



NEMO|etc.

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ENGINEER

TEST

CONSULT

**ROOF SYSTEM ASSESSMENT REPORT
DYNAMIC UPLIFT RESISTANCE PER CSA A123.21**

CUSTOMER:	The Garland Company	TEST DATES:	2023-11-07
DOCUMENT NO.	GRL-PARS-2	PUBLICATION DATE:	2025-06-26
TEST PANEL NO.	GRL-D9	REVISION NO.	2
SYSTEM TYPE:	B-1	REEVALUATION DATE:	2028-06-25

PARTIALLY ADHERED ROOFING SYSTEM (PARS) SUMMARY

ROOFING SYSTEM SUMMARY:

Cap Ply:	SBS modified bitumen, cold-adhesive applied or hot-SEBS-modified adhesive applied
Ply:	(Optional) SBS modified bitumen, cold-adhesive applied or hot-SEBS-modified adhesive applied
Base Ply:	SBS modified bitumen, cold-adhesive applied or hot-SEBS-modified adhesive applied
Coverboard:	Gypsum-based board, adhesive-applied
Insulation:	Polyisocyanurate foam insulation board, mechanically attached
Vapor Barrier:	Any approved type, loose-laid, adhered or mechanically fixed
Thermal Barrier:	(Optional) Any approved type, loose-laid, adhered or mechanically fixed
Deck:	Steel

DYNAMIC UPLIFT RESISTANCE PER CSA A123.21:

Sustained Test Value		Design Value CSA A123.21:20 (Test Value x 0.65)		Design Value CSA A123.21:14 (Test Value ÷ 1.5)	
kPa	psf	kPa	psf	kPa	psf
-5,7	-120	-3,7	-78	-3,8	-80

PRODUCTS / APPLICATION:

Surfacing: (Optional)	Description:	Surfacing applied for fire classification performance and/or reflectivity.
	Application:	Cold-applied, hot-applied or fluid-applied
	Eligible Products:	Any Garland hot-applied or cold-applied flood coat and gravel or aggregate stone, or Garland roof coating approved for use with the cap ply membrane, applied in accordance with Garland requirements.
Cap Ply:	Description:	Membrane composed of fiberglass or fiberglass/polyester composite reinforcement coated with SBS modified bitumen
	Application:	Green-Lock Plus Membrane Adhesive at 2 to 2.5 gal/square or Garlastic KM Plus at 20-40 lbs/square
	Eligible Products:	StressPly, StressPly FR Mineral, StressPly EUV, StressPly EUV FR Mineral, StressPly Legacy, StressPly Legacy FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly Max, StressPly Max FR Mineral, VersiPly 80 or VersiPly Mineral, OptiMax or OptiMax FR Mineral

ROOF SYSTEM ASSESSMENT REPORT, DYNAMIC UPLIFT RESISTANCE PER CSA A123.21

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PRODUCTS / APPLICATION:			
Ply: <i>(Optional)</i>	Description:	Membrane composed of fiberglass or fiberglass/polyester composite reinforcement coated with SBS modified bitumen	
	Application:	Green-Lock Plus Membrane Adhesive at 2 to 2.5 gal/square or Garlastic KM Plus at 20-40 lbs/square	
	Eligible Products:	FlexBase 80, FlexBase Plus 80, FlexBase E 80, StressBase 80, StressBase 80 Plus or StressBase 120	
Base Ply:	Description:	Membrane composed of fiberglass or fiberglass/polyester composite reinforcement coated with SBS modified bitumen	
	Application:	Green-Lock Plus Membrane Adhesive at 2 to 2.5 gal/square or Garlastic KM Plus at 20-40 lbs/square	
	Eligible Products:	FlexBase 80, FlexBase Plus 80, FlexBase E 80, StressBase 80, StressBase 80 Plus or StressBase 120	
Coverboard:	Description:	Gypsum-based board	
	Application:	Adhesive-applied	
	Eligible Products:	By USG Corporation	Product SECUROCK Gypsum-Fiber Roof Board
Coverboard Adhesive:	Description:	Polyurethane based insulation adhesive	
	Application Rate:	Continuous ribbons, 152-mm (6-inch) on-center	
	Eligible Products:	By The Garland Company	Product Insul-Lock HR
Insulation:	Description:	Polyisocyanurate foam insulation board laminated on both sides with fiber reinforced felt	
	Dimensions:	Min. 1.2 x 2.4-m (4 x 8 ft) or 1.2 x 1.2-m (4 x 4 ft) x thickness noted below	
	Application:	Optional base layer(s) loose laid, top layer mechanically fixed	
	Eligible Products:	By Atlas Roofing Corp Hunter Panels Johns Manville	Products ACFoam II H-Shield ENRGY 3
Insulation Fasteners:	Description:	Corrosion resistant screw-type roofing fasteners with steel stress plates	
	Fastening Method:	Fasteners installed through stress plates to engage the top flanges of the steel deck	
	Fastener Density:	1 per 1.3 ft ² (24 parts per 4x8 ft board or 12 parts per 4x4 ft board)	
	Eligible Products:	By Altenloh, Brink & Co US OMG, Inc. SFS Group USA	

