



CSI: DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 16 00—Sheathing
Section: 06 16 23—Subflooring
Section: 06 16 26—Underlayment

Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the listee's quality system.

Product: EXACOR™: NOMINAL 1/2-INCH (12 MM ACTUAL) THICK AND 3/4-INCH (20 MM ACTUAL) THICK MAGNESIUM OXIDE SHEATHING PANELS

Listee: HUBER ENGINEERED WOODS LLC

Evaluation: EXACOR™: Nominal 1/2-inch (12 mm actual) thick and 3/4-inch (20 mm actual) thick magnesium oxide sheathing panels were evaluated based as a building-material component on tested floor/ceiling assemblies described in the Design Listings, and tested in accordance with the following standards:

- ASTM E90-09(2016) and ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- ASTM E492-09(2016)e1 and ASTM E492-09, Standard Test Method for Laboratory Measurements of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.

Findings: Evaluation of EXACOR™ nominal 1/2-inch (12 mm actual) and 3/4-inch (20 mm actual) thick magnesium oxide sheathing panels, when used as underlayment and subfloor components of floor/ceiling assemblies, is based on testing in accordance with the applicable test methods as noted in each ICC Design No., and as referenced in the applicable sections of the following code editions:

- 2021 and 2018 *International Building Code*®
Applicable Sections: 1206.2, 1206.3

Identification:

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, the ICC-ES evaluation report number ([ESR-4635](#)) and/or the ICC-ES listing report number ([ESL-1365](#)) and when applicable, the ICC-ES listing mark.
2. The report holder's contact information is the following:

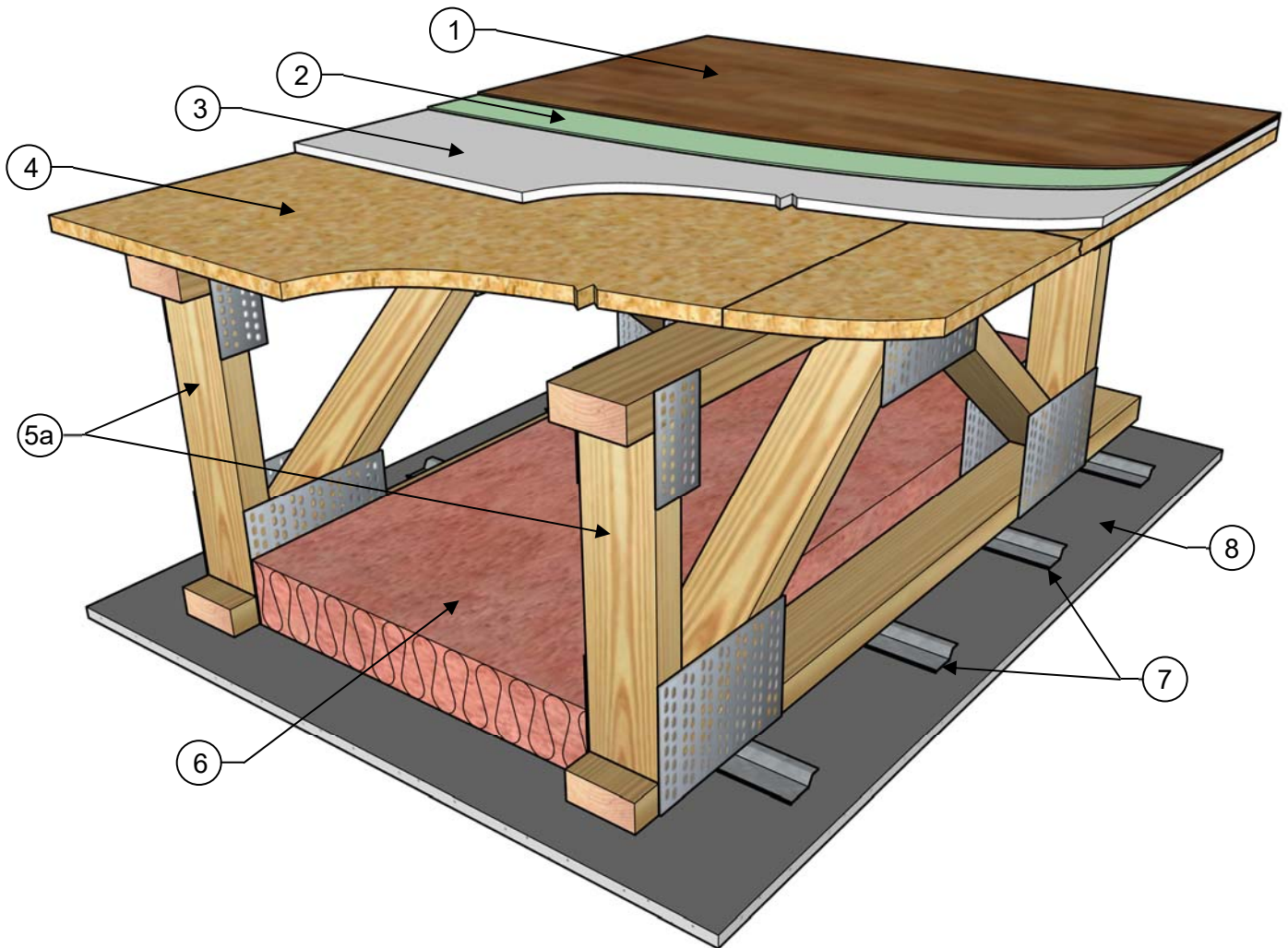
HUBER ENGINEERED WOODS LLC
10925 DAVID TAYLOR DRIVE, SUITE 300
CHARLOTTE, NORTH CAROLINA 28262
(800) 933-9220
www.huberwood.com

