

ICC-ES Evaluation Report

ESR-5418

Issued February 2025

Revised April 24, 2025


Subject to renewal February 2026

This report also contains:

- [City of LA Supplement](#)
- [CA Supplement](#)
- [FL Supplement w/ HVHZ](#)

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<p>DIVISION: 06 00 00— WOOD, PLASTICS AND COMPOSITES</p> <p>Section: 06 16 00— Sheathing</p> <p>DIVISION: 09 00 00— FINISHES</p> <p>Section: 09 28 15— Magnesium Oxide Backing Panels</p>	<p>REPORT HOLDER: US MGO COMPANY, LLC</p>	<p>EVALUATION SUBJECT: INNOVATION MGO WALL PANELS</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021 and 2018 [International Building Code® \(IBC\)](#)
- 2021 and 2018 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Durability
- Structural
- Surface Burning Characteristics
- Non-combustibility
- Limited Use as Alternative to Fire-Retardant Treated Wood Structural Panels
- Corrosion Effects

2.0 USES

INNOVATION MgO Wall Panels are nominally 1/2-inch (12 mm actual) thick magnesium oxide panels intended for use as structural wall sheathing (interior or exterior) and interior substrate sheets in Types I-V construction under the IBC and any construction type under the IRC. INNOVATION MgO Wall Panels may be used as shearwall panels in accordance with Section 4.2.1.1. INNOVATION MgO Wall Panels may be used in non-weather exposed locations where fire-retardant treated wood structural panels are allowed in applicable codes for the end uses noted in this evaluation report.

3.0 DESCRIPTION

3.1 General:

INNOVATION MgO Wall Panels are fiberglass-reinforced magnesium oxide panels. The panels are available in a nominal thickness of 1/2-inch (12 mm actual) and nominal 4-foot (1.22 m) widths at a nominal length of 8 feet (2.44 m).

3.2 Surface Burning Characteristics:

INNOVATION MgO Wall Panels have a flame spread index (FSI) of 25 or less and a smoke developed index (SDI) of 450 or less when tested in accordance with ASTM E84. The panels exhibit a Class A interior finish in accordance with Section 803.1.2 of the 2021 and 2018 IBC.

INNOVATION MgO Wall Panels have a flame spread index (FSI) of 25 or less and a smoke developed index (SDI) of 450 or less, as determined for the initial 10-minute test period in accordance with ASTM E2768. During the subsequent 20-minute test period, the flame front did not progress more than 10.5 ft (3.2 m) beyond the centerline of the burners when tested in accordance with ASTM E2768.

3.3 Non-combustibility:

INNOVATION MgO Wall Panels are classified as noncombustible building materials in accordance with ASTM E136 and Section 703.3.1 of the 2021 IBC (Section 703.5.1 of the 2018 IBC).

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 Use as Structural Wall Sheathing Panels:

INNOVATION MgO Wall Panels may be used as structural sheathing on interior or exterior walls. Use on exterior walls requires the panels to be protected with a water-resistive barrier in accordance with 2021 and 2018 IBC Section 1402.2 and IRC Section R703.2, as applicable. When installed in accordance with Section 4.2.1.1 of this report, the sheathed walls are limited to the allowable uniform transverse wind loads shown in [Table 1](#) and the allowable shear resistance values shown in [Table 2](#). Use of the sheathing panels for shear resistance is limited to resisting wind loads and seismic loads in seismic design categories A, B, and C using the maximum values of $R = 2.0$, $\Omega_0 = 2.5$, and $C_d = 2.0$.

4.1.2 Use as Interior Substrate Sheets:

INNOVATION MgO Wall Panels may be used as interior substrate sheets when installed in accordance with Section 4.2.2. The panels are suitable for decoration with paint, wallpaper, ceramic tile, natural stone or dimensional stone veneer on walls in interior dry areas. Panels must be fastened to walls as described in Section 4.2.1, and the allowable uniform loads in [Table 1](#) apply.

4.2 Installation:

4.2.1 Exterior Wall Sheathing Applications (General):

INNOVATION MgO Wall Panels used as exterior wall sheathing must be covered with a water-resistive barrier, as required by applicable code. Exterior wall coverings (siding or wall cladding) must be installed over the water-resistive barrier in accordance with the applicable code and the siding / cladding manufacturer's published installation instructions. All exterior wall coverings must be fastened through the sheathing to the wall framing or blocking. Installation of a vapor retarder in exterior walls must be in accordance with the applicable code requirements.

Corrosion effects of INNOVATION MgO Wall Panels in contact with common construction metals for specified end uses have been evaluated as shown in [Table 3](#).