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PRODUCTS / APPLICATION:		
Vapour Barrier:	Description:	Min. 6-mil polyethylene or other vapor barrier
	Application:	Loose-laid, adhered or mechanically-attached
	Eligible Products:	Any approved product acceptable to Garland and the Authority Having Jurisdiction
Thermal Barrier: <i>(Optional)</i>	Description:	Cement-based, gypsum-based or mineral-wool board
	Application:	Loose-laid, adhered or mechanically-attached
	Eligible Products:	Any approved product acceptable to Garland and the Authority Having Jurisdiction
Deck:	As-Tested:	Steel roof deck

NOTES:	
Test Value and Design Value:	<p>The "Test Value" noted herein reflects the ultimate passing test pressure recorded during testing. The "Design Value" herein reflects the "Test Value" multiplied by a resistance factor of 0.65, or divided by a safety factor of 1.5.</p> <p>The "Design Value" should meet or exceed the design pressure requirements of the project, as determined in accordance with the current National Building Code of Canada (NBC) requirements.</p>
Equivalence of Other Products:	This report applies only to the products listed as "Eligible Products" herein.
Optional Components:	Components listed herein as "optional" may be removed from the roof system design with no adverse effect on system dynamic wind uplift performance.
As-Tested Deck:	Testing utilized 22 ga., Type B (6-inch deck module) steel deck meeting ASTM A653, A792, A1008 or CSSBI 10M standard and having a yield strength of 275 MPa (40-ksi). Alternate deck displaying equivalent strength and fastener-holding capacity (withdrawal resistance) may be specified at the discretion of the Designer of Record to the satisfaction of the Authority Having Jurisdiction.
Fastener Point-Load:	<p>The insulation fastener point-loads resisted during this test are:</p> <ul style="list-style-type: none"> • Test Value: 712 N (160 lbf) • Design Value: 461 N (104 lbf)

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RSAR SCOPE

Roof System Assessment Reports (RSAR) constitute a summary of allowable products and interfaces used in low-slope roof assemblies based testing in accordance with CSA A123.21 at our ISO/IEC 17025 accredited laboratory.

While RSAR's are reviewed and renewed each 3-years based primarily on report holder declaration, these are not Certification listings, and are not intended to state or imply ongoing quality control / surveillance activities by NEMO at the report holder's facilities.

NEMO ETC, LLC is not, in any way, the Designer of Record for any project on which these RSAR's, or previous versions thereof, is/was used for permitting or design guidance. RSAR's are not to be construed as representing any attributes not specifically listed, nor to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by NEMO ETC, LLC, express or implied, as to any finding or other matter in these RSAR's, or as to any product covered by the RSAR's.

NEMO ETC CREDENTIALS

TYPE	ENTITY	REFERENCE
ISO/IEC 17025 Accreditation	International Accreditation Service (IAS)	TL-689
TAS 301 Certification	Miami-Dade	21-0409.01
Third Party Test Data Program	UL, LLC	DA2862
Test Lab Listing	Roofing Contractors Association of British Columbia	RCABC Labs

REPORT HISTORY

DATE	EVENT	NOTES	AUTHORIZED BY:
2022-05-09	DRAFT 1	For client review	RN
2022-05-11	FINAL	After client review	RN
2023-10-25	DRAFT REV1	Add StressPly Legacy options; for client review	RN
2023-11-06	DRAFT2 REV1	Add Garlastic KM Plus; for client review	RN
2023-11-07	REV 1	After client review	RN
2025-06-26	REV 2	3-year re-examination	RN

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