Installation: The EXACOR™: Nominal 1/2-inch (12 mm actual) and 3/4-inch (20 mm actual) thick magnesium oxide sheathing panels must be installed in accordance with the Huber Engineered Woods LLC published installation instructions and applicable codes.

Conditions of Listing:

1. The listing report addresses only conformance with the standards and code sections noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing report applies only to the materials tested and as submitted for review by ICC-ES. Evaluation for fire-resistance is outside the scope of this report.
4. Where the acoustical performance of a system has been tested using the minimum panel thickness available, panels of greater thickness (more mass) shall be permitted to be used in lieu of the tested minimum thickness to achieve the same acoustical performance ratings in accordance with GA 600—2018 (22nd Ed.) General Explanatory Note 6 (Acoustical Performance of Systems).
5. Huber Engineered Woods LLC's EXACOR™ Nominal 1/2-inch (12 mm actual) and 3/4-inch (20 mm actual) thick magnesium oxide sheathing panels are manufactured in Nantong, China under a quality control program with inspections by ICC-ES.

Applicant: HUBER ENGINEERED WOODS LLC
Product: EXACOR™: NOMINAL 1/2-INCH (12 MM ACTUAL) THICK MAGNESIUM OXIDE SHEATHING PANELS
Standard: ASTM E90 / ASTM E492
Acoustical Performance Ratings: (See MOS-1365-01 Table 1)



MOS-1365-01 TABLE 1 – ACOUSTICAL PERFORMANCE RATINGS FOR 1/2-INCH EXACOR™ UNDERLAYMENT

| | | | STC / IIC Rating | | | | | | | | | | | | |
|-------------------------------------|--------|---|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Item # | Component | 58 / 52 | 59 / 54 | 59 / 50 | 58 / 53 | 59 / 55 | 59 / 51 | 59 / 54 | 60 / 56 | 60 / 52 | 58 / 55 | 59 / 57 | 59 / 57 | 58 / 58 |
| Floor Covering | 1a | 2 mm LVT | X | X | X | X | X | X | | | | X | | | |
| | 1b | 5.5 mm LVP | | | | | | | X | X | X | | X | | |
| | 1c | 3/8-inch Engineered Wood Flooring | | | | | | | | | | | | X | |
| | 1d | 5.5 mm Carpet Tile | | | | | | | | | | | | | X |
| | 2 | 1.4 mm Sound Attenuation Mat | | | | X | X | X | | | | | | | |
| Subfloor & Framing Assembly | 3 | Min. 1/2-inch EXACOR™ Underlayment | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | 4 | 23/32-inch Wood Structural Panel | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | 5a | 18-inch Deep Wood Truss (@ 24-inches on center) | X | X | X | X | X | X | X | X | X | | | | |
| | 5b | 11 7/8-inch Deep Wood I-Joist (@ 24-inches on center) | | | | | | | | | | X | X | X | X |
| Insulation | 6 | R-13 Glass Fiber | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Furring Spacing (Resilient Channel) | 7a | 12-inches on center | | | X | | | X | | | X | X | X | X | X |
| | 7b | 16-inches on center | X | X | | X | X | | X | X | | | | | |
| Ceiling Panel | 8a | 5/8-inch Type C Gypsum Panel | | X | X | | X | X | | X | X | | | | |
| | 8b | 5/8-inch Type ULIX™ Gypsum Panel | X | | | X | | | X | | | | | | |
| | 8c | (2) Layers of 5/8-inch Type C Gypsum Panel | | | | | | | | | | X | X | X | X |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pcf = 16.01 kg/m³.

Footnotes:
See Components of Construction for assembly component details.

