
Product Description

- **MEGCRETE™ MgO** is a best-in-class, innovative, and versatile mineral-based building material that utilizes magnesium cement technology. It stands as a superior alternative to conventional materials by offering unmatched fire resistance, water resistance, as well as mold and mildew resistance, all without the use of harmful chemicals.
- **MEGCRETE™** outperforms traditional sheathing panels from an impact, fire, water, mold, mildew, and insect / rodent resistance standpoint.
- **MEGCRETE™** is a versatile building material and can be used in many varied applications, such as exterior sheathing, interior wallboard, ceilings, subfloors, roofdecking, tile backer, soffits, fire-resistant exterior sheathing, fire-resistant wall assemblies, fire-resistant floor/ceiling assemblies, and fire-resistant soffits.
- **MEGCRETE™** is manufactured in a strictly controlled, low energy, factory environment. It is a homogenous, toxin-free, free from VOC's and quartz silica, inorganic mineral based product and is available in varying thicknesses and sizes, and edge profiles.
- **MEGCRETE™ 1/2" (12mm) and 5/8" (16mm)** single layer fire-resistant assemblies outperform gypsum-based products in 1-hour and 2-hour fire rated assemblies.

Products

- **MEGCRETE™ Fire-Resistant Wallboard** is designed to be used internally or externally as a gypsum replacement. It can be taped and plastered in a similar fashion to traditional gypsum-based products. It performs particularly well in fire-resistant wall, floor, and ceiling assemblies.
- **MEGCRETE™ Fire-Resistant Exterior Sheathing** is designed for use as a fire-resistant external or internal structural sheathing. It can be nailed or screwed or stapled to studs and provides a smooth finish surface that can be accept all traditional exterior finishes.
- **MEGCRETE™ Fire-Resistant Subflooring** is designed as a single layer subfloor product, to which tiles, hardwood flooring and laminate flooring can be applied directly. It can span 24" o.c. and can be nailed or screwed. For best results it is recommended that all subfloors are glued and screwed.
- **MEGCRETE™ Soffits** are designed to provide fire rated ventilated or non-ventilated soffits.
- **MEGCRETE™ Tile Backer** is designed as a water-resistant non-combustible tilebacker.

Product Dimensions
Thicknesses

Imperial: 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4"

Metric: 3mm | 6mm | 10mm | 12mm | 16mm | 18mm

Dimensions

Imperial: 3' x 5' | 4' x 8' | 4' x 9' | 4' x 10' | 4' x 12'

Metric: (mm) 915 x 1525 | 1220 x 2440 | 1220 x 2750 | 1220 x 3050 | 1220 x 3660

Custom: Custom thicknesses and dimensions available by request. Subject to minimum order.

Edge Finish Options

Square: all thicknesses

Beveled: all thicknesses

Tapered: 12mm or greater

T&G: 15mm or greater

Ship Lap: 15mm or greater

Soffits

Available in smooth and wood grain; ventilated and non-ventilated in most thicknesses.

Contact **MEGCRETE™** for further details and assemblies.

Product Packaging

- **MEGCRETE™** is shipped on pallets with protective cover sheets, corner protection, banded, and wrapped in plastic.
- Pallet sizes are 3' x 5', 4' x 8', 4' x 9', 4' x 10', and 4' x 12'.
- All pallets loaded to a maximum of 4,800 lbs (2,177 Kg)

Product Storage

- Store **MEGCRETE™** products in clean, dry areas off the ground (indoors if possible)
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- Cover panels with plastic sheets, tarps; leave covers open and away from the sides of the panels to allow for air circulation.
- Consider additional protection during extended adverse weather conditions.
- **MEGCRETE™** panels should be stored on the manufacturer's pallets off the ground and away from standing water.
- To protect edges from damage, do not store **MEGCRETE™** panels vertically.
- To prevent the risk of injury, do not stack **MEGCRETE™** panels higher than 12 feet.
- Loose storage of **MEGCRETE™** panels is not recommended.

Warranty

- All **MEGCRETE™** products come with a Limited Warranty.
- **MEGCRETE™ Warranty** can be downloaded at www.MEGCRETE.com

Code Compliance

- **MEGCRETE™** MgO has been evaluated under CCMC Report 14038-R, confirming compliance with the 2015 National Building Code (NBC) of Canada as a non-structural exterior wall sheathing.
- **MEGCRETE™** has been evaluated under IAPMO Evaluation Report ER-986 and Listing Report UEL-5068, confirming compliance with the 2018, 2015, and 2012 International Building Code (IBC) and International Residential Code (IRC). The boards have been assessed for structural properties, durability, surface-burning characteristics, and use in Construction Types I-IV.
- The **MEGCRETE™** ISO Certified Factory is subject to ongoing Third Party audit inspections that satisfy the quality control requirements of CCMC, IAPMO, UL, QAI and Intertek.

