

1/2" WALL PANELS

Innovation MgO 1/2" Wall Panels offer the design and construction industry an innovative sheathing panel that outperforms wood-based, gypsum-based, and Portland cement panels on technical performance and overall value. Comprised of a proprietary magnesium oxide (MgO) cement, Innovation MgO Wall Panels are naturally fire resistant, provide industry-leading flexural strength and dimensional stability, and provide high durability as they withstand weather conditions better than the alternatives.

Innovation MgO 1/2" Wall Panels are approved for exterior and interior use in all building types I, II, III, IV, & V and are easily installed using traditional tools and methods. One panel can be used in a multitude of exterior and interior wall applications and attaches easily to both metal and wood studs, reducing hassle, and saving both time and money.



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Physical Properties						
Material Composition	Magnesium Oxychloride (MOC) Cement		Thickness		Nominal 1/2" (12mm)	
Weight (lbs.) (sf)	± 90 lbs (2.8)		Thickness Deviation (ASTM C1185)		< ± 1/16 in. (1.6mm)	
Available Sizes	Nominal 48 in. (1220mm) x 96 in. (2440mm) x 1/2 in. (~12mm)		Length, Width, and Diagonal Deviation (ASTM C1185)		< ± 1/8 in. (3.2mm)	
Density	≥ 1.09 g/cm ³		Unprotected Exposure		180 days	
Test Name	Test Method		Results		More Info / Minimum Acceptance Criteria	
Code Acceptance						
Building Types	2018 and 2021 IBC and IRC; 2023 FBC; 2022 CBC and CRC; 2023 LABC and LARC		All Building Types (I, II, III, IV, V)		ESR-5418	
Code Evaluations & Additional Listings	ASTM E84: Surface Burning Characteristics of Building Materials ASTM E119: Fire Tests of Building Construction and Materials ASTM E2768: Extended Duration Surface Burning Characteristics of Building Materials AC 386: Acceptance Criteria for Fiber-Reinforced Magnesium Oxide-Based Sheets				ESL-1596 ESL-1610 ESL-1632 ESR-5418	
Fire & Thermal Resistance Properties						
Flame and Smoke Development	ASTM E84 ASTM E2768		Flame Spread ≤ 10; Smoke Developed ≤ 25 PASS		ESL-1596	
Combustibility	ASTM E136-19 Method A		PASS, Noncombustible		ESR-5418	
Fire-Rated Wall Assemblies	ASTM E119 CAN/ULC-S101		1 & 2-Hour - See ESL-1610 (US) 1 & 2-Hour - See ESL-1632 (Canada)		ESL-1610 ESL-1632	
Structural Properties						
Allowable Stud Spacing			12 in. / 16 in. / 24 in. OC		Test Results at 24 in. OC	
Compression Indentation	ASTM D2394		0.004 in.		Deformation at 1250 psi / Requirement to be less than 0.05 in.	
Flexural Strength (Machine / Cross Direction)	ASTM C1185		Dry: 2,855 MD / 3,410 XD Wet: 2,980 MD / 3,049 XD		580 psi (4000 kPa) min average acceptance for both wet and dry	
Humidified Deflection	ASTM C473		1/8 in.		48 hours at 90F and 90% RH / Required to be less than 1.25 in.	
Falling Ball Impact	ASTM D1037		No damage to top or bottom from a 12" drop			
Uniform Static Air Pressure	TAS 202-94		28.5 psf (L/360); 38.0 psf (L/240)		Max Wall Design Pressures	
Cyclic Air Pressure	TAS 203-94		28.5 psf (L/360); 38.0 psf (L/240)		Max Wall Design Pressures	
Allowable Transverse Wind Loads on Wood Studs	Nominal Panel Thickness	Maximum Support Spacing	Fastener Type	Fastener On-Center Spacing (Perimeter/Field)	Allowable Wind Load Positive	Allowable Wind Load Negative
	1/2 in.	16 in.	0.113 in. x 2 in. galvanized ring shank nails	4 in. / 6 in.	80 psf	42 psf
For SI 1 inch = 25.4 mm; 1 psf = 47.88 Pa						
Fastening Requirements & Allowable Shear Capacity on Wood Studs	Nominal Panel Thickness	Fastener Specifications	Panel Edge Distance	On-Center Spacing (Perimeter/Field)	Wall Height	Allowable Shear Capacity
	1/2 in.	0.113 in. x 2 in. galvanized ring shank nails	3/8 in.	4 in. / 6 in.	8 ft.	207 plf
For SI 1 inch = 25.4 mm; 1 plf = 14.6 N/m						

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Structural Properties (continued)

Sheathing Span Deflection Criteria (ASTM E72)			Transverse Load - Positive	Transverse Load - Negative
	Limit	Deflection	Average Pressure	Average Pressure
	L/90	1.028 in.	112 psf	105 psf
L/120	0.771 in.	85 psf	81 psf	
L/180	0.514 in.	59 psf	59 psf	
L/240	0.385 in.	46 psf	47 psf	
L/360	0.257 in.	32 psf	34 psf	
L/480	0.193 in.	25 psf	27 psf	
L/600	0.154 in.	21 psf	23 psf	

Fastener & Adhesion Properties

Dry-Set Cement Shear Bond Strength	ANSI A118.1/A118.4	86 psi	Min shear bond strength at 7-day curing of 50 psi
Latex Cement Shear Bond Strength	ANSI A118.1/A118.4	307 psi	Min shear bond strength at 7-day curing of 50 psi
Fastener Withdrawal	ASTM D1037	> 275 lbs. (max force)	#10-13 Pancake Head Screw
Nail Head Pull-Through	ASTM D1037	618 lbf	0.121 x 3" Roofing Nail - Resistance of 90 lbf

Moisture Properties

Moisture Absorption	ASTM C1185	≤ 20%	48 Hour Submersion
Moisture Content	ASTM D4442	≤ 6.4	
Water Vapor Permeability	ASTM E96 Water Method	11.5 perms	
Moisture Movement Test	ASTM C1185	0.06% Machine Direction 0.11% Cross Direction	Increase of chamber from 30% Relative Humidity to 90% measured in both machine and cross direction