COMPONENTS OF CONSTRUCTION:**1. Floor Covering –**

- a. 2 mm thick (0.079-inch) Luxury Vinyl Tile (LVT) – Adhered. The LVT floor covering must be adhered to the underlayment or sound attenuation mat underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.
- b. 5.5 mm thick (0.217-inch) Luxury Vinyl Plank (LVP) – Floated. The LVP floor covering is allowed to be loose laid.
- c. $\frac{3}{8}$ -inch (9.5 mm) Engineered Wood Flooring. The Engineering Wood Flooring is allowed to be loose laid.
- d. 5.5 mm thick (0.217-inch) Carpet Tile. The Carpet Tile floor covering must be adhered to the underlayment underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.

2. Sound Attenuation Mat – 1.4 mm thick (0.055-inch) Sound Attenuation Mat. The floor covering must be adhered to the underlayment underneath using an approved pressure sensitive adhesive. Adhesive must be allowed to cure per manufacturer's specifications**3. Underlayment Panel –** Minimum $\frac{1}{2}$ -inch (12 mm actual) thick EXACOR™ Underlayment Panel. Panel must be fastened with 9D nails and have a minimum embedment length of $\frac{7}{8}$ -inch (22.2 mm), spaced a maximum of 12-inches (305 mm) on center. Fasteners spaced $\frac{1}{2}$ -inch (12.7 mm) from panel edges and no closer than 2-inches (50.8 mm) from panel corners. Panel seams offset from subfloor by a minimum of 4-inches. (102 mm).**4. Subfloor Panel –** $2\frac{3}{32}$ -inch (18.3 mm) Wood Structural Panel. Panel must be fastened with 2- $\frac{3}{8}$ -inch (60.3 mm) long 9D nails, spaced maximum 6-inches (152 mm) on center along the panel edges, and spaced 12-inches (305 mm) on center in the field of the panel.**5. Floor Framing –**

- a. 18-inch (457 mm) Deep Open Web Truss, spaced at a maximum of 24-in. (610 mm) on center.
- b. 11- $\frac{7}{8}$ -inch (301.6 mm) Deep Wood I-Joist, spaced at a maximum of 24-in. (610 mm) on center.

6. Insulation – Minimum 3- $\frac{1}{2}$ -inch (88.9 mm) Non-combustible, R-13 Fiberglass Insulation complying with Type I per ASTM C665 must be installed in the cavity between framing members.**7. Furring Type (Resilient Channel) –**

- a. $\frac{1}{2}$ -inch (12.7 mm) Resilient Channel (ClarkDietrich RC Deluxe). Channel must be installed perpendicular to framing members and spaced a maximum of 12-inches (305 mm) on center.
- b. $\frac{1}{2}$ -inch (12.7 mm) Resilient Channel (ClarkDietrich RC Deluxe). Channel must be installed perpendicular to framing members and spaced a maximum of 16-inches (406 mm) on center.

8. Gypsum Panel –

- a. One layer of $\frac{5}{8}$ -inch (15.9 mm) thick USG Sheetrock Brand Firecode C Core gypsum board must be secured to the channels using 1-inch (25.4 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center. The panel edge joints must be sealed and covered with an approved pressure sensitive tape.
- b. One layer of $\frac{5}{8}$ -inch (15.9 mm) thick USG Sheetrock Brand EcoSmart (ULIX™) gypsum board must be secured to the channels using 1-inch (25.4 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center. The panel edge joints must be sealed and covered with an approved pressure sensitive tape.
- c. Two layers of $\frac{5}{8}$ -inch (15.9 mm) thick USG Sheetrock Brand Firecode C Core gypsum board must be secured to the channels. The base layer must be secured to the channels using 1-inch (25.4 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center. The face layer, with panel joints staggered from the base layer, must be secured to the channels using 1 $\frac{5}{8}$ -inch (41.3 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center, with the face layer screws staggered from the base layer screws. The panel edge joints of the base and face layers must be sealed and covered with an approved pressure sensitive tape.