Related Sections

05400 - Cold Formed Metal Framing
06100 - Rough Carpentry: Wood Framing
06100- Rough Carpentry: Sheathing
06200 - Finish Carpentry: Adjacent work to receive fire treated sheathing.
06400 - Architectural Woodwork: Adjacent work to receive fire treated sheathing.
07210- Insulation: Exterior wall insulation
07900- Sealant: Joint sealant and acoustic sealant
08100 - Metal support assemblies
09215- Veneer plaster

Installation Guidelines & Limitations

- See **MEGCRETE™ Installation Guide(s)** for installation instructions and product limitations.
- **MEGCRETE™ Installation Manual** can be downloaded at www.MEGCRETE.com

Testing and Certification

IAPMO ER-986 & UEL-5068	Evaluation Report ER-986 and Listing Report UEL-5068; evaluated for use as fiber-reinforced magnesium-oxide based sheathing
CCMC 14038-R	CCMC Evaluated for use as Non-Structural Exterior Sheathing
ASTM E135-04	Non-Combustibility
ASTM E136-04	Behavior of Materials in a Vertical Tube at 750 C
ASTM E84-05 (NFPA 262)	Surface Burning Characteristics
ULC S102-10	Surface Burning Characteristics. Zero Smoke Spread and Zero Flame Spread.
ULC S102	Zero Smoke Spread, Zero Flame Spread
ASTM E119-14 (ANSI/UL 263)	1-Hour and 2-Hour Non-Load-Bearing Fire Rated Wall Assemblies
ASTM E119-08a	Standard Test methods for Fire Tests of Building Construction and Materials
UL 263 Design No. U061	1-Hour and 2-Hour Non-Load-Bearing Fire Rated Wall Assemblies
Can ULC S101 Design No. U061	Exceeds requirements for single 12mm (15/32") layer one (1) hour fire rating.
Can ULC S102 Design No. U061	Exceeds requirements for single 12mm (15/32") layer one (1) hour fire rating.

ASTM E119	Design No. U061	Exceeds requirements for single 12mm (15/32") layer one (1) hour fire rating.
UL 263	Design No. U061	Exceeds requirements for single 12mm (15/32") layer one (1) hour fire rating.
QAI	Design No. B1073-1a	1.0-Hour Load Bearing Fire Rated Assembly
QAI	Design No. B1073-1b	1.5-Hour Load Bearing Fire Rated Assembly
QAI	Design No. B1073-1c	2.0-Hour Load Bearing Fire Rated Assembly
QAI	Design No. B1073-1d	2.0-Hour Load Bearing Fire Wall
ULC	Design No. W490	1-Hour Non-Load Bearing Non-Combustible Fire Rated Assembly
ASTM C1185	-03	Flexural Strength
ASTM C1185	-08	Flexural Strength After Construction Durability Exposure
ASTM C1185	-08	Flexural Strength Degradation due to Thermal Aging
ASTM C1185	-08	Flexural Strength Degradation due to UV Exposure
ASTM C1185	-08	Flexural Strength Degradation at Extreme Temperatures
ASTM C1185	-08	Flexural Strength Degradation due to Freeze / Thaw
ASTM C1185	-08	Flexural Strength Loss due to Water Exposure
ASTM C1185	-08	Density / Specific Gravity (68% °F / 65% RH)
ASTM C1185	-08	Moisture Content
ASTM C1185		Frost Resistance (Freeze / Thaw)
ASTM C1186	-02	Moisture Movement
ASTM C1186	-02	Water Absorption
AWPA D6815	-09	Duration of Load and Creep Effects Modified by ASTM C1185-08
AWPA E12		Fastener Corrosivity
ASTM E72		Exceeds Racking requirements.
ASTM AC386		Exceeds the structural requirements.
ASTM C1396	-60A	Exceeds requirements for Humidified Deflection.
ASTM AC386		Exceeds requirements for Humidified Deflection.
ASTM C1325	-04	Dimensions and Tolerances
ASTM C1325		Exceeds requirements for Shear Bond Strength
ASTM C1325		Exceeds requirements for Falling ball Impact.
ASTM C1325		Exceeds requirements for Nail Head Pull-Through
ASTM C1325		Exceeds requirements for Compression Indentation.
ASTM D-3273		Exceeds requirements for Resistance to Growth of Mold and Mildew
ASTM E96 / E96M		Exceeds requirements for Vapor Transmission.
ASTM C1186		12mm = 23%
ASTM D5116		Contains no VOC's and exceeds the overall requirements of the US Green Buildings Council LEED Standard for VOC's
ASTM C1396	-06a	Humidified Deflection
AC376 and ASTM E72	section 15	Wet Racking Shear
ASTM G155		Xenon Arc Accelerated Weathering
ASTM G21		Standard Practice for Determining Resistance of Synthetic Polymeric materials to Fungi

