



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:	2023-02-13
DOCUMENT NO.	DL-MARS-17	PUBLICATION DATE:	2025-07-10
TEST PANEL NO.	DL-D4	REVISION NO.	1
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
Coverboard:	(Optional) Gypsum- or cement-based board, mechanically fixed
Insulation:	Polyisocyanurate foam board, loose-laid or mechanically fixed
Vapor Barrier:	Proprietary extruded polyethylene film
Thermal Barrier:	(Optional) Gypsum-, cement- or mineral-wool-based board, 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
-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-Last X (min. nominal 50-mil)			
Roof Cover Fasteners:	Description:	Corrosion resistant screw-type roofing fasteners with steel stress plates			
	Fixing Method:	Parts spaced max. 152-mm (6-inch) o.c. within the min. 152-mm (6-inch) wide side laps, spaced max. 1.4-m (54-inch) o.c. Laps sealed with min. 38-mm (1.5-inch) heat weld.			
	Fixing Density:	1 part per 0.21 m ² (2.25 ft ²)			
	Eligible Products:	Fasteners		Plates	
		Duro-Last #15 Extra Heavy Duty Fastener		Duro-Last Cleat Plates	
Coverboard: (Optional)	Description:	Gypsum- or cement-based board			
	Application:	Mechanically fixed			
	Eligible Products:	By	Product		Min. Thickness
		Georgia-Pacific Gypsum	DensDeck Prime		13-mm (0.5-inch)
United States Gypsum		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:	Description:	Polyisocyanurate foam board					
	Application:	One or more layer(s), loose-laid or, if no coverboard installed, top layer mechanically fixed					
	Eligible Products:	<table border="1"> <thead> <tr> <th>Product</th> <th>Min. Thickness (Top Layer if no coverboard)</th> </tr> </thead> <tbody> <tr> <td>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</td> <td>38-mm (1.5-inch)</td> </tr> </tbody> </table>	Product	Min. Thickness (Top Layer if no coverboard)	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	38-mm (1.5-inch)	
Product	Min. Thickness (Top Layer if no coverboard)						
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	38-mm (1.5-inch)						
Coverboard or 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:	<table border="1"> <thead> <tr> <th>Fasteners</th> <th>Plates</th> </tr> </thead> <tbody> <tr> <td>Duro-Last #14 Heavy Duty Fastener</td> <td>Duro-Last 3-inch Metal Plate</td> </tr> </tbody> </table>		Fasteners	Plates	Duro-Last #14 Heavy Duty Fastener	Duro-Last 3-inch Metal Plate
	Fasteners	Plates					
Duro-Last #14 Heavy Duty Fastener	Duro-Last 3-inch Metal Plate						
Vapour Barrier:	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:	Roof Cover Point-Load				Coverboard or Insulation Point-Load			
	Sustained Test Value		Design Value		Sustained Test Value		Design Value	
	N	lbf	N	lbf	N	lbf	N	lbf
	801	180	520	117	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:
2023-03-07	DRAFT1	For customer review	RN
2023-03-09	FINAL	After customer review	RN
2025-07-10	REV1	Re-Validation, reformat, add insulation options	RN

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END OF REPORT