt, Garland's HPR All-Temp Asphalt or modified asphalt. One or two plies of ASTM D 2178, Type IV or VI fiberglass felt are solidly bonded to the approved substrate. The StressPly Plus membrane is then solidly adhered to these base layers with mopping asphalt.

Cold-Applied

StressPly Plus membranes can also be applied in Garland's cold applied Weatherking® or Green-Lock® membrane adhesive. One or two layers of heavy duty Garland approved ASTM D 4601, Type II base sheets are applied in Weatherking or Green-Lock membrane adhesive to the approved substrate. The StressPly Plus membrane is then adhered to these base layers with Weatherking or Green-Lock membrane adhesive.

Properties		CSA A123.23 Criteria: Type C, Grade 3	StressPly Plus Tested Value	
Thickness – mm (mils)		1.8 (70)	3.1 (119)	
Selvedge thickness – mm (mils)		1.8 (70)	3.2 (125)	
Mass per unit area – kg/m ² (lbs/100 ft ²)		2.2 (45)	3.6 (73)	
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: 18 (100) XMD: 11 (61)	MD: 20 (113) XMD: 20 (112)
	At -18 ± 2°C (-4 ± 3.6°F)	3.0 (17)	MD: 10 (55) XMD: 10 (54)	MD: 7 (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: 63 (355) XMD: 53 (296)	MD: 59 (332) XMD: 58 (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: 13% XMD: 11%	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: 19% XMD: 17%	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 @ -34 (-30) XMD: Pass @ -34 (-30)	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 1	StressPly Plus FR Mineral Tested Value	
Thickness – mm (mils)		2.8 (110)	3.9 (154)	
Selvedge thickness – mm (mils)		1.8 (70)	2.9 (111)	
Mass per unit area – kg/m ² (lbs/100 ft ²)		2.9 (60)	5.2 (107)	
Back surface coating thickness (only for heat-welded sheets), min. – mm (mils)		N/A	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: 17 (94) XMD: 16 (90)	MD: 8 (46) XMD: 9 (52)
	At -18 ± 2°C (-4 ± 3.6°F)	3.0 (17)	MD: 9 (52) XMD: 4 (23)	MD: 5 (30) XMD: 5 (30)
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: 55 (310) XMD: 45 (253)	MD: 54 (304) XMD: 47 (263)
	At -18 ± 2°C (-4 ± 3.6°F)	See Tested Value	MD: 58 (330) XMD: 45 (257)	MD: 51 (289) XMD: 50 (285)
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: 9% XMD: 5%	MD: 6% XMD: 7%
Ultimate elongation at 23 ± 2°C (before and after heat conditioning), %		See Tested Value	MD: 18% XMD: 37%	MD: 14% XMD: 27%
Dimensional stability, max., %		0.5%	0.0%	
Low temperature flexibility (before and after heat conditioning), max. – °C (°F)		-18 (-0.4)	MD: Pass @ -34 (-30) XMD: Pass @ -34 (-30)	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)	1.9 (0.07)	
Moisture content, max., % *		N/A	N/A	

* Applicable only for APP-modified membranes



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