**MEGCRETE™
STRUCTURAL LOAD
PERFORMANCE**

1. **Panel Thickness:** 12 mm (1/2 in nominal)
Product: MEGCRETE™ Structural
Application: Interior / Exterior Ceilings, Walls & Trim

TRANSVERSE LOAD**Test Standards:** AC 376 and ASTM E72-05**Load Results**

Load Direction	Average Load	Standard Deviation
Positive Load	145.63 psf (6.97 kPa)	14.35 psf (0.69 kPa)
Negative Load	130.66 psf (6.26 kPa)	16.36 psf (0.78 kPa)

Compliance:AC 376 Section 4.1.2 — deviation ≤ 15% of average (**Compliant**)**INSTALLATION**

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4.1
Stud Blocking Required	No
Fastener Type / Size	Grabber Guard 1500, No. 8 × 1-1/2" Long
Fastener Pattern	6" Perimeter / 12" at intermediate supports
Maximum Load	17.0 kN
Average Load	16.3 kN
Nominal Shear Strength	NA

CONCENTRATED, TRANSVERSE AND RACKING LOAD**Test Standards:**

ASTM E72-22, Sections 17, 18, 19, 20, and 21

ASTM E2322-22, Sections 10, 11, 12, and 13

2. **Panel Thickness:** 12 mm (1/2 in nominal)
Product: MEGCRETE™ Ultra Structural
Application: Roofing Substrate, Interior / Exterior Walls, Ceilings, Trim and Shear Walls

TRANSVERSE LOAD (Two (2) Point Load) – FLOOR**Test Standard:** ASTM E72-22, Section 17; ASTM E2322-22, Section 10, Method B**Load Results**

Parameter	Result
Maximum Load	1146 N
Average Load	1129 N
Average Deflection @ 1000 N	48.96 mm
Depth of Indentation	NA

CONCENTRATED LOAD – FLOOR**Test Standards:**

ASTM E72-22, Section 18

ASTM E2322-22, Section 11

Load Results

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.26 mm at 4450 N
Average Deflection	0.25 mm
Depth of Indentation	0.12 mm

CONCENTRATED LOAD – FLOOR**Test Standards:**

ASTM E72-22, Section 18

ASTM E2322-22, Section 14

Load Results

Parameter	Result
Applied Load	4450 N
Maximum Deflection	NA
Average Deflection	0.24 mm
Depth of Indentation	0.12 mm

TRANSVERSE LOAD (Two (2) Point Load) – ROOF**Test Standards:**

ASTM E72-22, Section 20

ASTM E2322-22, Section 12, Method B

Load Results

Parameter	Result
Maximum Load	1389 N
Average Load	1382 N
Maximum Deflection	65.24 mm at 1250 N
Average Deflection	64.96 mm at 1250 N

CONCENTRATED LOAD – ROOF**Test Standards:**

ASTM E72-22, Section 21

ASTM E2322-22, Section 13

Load Results

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.23 mm
Average Deflection	0.22 mm at 4450 N
Depth of Indentation	0.08 mm

CONCENTRATED LOAD – ROOF**Load at the Center of the Board****Test Standards:**

ASTM E72-22, Section 21

ASTM E2322-22, Section 13

Load Results

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.22 mm
Average Deflection	0.21 mm
Depth of Indentation	0.06 mm

INSTALLATION

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4.1
Stud Blocking Required	No
Fastener Type / Size	Grabber Guard 1500, No. 8 × 1-1/2 in Long
Fastener Pattern	6 in perimeter / 12 in at intermediate supports
Maximum Load	17.0 kN
Average Load	16.3 kN
Nominal Shear Strength	NA

