

DIVISION: 09 00 00—FINISHES
Section: 09 28 15—Magnesium Oxide Backing Panels

REPORT HOLDER:

MAGNUM BOARD PRODUCTS, LLC

EVALUATION SUBJECT:

MAGNUM BOARD® AND MEGCRETE™ BOARD

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2015 and 2012 *International Building Code*® (IBC)
- 2015 and 2012 *International Residential Code*® (IRC)

Properties evaluated:

- Structural
- Durability
- Construction Types I-IV
- Surface-burning characteristics

2.0 USES

Magnum Board and MEGCRETE Board are used on interior surfaces as defined in IBC Section 2502, as substrate sheets suitable for decoration with paint, wallpaper, ceramic tile, natural stone or dimension stone on walls in interior dry areas and on walls and ceilings as permitted in IBC Section 2509.2 and IRC Section 702.4.2. Magnum and MEGCRETE Boards can be used as structural sheathing applied to interior and exterior wood-framed walls, to resist uniform transverse loads and racking shear loads. The boards are suitable for use in all construction types under the IBC and in buildings constructed under the IRC.

3.0 DESCRIPTION

Magnum and MEGCRETE Boards are 1/2-inch thick (12 mm) magnesium-oxide sheets, reinforced with fiberglass mesh on both faces, available with a 4-foot (1219 mm) width and lengths of either 8 or 10 feet (2.4 or 3.0 m). The boards exhibit a maximum deflection of 1/16 inch (1.6 mm) in humidified deflection testing in accordance with ASTM C1396. The boards have a flame spread Index of 10 or less and a smoke-developed index of 5 or less when tested in accordance with ASTM E84. The boards are classified as noncombustible building materials in accordance with ASTM E136.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 Transverse Load Resistance: When installed in accordance with Section 4.2 of this report, Magnum and

MEGCRETE boards sheathed walls resist a maximum transverse load of 40 psf (1915 Pa).

4.1.2 Racking Shear Resistance: When installed in accordance with Section 4.2 of this report, Magnum and MEGCRETE boards sheathed walls have a maximum racking shear resistance of 140 plf (2043 N/m), a maximum wall height of 8 feet (2.4 m) and a shearwall height-to-length aspect ratio of 1-to-1. Use of the boards as shearwall sheathing is limited to resisting wind loads and seismic loads in Seismic Design Categories A, B and C.

4.2 Installation:

Magnum and MEGCRETE Boards must be installed on wood framing members spaced not more than 16 inches (406 mm) on center on minimum 2-by-4 studs. The framing members must have a minimum specific gravity of 0.42 for transverse load resistance and 0.50 for racking shear resistance. The panel joints must occur over framing. The boards must be installed using corrosion-resistant, 1 1/2-inch (38.1 mm), No. 8, self-drilling screws at a maximum spacing of 6 inches (152 mm) on center around the perimeter and 12 inches (305 mm) on center in the field.

5.0 CONDITIONS OF USE

The Magnum and MEGCRETE Board described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** The boards must be installed in accordance with this report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.
- 5.2** When used as a component of shear walls (racking shear), the boards are recognized for use in Seismic Design Categories A, B and C under the IBC and IRC.
- 5.3** The support framing must be designed for a maximum allowable deflection of L/360 under seismic or wind loads for exterior or interior areas.
- 5.4** Use of Magnum and MEGCRETE Boards in fire-resistance-rated construction is outside the scope of this report.
- 5.5** Use of Magnum and MEGCRETE Boards as floor sheathing or floor underlayment is outside of the scope of this report.
- 5.6** Installation of a vapor retarder in exterior walls must be in accordance with code requirements.
- 5.7** Magnum and MEGCRETE Boards must not be exposed to the weather and must not be used in wet areas as defined in IBC Section 2509. Under the IRC, the substrate sheets must not be used in showers.

ICC-ES Evaluation Reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, LLC, express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

- 5.8 Use of the boards in horizontal diaphragms is outside of the scope of this report.
- 5.9 Under the 2012 IBC Section 1403.5, use of the boards in exterior walls of buildings of Type I, II, III or IV construction, containing a combustible water-resistive barrier is limited to walls up to 40 feet (12 192 mm) or less in height above the grade plane.
- 5.10 When use of the boards in exterior walls on buildings of Type I, II, III or IV construction in accordance with Exception 2 to Section 1402.5 of the 2015 IBC, the walls are not limited 40 feet (12 192 mm) in height above the grade plane.
- 5.11 The Magnum and MEGCRETE boards are manufactured in Haiyan City, Jiangsu Province, China, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Fiber-reinforced Magnesium-oxide-based Sheets (AC386), dated April 2019.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Reinforced Cementitious Sheets Used as Wall and Ceiling Sheathing and Floor Underlayment (AC376), dated August 2012 (Editorially revised April 2020).

- 6.3 Data in accordance with the ICC-ES Acceptance Criteria for Proprietary Sheathing Joints-Attached to Wood Light-Frame Wall Construction Used as Shear Walls (AC269.2), dated October 2013 (editorially revised September 2018).
- 6.4 Data in accordance with the ICC-ES Acceptance Criteria for Fiber-cement Interior Substrate Sheets Used in Wet and Dry Areas (AC378), dated August 2012 (Editorially revised April 2020).

7.0 IDENTIFICATION

- 7.1 Each Magnum or MEGCRETE board bears the MAGNUM BOARD PRODUCTS name, the product name, and the evaluation report number (ESR-2880).