4.2.1.1 Shear Wall Applications:

INNOVATION MgO Wall Panels must be installed on wood framing members with the sheathing panels installed vertically with the smooth side facing away from the framing. Framing members must be nominal 2 by- sawn lumber with a minimum specific gravity of 0.42. All joints and panel edges must be blocked or backed by framing. The sheathing panels must be attached using 0.113-inch x 2-inch (2.8 mm x 50.8 mm) galvanized ring shank nails with a minimum edge distance of $\frac{3}{8}$ -inch (9.5 mm). Fasteners must be spaced as shown in [Table 2](#), with no fasteners placed within 2-inches (50.8 mm) of any corner of the sheathing panels.

4.2.2 Use as Interior Substrate Sheets:

INNOVATION MgO Wall Panels used as interior substrate sheets may be decorated with paint, wallpaper, ceramic tile, natural stone or dimensional stone veneer on walls in interior dry areas.

4.2.2.1 Use with Tile, Natural Stone, or Dimensional Stone Veneers:

For tile, natural stone and dimensional stone veneers, only those that are compatible with dry-set Portland cement mortars complying with ANSI A118.1, or latex modified thin set mortars complying with ANSI A118.4 may be used. Prior to setting the covering, all panel joints must be filled with the same mortar used to set the

covering. While the mortar is still wet, 2-inch-wide (51 mm), high-strength, coated, alkali resistant, glass fiber reinforcing tape must be embedded into the wet mortar, leveled and allowed to thoroughly dry prior to applying the covering.

4.2.2.2 Use with Paint:

A flush-joint procedure must be used on the panels. Gypsum board joint compounds complying with ASTM C474 and C475 must be troweled into the joints. Paper joint tape must be embedded into the wet joint compound and allowed to thoroughly dry. Additional coatings of joint compound over the joint tape must be applied as needed to acquire the desired level of finish. Fastener heads in the field of the panels must also be covered with joint compound. Once the panels have been finished to the desired level, primer and paint or wallpaper may be applied in accordance with the primer and paint or wallpaper manufacturer's instructions.

5.0 CONDITIONS OF USE:

The INNOVATION MgO Wall Panels 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 INNOVATION MgO Wall Panels 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 The support framing must be designed for a maximum allowable assembly deflection of $L/360$ under seismic or wind loads when the panels are used as structural wall sheathing.
- 5.3 INNOVATION MgO Wall Panels, when installed as a component of shear walls (racking shear), are limited to use under Seismic Design Categories A, B, and C under the IBC and IRC using the maximum values of $R = 2.0$, $\Omega_0 = 2.5$, and $C_d = 2.0$.
- 5.4 Under the 2021 IBC, special inspections must be provided in accordance with 2021 IBC Sections 1704.3 and 1705.12 for sheathing installed in shear walls on buildings in Exposure B locations where the basic design wind speed, V , is 150 mph (67 m/s) or greater and in exposure C and D locations where the basic wind design speed, V , is 140 mph (62.2 m/s) or greater.
- 5.5 Under the 2018 IBC, special inspections must be provided in accordance with 2018 IBC Sections 1704.3 and 1705.10 for sheathing installed in shear walls on buildings in Exposure B locations where the allowable stress design wind speed, V_{ASD} , is 120 mph (53.6 m/s) or greater and in Exposure C and D locations where the allowable stress wind design speed, V_{ASD} , is 110 mph (49.2 m/s) or greater.
- 5.6 Under the IBC, a statement of special inspections complying with IBC Section 1704.3 shall be provided to the code official [this includes addressing the requirements in IBC Section 1704.3.3 and 2021 IBC Section 1705.12 (2018 IBC Section 1705.11), as applicable].
- 5.7 INNOVATION MgO Wall Panels used as exterior wall sheathing must be covered with a water-resistive barrier as required by the applicable code.
- 5.8 Exterior wall coverings (siding or wall cladding) installed over INNOVATION MgO Wall Panels installed as exterior wall sheathing must be installed in accordance with the applicable code and the siding / cladding manufacturer's published installation instructions. All exterior wall coverings must be fastened through the sheathing to the wall framing or blocking.
- 5.9 Installation of a vapor retarder in exterior walls must be in accordance with the applicable code requirements.
- 5.10 When INNOVATION MgO Wall Panels are not installed as an engineered shear wall, the stud walls must be braced to resist shear forces by other materials in accordance with the applicable code.
- 5.11 Compatibility of primer, paint, and wallpaper / wallpaper adhesive with the panels is outside of the scope of this report.
- 5.12 Shear walls constructed with INNOVATION MgO Wall Panels must not be used to resist forces imposed by concrete or masonry walls.
- 5.13 INNOVATION MgO Wall Panels must not be used to resist wind uplift forces or combined uplift and shear forces.

