



NEMO|etc.

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ENGINEER

TEST

CONSULT

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

CUSTOMER:	Amrize Building Envelope LLC (Duro-Last)	TEST DATE:	2019-06-04
DOCUMENT NO.	DL-MARS-13	PUBLICATION DATE:	2025-07-11
TEST PANEL NO.	DL-D1	REVISION NO.	4
SYSTEM TYPE:	C-2	REEVALUATION DATE:	2028-07-10

MECHANICALLY ATTACHED ROOFING SYSTEM (MARS) SUMMARY

ROOFING SYSTEM SUMMARY:

Roof Cover:	PVC or KEE/PVC co-polymer single ply, induction welded
Insulation (top):	Polyisocyanurate foam, gypsum-based or cement-based board
Insulation (base):	Polyisocyanurate foam or polystyrene board, loose-laid
Vapor Barrier:	(Optional) Proprietary extruded polyethylene film
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
-3,4	-70	-2,2	-46	-2,2	-47


PRODUCTS / APPLICATION:

Roof Cover:	Description:	Membrane composed of polyester reinforcement coated with PVC or KEE/PVC co-polymer compound			
	Application:	Induction welded			
	Eligible Products:	Duro-Last (min. nominal 40-mil), Duro-Last X (min. nominal 80-mil), Duro-Last EV (min. nominal 50-mil) or Duro-Tuff (min. nominal 50-mil)			
Insulation (top):	Description:	Polyisocyanurate foam, gypsum-based or cement-based board			
	Application:	Mechanically fixed			
	Eligible Products:	By	Product		Min. Thickness
		Amrize	Duro-Guard ISO II-A, Duro-Guard ISO II-E2, Duro-Guard ISO II-H, Duro-Guard ISO III-A, Duro-Guard ISO III-E2 or Duro-Guard ISO III-H		25-mm (1-inch)
		Georgia-Pacific	DensDeck Prime, DensDeck StormX Prime		13-mm (0.5-inch)
USG		SECUROCK Gypsum-Fiber Roof Board			
National Gypsum	DEXcell Cement Roof Board		11-mm (7/16-inch)		

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

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PRODUCTS/APPLICATION (CONTINUED):					
Insulation (top) Fasteners:	Description:	Corrosion resistant screw-type roofing fasteners with steel stress plates coated with proprietary coating			
	Fastening Method:	Fasteners installed through stress plates to engage the top flanges of the steel deck			
	Fastening Rate:	1 part per 0.37 m ² (4 ft ²) 0.61 x 0.61 m (2 x 2 ft) staggered grid			
	Eligible Products:	By	Fasteners		Plates
		Amrize	Duro-Last #15 Extra Heavy Duty Fastener		Duro-Bond ISO WELD 1302-1, Duro-Bond Plate 1302 or Duro-Bond PVC IW Plate
Altenloh, Brinck & Co.		Trufast #15 EHD Fastener	Trufast PVC IW Plate		
OMG		OMG XHD	RhinoBond Insulation Plate-PVC		
SFS Group	DF-#15-PH3	isoweld F1-P-6.8-PVC Plate			
Insulation (base):	Description:	Polyisocyanurate foam or polystyrene board			
	Application:	One or more layer(s), loose-laid with staggered joints			
	Eligible Products:	By	Product	Min. Thickness	
		Amrize	Duro-Guard ISO II-A, Duro-Guard ISO II-E2, Duro-Guard ISO II-H, Duro-Guard ISO III-A, Duro-Guard ISO III-E2 or Duro-Guard ISO III-H	25-mm (1-inch)	
		Beaver Plastics, Ltd.	Terrafoam® EPS Rigid Insulation		
		Insulfoam, LLC	R-TECH®		
		Perma R Products, Inc.	PolyPro		
Plasti-Fab, Ltd.	PlastiSpan				
Vapour Barrier: (Optional)	Description:	extruded polyethylene film			
	Application:	Loose-laid with taped joints			
	Eligible Products:	Duro-Blue			
Thermal Barrier: (Optional)	Description:	Cement-based, gypsum-based or mineral-wool board			
	Application:	Loose-laid, adhered or mechanically-fixed			
	Eligible Products:	Any approved product acceptable to the named customer and the Authority Having Jurisdiction			
Deck:	Tested Product:	Steel roof deck			

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

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NOTES:			
Test Value and Design Value:	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 (same as "Test Value" divided by a safety factor of 1.5) 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.		
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-Loads:	Point-Load		
	Sustained Test Value		Design Value
	N	lbf	N
	1246	280	810
		lbf	182

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:
2021-01-11	FINAL	None	RN
2021-04-22	REV1	Additional base insulation options; add Duro-Last X	RN
2021-09-15	REV2	Additional top layer insulation options	RN
2022-07-12	REV3	Re-Validation	RN
2025-07-10	REV4	Re-Validation, reformat, additional insulation options	RN

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END OF REPORT