

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

DIVISION: 09 00 00—FINISHES

Section: 09 28 15—Magnesium Oxide Backing Panels

REPORT HOLDER:

HUBER ENGINEERED WOODS LLC

EVALUATION SUBJECT:

EXACOR™: NOMINAL 1/2-INCH (12 MM ACTUAL) THICK MAGNESIUM OXIDE SHEATHING PANEL

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015 and 2012 *International Building Code*® (IBC)
- 2018, 2015 and 2012 *International Residential Code*® (IRC)

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-4750 LABC and LARC Supplement](#).

Properties evaluated:

- Structural
- Durability
- Surface-burning characteristics

2.0 USES

2.1 General:

EXACOR™ sheathing panels are used as wall and floor sheathings in Type V construction.

2.2 Fire Resistive Assemblies:

EXACOR™ sheathing panels shall only be used as part of a fire-rated assembly when suitable evidence and details are submitted and approved by the authority having jurisdiction.

3.0 DESCRIPTION

3.1 General:

EXACOR™ sheathing panels are composed of magnesium oxide cement and fully embedded layers of fiberglass mat. The panels have a smooth-side and a rough-side. The panels are available in nominal size of 1/2-inch (12 mm actual) thickness by 3 feet (0.91 m) or 4 feet (1.22 m) wide with a length up to 12 feet (3.66 m). The panels are manufactured under factory-controlled conditions.

3.2 Surface-burning Characteristics:

EXACOR™ sheathing panels have a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84.

3.3 Mold Growth:

EXACOR™ sheathing panels have an average growth rating of 0, showing no observed growth under 100x magnification, when tested in accordance with ASTM G21.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The scope of this report is limited to evaluation of the properties included in Tables 1 through 3. Details related to incorporation of the product, including appropriate factors of safety, are beyond the scope of this report and are the responsibility of the designer of record.

4.1.1 Load Values: EXACOR™ sheathing panels properties shown in Tables 1 through 3 are based on short duration load tests only.

4.2 Installation:

4.2.1 Attachment:

EXACOR™ sheathing panels shall be attached to structural members with Simpson Strong-Tie CB3BLG #10 x 1 5/8 inch (41.28 mm) Fiber-Cement Board Screw as stated in Table 3 or an approved equivalent fastener as determined by the designer of record. The panels shall be positioned with the rough-side against the structural members and fasteners driven into the smooth-side.

4.2.2 Exterior Wall Covering:

EXACOR™ sheathing panels shall be covered on the exterior by an approved water-resistive barrier as required by the applicable code. The water-resistive barrier shall be attached with flashing in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer. The exterior facing of the panels shall be covered with weather protection as required by the applicable building code or other approved materials.

5.0 CONDITIONS OF USE

EXACOR™ sheathing panels described in this report comply 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 EXACOR™ sheathing panels shall be manufactured, identified and installed in accordance with this report, the approved construction documents, the manufacturer's installation instructions and the applicable code. In the event of a conflict between the

manufacturer’s published installation instructions and this report, this report shall govern. Approved construction documents shall be available at all times on the jobsite during installation.

- 5.2 This report applies only to the panel thickness specifically listed herein.
- 5.3 EXACOR™ sheathing panels shall not be placed within 8 inches (203.2 mm) of exposed earth unless a suitable method of protection against termites and decay is approved by the local building official.
- 5.4 EXACOR™ sheathing panels shall not be exposed to sustained temperature exceeding 125°F.
- 5.5 EXACOR™ sheathing panels shall be protected by a code approved water-resistive barrier.
- 5.6 The panels are manufactured in the production facility in Nantong, China, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Reports of load testing of the panels in accordance with ASTM C1185, ASTM D2718, ASTM D3500 and ASTM D3501 for flexural strength, shear strength, tensile strength and compressive strength.