- 5.14 Fire-resistance rated assemblies utilizing INNOVATION MgO Wall Panels are covered under ICC-ES Listing Report [ESL-1610](#).
- 5.15 INNOVATION MgO Wall Panels may be used in non-weather exposed locations where fire-retardant treated wood structural panels are allowed in applicable codes for the end uses noted in this evaluation report.
- 5.16 INNOVATION MgO Wall Panels are manufactured 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 \(24\) 3rd Edition](#), published April 2025; including corrosion resistance Appendix A.
- 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 January 2021).
- 6.3 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 January 2021).
- 6.4 Data in accordance with the [ICC-ES Acceptance Criteria for Proprietary Sheathing Attached to Wood Light-Frame Wall Constructions Used as Shear Walls \(AC269.2\)](#) Dated October 2013 (editorially revised October 2021).
- 6.5 Data in accordance with ASTM E136.
- 6.6 Data in accordance with ASTM E2768 (ASTM E84 extended for an additional 20-minute period).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5418) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 The report holder's contact information is the following:

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TABLE 1—ALLOWABLE TRANSVERSE WIND LOADS^{1,2,3,4}

NOMINAL PANEL THICKNESS (inches)	MAXIMUM SUPPORT SPACING (inches)	FASTENER TYPE	FASTENER ON-CENTER SPACING (Perimeter / Field) (inches)	ALLOWABLE WIND LOAD ⁵ (psf)	
				POSITIVE	NEGATIVE
1/2	16	0.113-inch x 2-inch galvanized ring shank nails	4/6	88	42

For SI 1 inch = 25.4 mm; 1 psf = 47.88 Pa

Footnotes:

¹Minimum nominal 2-inch by 4-inch wood studs spaced a maximum of 16 inches on center.

²Fasteners must be located a minimum of 3/8 inch from panel edges. Fasteners must not be placed within 2 inches of a panel corner.

³All panel edges must be backed by framing or blocking.

⁴Table values assume panels are supported over 3 supports (two-span) and a deflection limit of L/360.

⁵Allowable load values are based on a factor of safety of 3 applied to the average ultimate load.

TABLE 2—FASTENING REQUIREMENTS AND ALLOWABLE SHEAR CAPACITY FOR INNOVATION MGO WALL PANELS USED AS STRUCTURAL SHEATHING FOR WIND OR SEISMIC LOADING UNDER THE IBC AND ENGINEERED DESIGNS UNDER SECTION R301.1.3 OF THE IRC^{1,2,3,4}

NOMINAL PANEL THICKNESS (inches)	FASTENING REQUIREMENTS			WALL HEIGHT (feet)	ALLOWABLE SHEAR CAPACITY ⁵ (plf)
	FASTENER SPECIFICATIONS	PANEL EDGE DISTANCE (inches)	ON-CENTER SPACING (Perimeter / Field) (inches)		
1/2	0.113-inch x 2-inch galvanized ring shank nails	3/8	4/6	8	207

For SI 1 inch = 25.4 mm; 1 plf = 14.6 N/m

Footnotes:

¹Minimum nominal 2-inch by 4-inch wood studs spaced a maximum of 24 inches on center.

²Fasteners must be located a minimum of 3/8 inch from panel edges. Fasteners must not be placed within 2 inches of a panel corner.

³All panel edges must be backed by framing or blocking.

⁴Aspect ratio (height:length) must be no greater than 2:1.

⁵Allowable Shear Capacity is based on wet test assembly performance.

TABLE 3—EVALUATION OF CORROSION EFFECTS FOR INNOVATION MGO 1/2-INCH-THICK WALL PANELS IN CONTACT WITH COMMON CONSTRUCTION METALS

END USE ¹	METAL TYPE
Interior Walls, Exterior Walls in Non-Coastal Regions, Interior Wet Areas, or Exterior Walls in Coastal Regions	G90 (Z120) Zinc-coated Galvanized Cold-Formed Steel (ASTM A653)
	G60 (Z180) Zinc-coated Galvanized Cold-Formed Steel (ASTM A653)
	G40 (Z275) Zinc-coated Galvanized Cold-Formed Steel (ASTM A653)
	85-15 Red Brass
	2024-T3 Aluminum Alloy

Footnotes:

¹End Use options as defined below:

Interior Walls are walls that do not fall under the definition of "Exterior Walls" that are fully contained within the conditioned interior space, outside of wet areas.

