



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:	2017-06-30
DOCUMENT NO.	DL-MARS-11	PUBLICATION DATE:	2025-07-10
TEST PANEL NO.	DRL-D1E+DRL-D1D	REVISION NO.	2
SYSTEM TYPE:	D-1	REEVALUATION DATE:	2028-07-09

MECHANICALLY ATTACHED ROOFING SYSTEM (MARS) SUMMARY

ROOFING SYSTEM SUMMARY:

Roof Cover:	PVC single ply, mechanically fixed, in-lap
Insulation (top):	Polyisocyanurate foam board, mechanically fixed
Insulation (base):	(Optional – depending on thickness of top layer) Polyisocyanurate foam board, loose-laid
Vapor Barrier:	(Optional) Proprietary extruded polyethylene film, loose-laid or SBS modified bitumen with tri-laminated woven polyethylene film surface, self-adhering
Deck:	Structural concrete

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
-3,8	-80	-2,5	-52	-2,6	-53

PRODUCTS / APPLICATION:

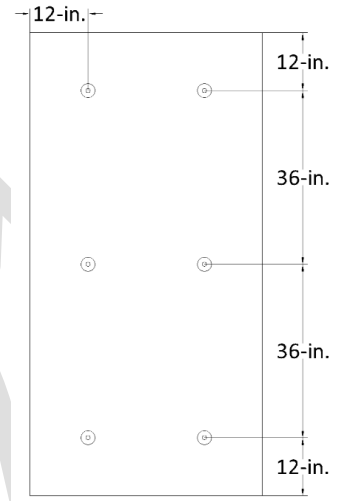
Roof Cover:	Description:	Membrane composed of polyester reinforcement coated with PVC compound			
	Application:	Mechanically fixed			
	Eligible Products:	Duro-Tuff (min. nominal 50-mil)			
Roof Cover Fasteners:	Description:	Corrosion resistant screw-type roofing fasteners with steel stress plates			
	Fixing Method:	Parts spaced max. 305-mm (12-inch) o.c. within the min. 152-mm (6-inch) wide side laps, spaced max. 1.4-m (54-inch) o.c. Side laps sealed with 1.5-inch heat weld.			
	Fixing Density:	1 part per 0.42 m ² (4.5 ft ²)			
	Eligible Products:	Fasteners		Plates	
		Duro-Last Concrete Screws		Duro-Last Poly-Plates or Duro-Last Cleat Plates	
Insulation (top):	Description:	Polyisocyanurate foam board			
	Application:	Mechanically fixed			
	Eligible Products:	Product			Min. Thickness (Top Layer)
		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)

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PRODUCTS/APPLICATION (CONTINUED):			
Insulation Fasteners:	Description:	Corrosion resistant screw-type roofing fasteners with steel stress plates	
	Fixing Method:	Fasteners installed through stress plates, positioned to engage the top flange of the steel deck	
	Fixing Rate:	1 part per 0.49 m ² (5.3 ft ²) 6 parts per 1220 x 2438 (48 x 96-inch) board	
	Eligible Products:	Fasteners	Plates
		Duro-Last Concrete Screws	Duro-Last 3-inch Metal Plate
Insulation (base): <i>(Optional if top layer min. 1.5-inch thick)</i>	Description:	Polyisocyanurate foam board	
	Application:	One or more layer(s), loose-laid with staggered joints	
	Eligible Products:	Product	Min. Thickness
		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)
Vapour Barrier: <i>(Optional)</i>	Description:	extruded polyethylene film or SBS modified bitumen with tri-laminated woven polyethylene film surface	
	Application:	Loose-laid with taped joints or Self-adhering	
	Eligible Products:	Duro-Blue or Duro-Last Vapor Barrier	
Deck:	Tested Product:	Min. 2,500 psi structural concrete	



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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 simulated 2,500 psi structural concrete deck. 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:	Roof Cover Point-Load				Insulation Point-Load			
	Sustained Test Value		Design Value		Sustained Test Value		Design Value	
	N	lbf	N	lbf	N	lbf	N	lbf
	1601	360	1041	234	1897	426	1233	277

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
2022-07-12	REV1	Re-Validation	RN
2025-07-10	REV2	Re-Validation, reformat, add insulation options	RN

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END OF REPORT