- 6.2 Report of durability testing, including temperature effects, thermal aging, water soaking, moisture exposure, freezing and thawing, ultraviolet light resistance, linear thermal expansion and fungi resistance.
- 6.3 Reports of duration of load and creep effects.
- 6.4 Report of test in accordance with ASTM D1037 for fastener performance.
- 6.5 Report of test in accordance with ASTM E84 for surface burning characteristics.

7.0 IDENTIFICATION

- 7.1 Each panel must be identified by a stamp or label on the panel that includes the name of the report holder (Huber Engineered Woods LLC), identification of the manufacturing facility, production date or lot number and the evaluation report number (ESR-4750).
- 7.2 The report holder’s contact information is the following:

HUBER ENGINEERED WOODS LLC
10925 DAVID TAYLOR DRIVE, SUITE 300
CHARLOTTE, NORTH CAROLINA 28262
(800) 933-9220
www.huberwood.com

TABLE 1—REPRESENTATIVE PROPERTIES ^{1,2,3,4}

PROPERTY	MACHINE DIRECTION (PSI)	CROSS-MACHINE DIRECTION (PSI)
Flexural Strength, F _b	1,800	1,000
Elastic Modulus (Flexural), E _b	450,000	450,000
Axial Compressive Strength, F _c	1,000	1,000
Elastic Modulus (Compression), E _c	600,000	400,000
Axial Tensile Strength, F _t	500	500
Elastic Modulus (Tension), E _t	179,000	200,000
Planar Shear Strength, F _v	75	75

For SI: 1 psi = 6.9 kPa.

¹ Properties are based on testing in accordance with ASTM C1185, ASTM D2718, ASTM D3500 and ASTM D3501. Testing was performed for both smooth side up and smooth side down orientations.

² Strength properties are minimum values based on 5th percentile with 75% confidence level.

³ Elastic modulus values are based on the average value.

⁴ Machine direction is defined as the long panel direction as manufactured unless otherwise marked.

TABLE 2—SECTION PROPERTIES

BOARD THICKNESS (INCH)	DEAD WEIGHT (PSF)	MOMENT OF INERTIA (INCH ⁴ /FOOT WIDTH)	SECTION MODULUS (INCH ³ /FOOT WIDTH)
0.472	2.33	0.105	0.446

For SI: 1 inch = 25.4 mm; 1 foot = 304.8 mm; 1psf = 0.0479 kPa.

TABLE 3—FASTENER ALLOWABLE CAPACITY ¹

FASTENER	PROPERTY	VALUE (lbf)
Simpson Strong-Tie CB3BLG #10 x 1 ⁵ / ₈ inch Fiber-Cement Board Screw	Lateral Capacity ²	70
	Withdrawal Capacity	45
	Head Pull-through Capacity	90

For SI: 1 lbf = 4.45 N

¹ Average tested values with a design adjustment factor of 5.

² Fastener installed at a minimum of ⁵/₈ inch from edge of board.

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EVALUATION SUBJECT:

EXACOR™: NOMINAL 1/2-INCH (12 MM ACTUAL) THICK MAGNESIUM OXIDE SHEATHING PANEL

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in ICC-ES evaluation report [ESR-4750](#) has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4750](#), complies with the LABC Chapter 14, and the LARC, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4750](#).
- The design, installation, conditions of use and identification of the EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-4750](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

This supplement expires concurrently with the evaluation report, issued February 2021.

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in ICC-ES evaluation report ESR-4750, has also been evaluated for compliance with the code(s) noted below.

Applicable code editions:

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in Sections 2.0 through 7.0 of the evaluation report ESR-4750, complies with CBC Chapter 14, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16 and 17, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in Sections 2.0 through 7.0 of the evaluation report ESR-4750, complies with CRC, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report.

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Applicable code editions:

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4750, complies with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design requirements are determined in accordance with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-4750 for the 2018 *International Building Code*® meet the requirements of the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable.

Use of the EXACOR™: Nominal 1/2-inch (12 mm actual) thick magnesium oxide sheathing panel for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

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