Exterior Walls in Non-Coastal Regions are walls, meeting the definition in Section 202 of the IBC, including fire-resistance rated walls located more than 3,000 feet from the shoreline of a body of saltwater. The MgO sheets shall be covered by the weather-resistive envelope. Interior Wet Areas are areas defined in IBC Section 2509.

Exterior Walls in Coastal Regions are walls meeting the definition in Section 202 of the IBC, including fire-resistance rated walls, in structures located less than 3,000 feet from the shoreline of a body of saltwater. The MgO sheets shall be protected by the weather-resistive envelope.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

Section: 06 16 26—Underlayment

DIVISION: 09 00 00—FINISHES

Section: 09 28 15—Magnesium Oxide Backing Panels

REPORT HOLDER:

US MGO COMPANY, LLC

EVALUATION SUBJECT:

INNOVATION MGO WALL PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the INNOVATION MgO Wall Panels, described in ICC-ES evaluation report [ESR-5418](#), have 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:

- 2023 *City of Los Angeles Building Code* ([LABC](#))
- 2023 *City of Los Angeles Residential Code* ([LARC](#))

2.0 CONCLUSIONS

The INNOVATION MgO Wall Panels, described in Sections 2.0 through 7.0 of the evaluation report [ESR-5418](#), comply with the LABC Chapters 6, 7, 8, 14 and 23 and the LARC Chapters 3, 6 and 7, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The INNOVATION MgO Wall Panels described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-5418](#).
- The design, installation, conditions of use and identification are in accordance with the 2021 *International Building Code*® (IBC) or 2021 *International Residential Code*® (IRC) provisions, as applicable, noted in the evaluation report [ESR-5418](#).
- The design, installation and inspection are in accordance with the additional requirements of LABC Chapters 16, 17 and 23, as applicable.
- Under the LABC and LARC the panels shall not be used as part of the lateral force resisting system.

This supplement expires concurrently with the evaluation report ESR-5418, issued February 2025 and revised April 24, 2025.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

Section: 06 16 26—Underlayment

DIVISION: 09 00 00—FINISHES

Section: 09 28 15—Magnesium Oxide Backing Panels

REPORT HOLDER:

US MGO COMPANY, LLC

EVALUATION SUBJECT:

INNOVATION MGO WALL PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the INNOVATION MgO Wall Panels, described in ICC-ES evaluation report ESR-5418, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 California Building Code (CBC)

For evaluation of applicable Chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The INNOVATION MgO Wall Panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-5418, comply with CBC Chapters 6, 7, 8, 14 and 23, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and additional requirements of CBC Chapters 16, 17 and 23, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The INNOVATION MgO Wall Panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-5418, comply with CRC Chapters 3, 6 and 7 provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and additional requirements of CRC Chapters 3, 6 and 7, as applicable.

This supplement expires concurrently with the evaluation report ESR-5418, issued February 2025 and revised April 24, 2025.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

Section: 06 16 26—Underlayment

DIVISION: 09 00 00—FINISHES

Section: 09 28 15—Magnesium Oxide Backing Panels

REPORT HOLDER:

US MGO COMPANY, LLC

EVALUATION SUBJECT:

INNOVATION MGO WALL PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that INNOVATION MgO Wall Panels, described in ICC-ES evaluation report ESR-5418, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 Florida Building Code—Building
- 2023 Florida Building Code—Residential

2.0 CONCLUSIONS

The INNOVATION MgO Wall Panels, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-5418, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-5418 for the 2021 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, with the following condition:

- Use on exterior walls requires the panels to be protected with a water-resistive barrier in accordance with Section 1403.2 of the *Florida Building Code—Building* or Section R703.2 of the *Florida Building Code—Residential*, as applicable.

Use of the INNOVATION MgO Wall Panels has been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* with the following conditions:

- Installation of the INNOVATION MgO Wall Panels must be in accordance with Section 4.2.1.1 of the evaluation report ESR-5418.
- The allowable positive and negative wind loads must not exceed 38 psf (1.82 kPa).

In addition to the data noted in Section 6.0 of the evaluation report ESR-5418, data in accordance with *Florida Building Code Test Protocols for High-Velocity Hurricane Zones* TAS 202 and TAS 203 (without TAS 201 Impact Testing performed) was submitted. Compliance with TAS 203 requires that INNOVATION MgO Wall Panels are installed over the exterior side of exterior wall assemblies with construction in accordance with *Florida Building Code—Building* Section 1626.4.

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).

This supplement expires concurrently with the evaluation report ESR-5418, issued February 2025 and revised April 24, 2025.