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3. **Panel Thickness:** 16 mm (5/8 in nominal)
Product: MEGCRETE™ Ultra Structural
Application: Interior / Exterior Walls, Ceilings, Trim, and Shear

RACKING LOAD (STANDARD WOOD FRAMES)**Test Standard:** ASTM E72-22, Section 14**Load Results**

Parameter	Result
Maximum Load	31.4 kN
Average Load	30.7 kN
Maximum Deflection	29.17 mm at 24.0 kN
Average Deflection	26.93 mm at 24.0 kN

INSTALLATION

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4:1
Stud Blocking Required	No
Fastener Type / Size	Grabber Guard 1500, No. 8 × 1-3/4 in Long
Screw Spacing	6 in perimeter / 12 in at intermediate supports
Maximum Load	31.4 kN (7059 lbf)
Average Load	30.7 kN (6902 lbf)
Nominal Shear Strength	1725 plf

4. **Panel Thickness:** 18 mm (3/4 in nominal)
Product: MEGCRETE™ Ultra Structural
Application: Roofing and Flooring Substrate

TRANSVERSE LOAD (Two Point Load) – FLOOR

Test Standard: ASTM E72-15, Section 17; ASTM E2322-03 (2015), Section 10, Method B

Load Results

Parameter	Result
Maximum Load	1360 N
Average Load	1338 N
Maximum Deflection @ 1050 N	7.35 mm
Average Deflection @ 1050 N	6.95 mm

INSTALLATION

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4:1
Stud Blocking Required	No
Fastener Type / Size	Grabber Guard 1500, No. 8 × 2 in Long
Fastener Spacing	6 in perimeter / 12 in at intermediate supports

5. **Panel Thickness:** 18 mm (3/4 in nominal)
Product: MEGCRETE™ Ultra Structural
Application: Roofing / Flooring Substrate and Trim

RACKING LOAD

Test Standard: ASTM E72-22, Section 14

Load Results

Parameter	Result
Maximum Load	17.0 kN
Average Load	16.3 kN
Maximum Deflection	37.17 mm
Average Deflection	30.78 mm

INSTALLATION

Parameter	Requirement
Applied Load	1025 PF
Deflection	0.039 mm
Floor Joist and Truss Centers	24 in
Materials	Wood or light-gauge steel as specified
Fastener Pattern	6 in perimeter / 12 in at intermediate supports
Fasteners	Grabber Guard 1500, No. 8 × 1-3/4 in to 2 in Long

6. Panel Thickness: 18 mm (3/4 in nominal)**Product:** MEGCRETE™ Floor Sheathing**Application:** Roofing / Flooring Substrate and Trim**CONCENTRATED LOAD – FLOOR****Test Standard:** ASTM E72-15, Section 18; ASTM E2322-03 (2015), Section 11**Load Results**

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.71 mm at 4450 N
Average Deflection	0.68 mm
Depth of Indentation	0.43 mm

CONCENTRATED LOAD – FLOOR**Test Standard:** ASTM E72-15, Section 18; ASTM E2322-03 (2015), Section 11**Load Results**

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.80 mm at 4450 N
Average Deflection	0.71 mm
Depth of Indentation	0.39 mm

TRANSVERSE LOAD (Two Point Load) – ROOF**Test Standard:** ASTM E72-15, Section 20; ASTM E2322, Section 12 (2015), Method B**Load Results**

Parameter	Result
Maximum Load	1916 N
Average Load	1883 N
Maximum Deflection @ 1050 N	7.47 mm
Average Deflection @ 1050 N	6.91 mm

CONCENTRATED LOAD – ROOF**Test Standard:** ASTM E72-15, Section 21; ASTM E2322-03 (2015), Section 13**Load Results**

Parameter	Result
Applied Load	4450 N
Maximum Deflection	0.67 mm
Average Deflection	0.61 mm at 4450 N
Average Deflection (mm)	0.28

INSTALLATION

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4.1
Stud Blocking Required	NA
Fastener Type / Size	Grabber Guard 1500, No. 8, 2 Inch Long
Fastener Spacing	6" Perimeter and 12" at intermediate supports

7. Panel Thickness: 18 mm (3/4 in nominal)**Product:** MEGCRETE™ Ultra Structural**Application:** Roofing and Flooring Substra**TRANSVERSE LOAD (Two Point Load) – FLOOR****Load at the center of the board****Test Surface:** Smooth**Test Standard:** ASTM E72-15, Section 17; ASTM E2322-03 (2015), Section 10, Method B**Load Results**

