

M4-EXTERIOR SHEATHING

For the High Performance Build Environment

Complying with ICC-ES AC 386, AC376 and AC269.2
(Applicable Codes : IBC & IRC)

MATERIAL

The M4-Exterior Sheathing is Fiber reinforced, produced with composite materials of pure Magnesium Sulphate, expanded Perlite, other agents and strong alkali free glass fiber mesh. It is 100% Silica free. The board appears in its natural off white color as standard and has a hard and durable surface.

FIRE RATED

M4 1/2" Sheathing passed the ASTM E119 1-hour load bearing fire resistance rating on 2"x4" wood studs at 100% design load, determined in accordance with the NDS.

RACKING SHEAR

Tested according to ASTM E72, M4 1/2" is a racking shear wall. Governed by a 0.200" drift limit its allowable load is 186 plf on wood studs and 243 plf on steel studs.

MOISTURE RESISTANT

The board can absorb and release moisture an unlimited number of times, without changes in the board strength properties and the board has less than 0.15% moisture movement according ASTM D1037. The board is vapor permeable.

RESISTANT TO MOLD AND TERMITES

According ASTM D3273 resistance to growth of Mold, the M4-Exterior Sheathing achieved a rating of 10 on a scale of 0 – 10 where 10 is the best possible result. Thus concluding the PH value makes the M4 board very resistant to attack by Termites, and Mold.

CHLORIDE, MOISTURE ABSORPTION

The M4-Exterior Sheathing has limited moisture absorption from air humidity, compared to normal MgO boards, as the M4 board does not contain chloride, resulting in moisture absorption and more importantly NO corrosion of fasteners, aluminium windows, etc.

APPLICATIONS

Exterior Sheathing, SIPs, Modular Construction. For commercial and residential construction, it is a single material replacement for walls requiring racking shear, fire rating and weather barrier. At only 1/2" it affords more interior square footage space by eliminating material layers. M4 does not rot, warp, expand or contract, is eco-friendly, non-toxic and VOC free.

Technical Specifications

• M4-Exterior Sheathing



Dimensions

Length Standard	feet	5' 8' 10'
Width Standard/Max	feet	3' 4'
Thickness Standard	inches	1/4" 5/16" 3/8" 1/2" 5/8"
Color Standard		Off-White
Glass Fiber Mesh Standard/Max	Non alkali fiber glass mesh	2 layer ≤ 3/8"; 3 layer > 3/8"
Tolerance Thickness	ASTM C 1186	+/- 0.5%
Tolerance Length	ASTM C 1186	+/- 0.5%
Tolerance Width	ASTM C 1186	+/- 0.5%
Density	ASTM C 1186	53 lb/ft ³

Fire Properties

Fire Class Material	ASTM E 84	Flame spread - index 0
Fire Class Material	ASTM E 84	Smoke- index 0
Fire Class Material	ASTM E 136	Non combustible
Load Rated Construction	ASTM E 119/CAN/ULC S101-07	1 hour on 2" x 4" wood studs

Mold Resistance

90 F +/- 2 RH 95-98% exposed for 720 Hours

5/8" Thickness	ASTM D3273, scale 1-10 and 10 best	10
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Flexural Strength Modulus of Elasticity

1/4" M4 Wet	ASTM C 1185	1632 psi
1/4" M4 Dry	ASTM C 1185	1871 psi
5/8" M4 Wet	ASTM C 1185	1059 psi
5/8" M4 Dry	ASTM C 1185	1150 psi

Water Vapor Transmission (72F +/- 5% RH)

Z Value 7/16"	EN 12572	0.351
Z Value 5/8"	EN 12572	0.884

Hygroscopic Properties

Absorption of Humidity from Air	72F – 94% RH exposed for 720 Hours	<28%
Expansion from Dry to Wet	ASTM D 1037	< 0.15 %
Moisture Content by Delivery	ASTM 1185	< 20 %

Chloride Content

Content of Chloride	EN 14582: 2007	< 1 %
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Thermal Properties

R Value 1/4" M4	ASTM C518	0.744
R Value 5/8" M4	ASTM C518	0.826

Shear Bond Strength

Dry Set Portland Cement	ANSI A118.1	54.8 psi
Latex-Portland Cement Mortar	ANSI A118.4	108.9 psi

Bending Strength 5/8"

Bending Strength	ASTM D 1037	> 7.2 MPa (>1050 psi)
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Fasteners Pull Through

1/4" M4	ASTM D 1037	108.3 lbs
3/8" M4	ASTM D 1037	149.5 lbs
1/2" M4	ASTM D 1037	216.8 lbs
5/8" M4	ASTM D 1037	225.5 lbs

Racking Shear Resistance for 1/2" thickness according ASTM E72 and a 0.200" drift limit

Staple 0.5 crown with 16 in. o.c on 2" x 4" lumber	Ultimate Load	6,236 lbs
Staple 0.5 crown with 16 in. o.c on 2" x 4" lumber	Allowable racking shear	186 plf
S-12 Rock on with 16 in. o.c on 1 5/8" x 3.5" 18 Gauge	Ultimate Load	10,030 lbs
S-12 Rock on with 16 in. o.c on 1 5/8" x 3.5" 18 Gauge	Allowable racking shear	243 plf

Humidity Deflection	ASTM C 1396	< 1/16"
Compression Indentation	ASTM D2394	0.01" (1/4") – 0.02" (5/8")
Falling Ball Impact	ASTM D1037	Pass
Freeze Thaw Resistance	ASTM C666	Pass

Sound Insulation

>43dB if using: 1/2" M4 Exterior Sheathing + 1.97" Mineral wool + 1/2" M4 Exterior Sheathing