

## ICC Design No. MOS-1610-05

**ESL-1610**

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**Applicant:** US MGO COMPANY, LLC

**Product:** INNOVATION MGO WALL PANELS

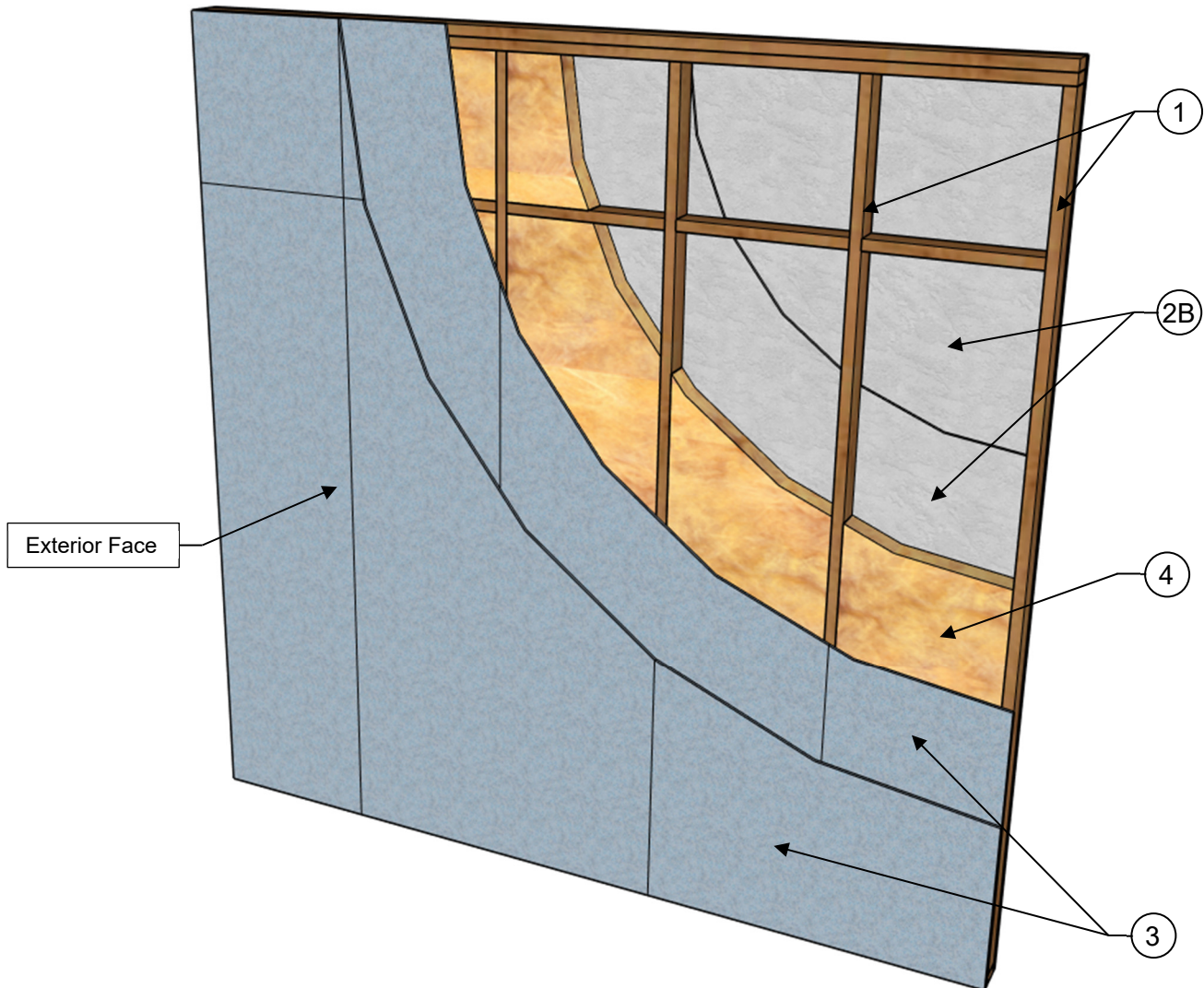
**Standard:** ASTM E119 (UL 263)

**Assembly**

**Rating:** 2-Hour

**Load:** Load Bearing (100% Design Load) – See Conditions of Listing Item #4

MOS = Magnesium Oxide Sheathing



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## COMPONENTS OF CONSTRUCTION:

ITEM NO.	COMPONENTS	MATERIALS
1	Wood Framing—	<p>Minimum 2-inch by 4-inch (50.8 mm by 101.6 mm) wood studs, with a governing slenderness ratio (<math>l_e/d</math>) of 33, spaced maximum 24 inches (609.6 mm) on center, with blocking installed in the weak-axis direction, are secured to top and bottom plates with 3-inch (76.2 mm) long x 0.131-inch (3.33 mm) diameter smooth shank framing nails. A double top plate is secured to the first top plate with 3-inch (76.2 mm) long x 0.131-inch (3.33 mm) diameter nails spaced 16 inches (406.4 mm) on center. Full-depth blocking is installed between each stud 24 inches (609.6 mm) from the top of the wall assembly and 24 inches (609.6 mm) from the bottom of the wall assembly and secured with 3-inch (76.2 mm) long x 0.131-inch (3.33 mm) diameter nails.</p> <p>Note: See Condition of Listing Item 4 of <a href="#">ESL-1610</a>.</p>
2	<p>Interior Sheathing—</p> <p>Use either A or B</p>	<p><b>A — Interior Sheathing (MgO) –</b> Two layers of nominal <math>1/2</math>-inch (12 mm actual) thick INNOVATION MgO Wall Panels are secured directly to the base wall system framing, on the interior side of the wall assembly.</p> <p>The base layer must be secured to the framing using minimum <math>1\ 1/4</math>-inch (31.8 mm) long No. 8 coarse thread, flat wafer head cement board screws spaced at 8 inches (203.2 mm) on center along the perimeter and in the field of the panel. Base layer may be installed vertically or horizontally to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly by a minimum of one stud cavity. All horizontal seams must be backed by blocking and staggered from one side of the assembly to the opposite sides of the assembly by a minimum of 12 inches (304.8 mm).</p> <p>The face layer, with vertical and horizontal panel joints staggered from the base layer, must be secured to the framing using <math>1\ 5/8</math>-inch (41.3 mm) long No. 8 coarse thread, flat wafer head cement board screws spaced at 8 inches (203.2 mm) on center along the perimeter and in the field, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Face layer may be installed vertically or horizontally to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly by a minimum of one stud cavity. INNOVATION MgO Wall Panel edge joints are permitted to be left uncovered without joint compound. Fastener heads are permitted to be left exposed.</p> <p><b>B — Interior Sheathing (GWB) –</b> Two layers of minimum <math>5/8</math>-inch (15.9 mm) Type X or Type C gypsum wallboard, complying with ASTM C1396, are secured directly to the base wall system framing, on the interior side of the wall assembly.</p> <p>The base layer must be secured to the framing using minimum <math>1\ 3/8</math>-inch (34.9 mm) long Type W screws (minimum <math>3/4</math>-inch (19.1 mm) fastener penetration into framing members) spaced at 8 inches (203.2 mm) on center along the perimeter and in the field of the panel. Gypsum wallboard must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly.</p> <p>The face layer, with vertical panel joints staggered from the base layer, must be secured to the framing using <math>1\ 7/8</math>-inch (47.6 mm) long Type W screws (minimum <math>5/8</math>-inch (15.9 mm) fastener penetration into framing members) spaced at 8 inches (203.2 mm) on center along the perimeter and in the field, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Face layer must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly by a minimum of one stud cavity. All face layer sheathing joints edge joints must be treated with two coats of joint compound with nominal 2-inch wide paper tape embedded in first layer of compound over all joints. All fastener heads must be covered with one layer of joint compound.</p>
3	Exterior Sheathing—	<p>Two layers of nominal <math>1/2</math>-inch (12 mm actual) thick INNOVATION MgO Wall Panels are secured directly to the base wall system framing, on the interior side of the wall assembly.</p> <p>The base layer must be secured to the framing using minimum <math>1\ 1/4</math>-inch (31.8 mm) long No. 8 coarse thread, flat wafer head cement board screws spaced at 8 inches (203.2 mm) on center along the perimeter and in the field of the panel. Base layer must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly by a minimum of one stud cavity. All horizontal seams must be backed by blocking and staggered from one side of the assembly to the opposite sides of the assembly by a minimum of 12 inches (304.8 mm).</p> <p>The face layer, with vertical and horizontal panel joints staggered from the base layer, must be secured to the framing using <math>1\ 5/8</math>-inch (41.3 mm) long No. 8 coarse thread, flat wafer head cement board screws spaced at 8 inches (203.2 mm) on center along the perimeter and in the field, with the face layer screws staggered 4 inches (101.6 mm) from the base layer screws. Face layer must be installed vertically to the studs. All vertical seams must fall on studs and must be staggered from one side of the assembly to the opposite sides of the assembly by a minimum of one stud cavity. INNOVATION MgO Wall Panel edge joints are permitted to be left uncovered without joint compound. Fastener heads are permitted to be left exposed.</p>

ITEM NO.	COMPONENTS	MATERIALS
4	<b>Cavity Insulation—</b>  Use either A or B	<b>A —</b> Minimum R-13 fiberglass batt insulation, bearing the UL Classification Marking for surface burning and/or fire resistance, with nominal thickness of 3 1/2-inch (88.9 mm) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.  <b>B —</b> Minimum R-13 mineral wool insulation, bearing the UL Classification Marking for surface burning and/or fire resistance, with a nominal thickness of 3 1/2-inch (88.9 mm) and a minimum density of 2.0 lbs./ft <sup>3</sup> (32 kg/m <sup>3</sup> ) is friction-fit into each stud cavity. The insulation thickness must match the stud cavity depth.
5	<b>Exterior Facing Assembly (Not Shown)—</b>	Where the assembly is used as an exterior wall, any exterior facing may be included, as authorized by the authority having jurisdiction, and must be installed in accordance with the manufacturer's installation instructions.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbs./ft<sup>3</sup> = 16.01 kg/m<sup>3</sup>.