Parameter	Result
Maximum Load	1360 N
Average Load	1338 N
Maximum Deflection @ 1050 N	7.35 mm
Average Deflection @ 1050 N	6.95 mm

CONCENTRATED LOAD – FLOOR**Load at the center of the board****Test Surface:** Smooth**Test Standard:** ASTM E72-15, Section 18; ASTM E2322-03 (2015), Section 11**Load Results**

Parameter	Result
Maximum Load	4450 N
Maximum Depth of Indentation	0.52 mm
Average Depth of Indentation	0.43 mm
Maximum Deflection	0.71 mm
Average Deflection	0.68 mm

CONCENTRATED LOAD – FLOOR**Load at the center of the edge of the board****Test Surface:** Smooth**Test Standard:** ASTM E72-15, Section 18; ASTM E2322-03 (2015), Section 11**Load Results**

Parameter	Result
Maximum Load	4450 N
Maximum Depth of Indentation	0.44 mm
Average Depth of Indentation	0.39 mm
Maximum Deflection	0.80 mm

Average Deflection	0.71 mm
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TRANSVERSE LOAD (Two-point Load) – ROOF**Test Surface:** Rough**Test Standard:** ASTM E72-15, Section 20; ASTM E2322-03 (2015), Section 12, Method B**Load Results**

Parameter	Result
Maximum Load	1916 N
Average Load	1883 N
Maximum Deflection @ 1050 N	7.47 mm
Average Deflection @ 1050 N	6.91 mm

CONCENTRATED LOAD – ROOF**Load at the center of the board****Test Surface:** Rough**Test Standard:** ASTM E72-15, Section 21; ASTM E2322-03 (2015), Section 13**Load Results**

Parameter	Result
Maximum Load	4450 N
Maximum Depth of Indentation	0.30 mm
Average Depth of Indentation	0.28 mm
Maximum Deflection	0.67 mm
Average Deflection	0.61 mm

CONCENTRATED LOAD – ROOF**Load at the center of the edge of the board****Test Surface:** Rough**Test Standard:** ASTM E72-15, Section 21; ASTM E2322-03 (2015), Section 13**Load Results**

Parameter	Result
Maximum Load	4450 N
Maximum Depth of Indentation	0.35 mm
Average Depth of Indentation	0.31 mm
Maximum Deflection	0.67 mm
Average Deflection	0.63 mm

INSTALLATION

Parameter	Requirement
Maximum Aspect Ratio (h/w)	4.1
Stud Blocking Required	Walls Only
Fastener Type / Size	Grabber Guard 1500, No. 8, 2 in
Fastener Spacing	6 in perimeter / 12 in at intermediate supports

LIST OF ACRONYMS

Acronym	Item
AC	Acceptance Criteria
ANSI	American National Standards Institute
ASTM	ASTM International
BXUV	UL Fire Resistance Product Code
CCMC	Canadian Construction Materials Centre
CE	Conformité Européenne
EN	Europäische Norm ("European Norm")
ICC-ES ESR 2880	International Code Council Evaluation Service Report 2880
FBC	Florida Building Code
HSC	Hygrometric Coefficient of Expansion
IAW	In Accordance With
ICC Acceptance Criteria (AC308)	ICC-AC308
kN	Kilonewtons
Kpa (kPa)	Kilopascal
LBF	Pound-Force
LB-FT	Pounds per Foot
LEED	Leadership in Energy and Environmental Design
mm	Millimeter
N	Newtons
OSB	Oriented Strand Board
Psf	Pounds per square foot
psi	Pounds per square inch
RH	Relative Humidity
R Value	Thermal Resistance
SDS	Safety Data Sheet
STC	Sound Transmission Class
TBA	TO Be Announced
UL	Underwriters Laboratory
ULC	Under Writers of Canada
USA	United States of America
WVT	Water Vapor Transmission

NOTICE TO SPECIFIERS

In accordance with **IAPMO Evaluation Report ER-986 and Listing Report UEL-5068, MEGCRETE™ fiber-reinforced MgO building materials are approved for use as structural sheathing applied to interior and exterior wood- and metal-framed assemblies. When installed as specified, MEGCRETE™ sheathing resists uniform transverse loads and racking shear loads.

MEGCRETE™ fiber-reinforced MgO building materials are suitable for use in all construction types regulated under the **International Building Code (IBC)** and in buildings constructed in accordance with the **International Residential Code (IRC)**.

Sales Information and Technical Support

Contact EcoMAXX Building Products today for sales information, order placement, or technical support by phone or email.

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