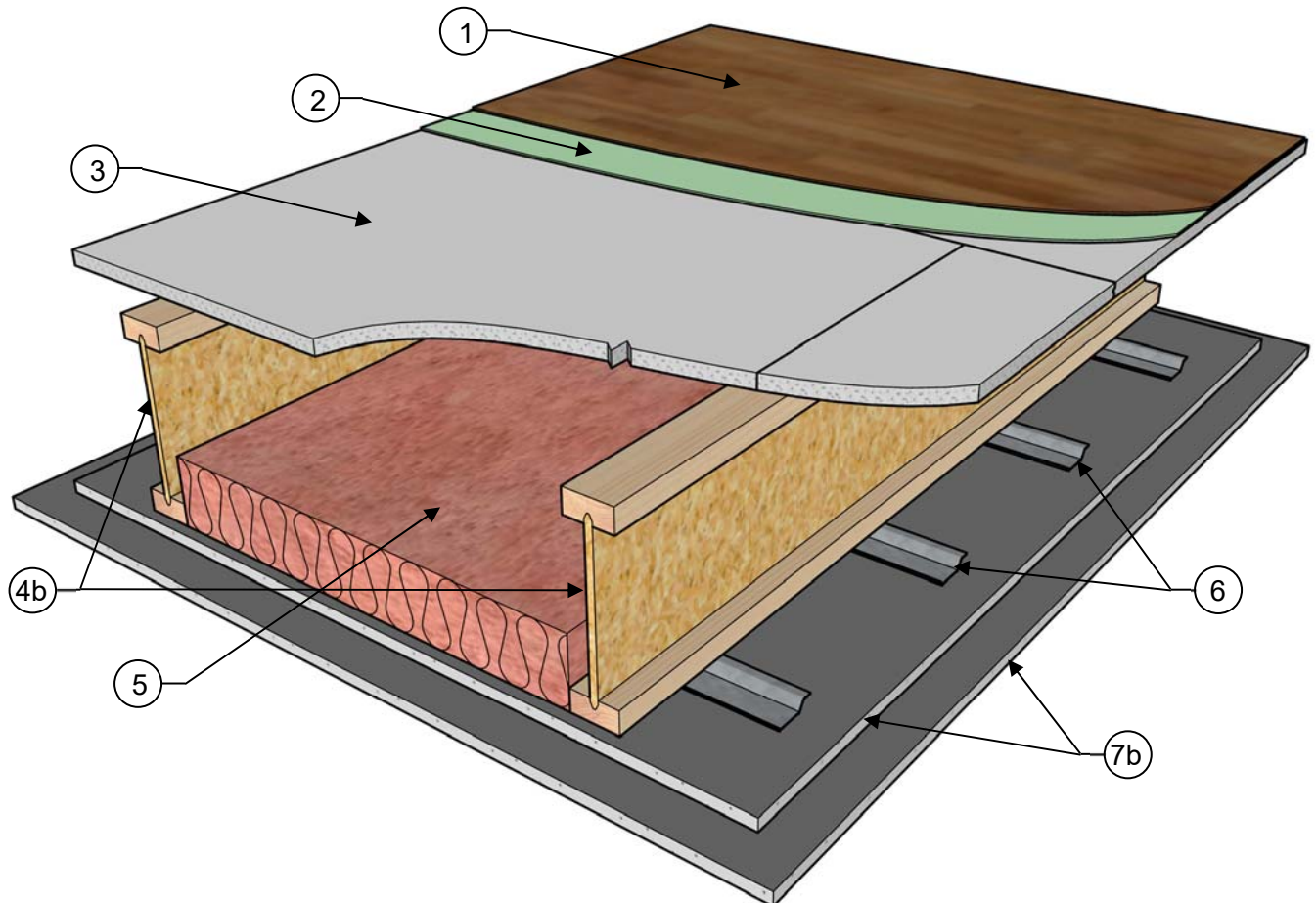
Applicant: HUBER ENGINEERED WOODS LLC

Product: EXACOR™: NOMINAL 3/4-INCH (20 MM ACTUAL) THICK MAGNESIUM OXIDE SHEATHING PANELS

Standard: ASTM E90 / ASTM E492

**Acoustical
Performance**

Ratings: (See MOS-1365-02 Table 1)



MOS-1365-02 TABLE 1 – ACOUSTICAL PERFORMANCE RATINGS FOR 3/4-INCH EXACOR™ SUBFLOOR PANEL

| | Item # | Component | STC / IIC Rating | | | | | | | |
|-------------------------------------|--------|---|------------------|---------|---------|---------|---------|---------|---------|---------|
| | | | 58 / 50 | 58 / 50 | 60 / 55 | 58 / 51 | 56 / 52 | 57 / 50 | 57 / 51 | 56 / 54 |
| Floor Covering | 1a | 2 mm LVT | X | | | | X | | | |
| | 1b | 2.5 mm LVT | | | | X | | | | |
| | 1c | 5.2 mm LVP | | | X | | | | | |
| | 1d | 5.5 mm LVP | | X | | | | X | | |
| | 1e | 5.5 mm Carpet Tile | | | | | | | | X |
| | 1f | 3/8-inch Engineered Wood Flooring | | | | | | | X | |
| | 2a | 1.4 mm Sound Attenuation Mat | X | | | | X | | | |
| | 2b | 1.5 mm Sound Attenuation Mat | | | X | | | | | |
| | 2c | 2.1 mm Sound Attenuation Mat | | X | | | | | | |
| | 2d | 4.3 mm Sound Attenuation Mat | | | | X | | | | |
| Subfloor & Framing Assembly | 3 | 3/4-inch EXACOR™ Subfloor | X | X | X | X | X | X | X | X |
| | 4a | 18-inch Deep Wood Truss (@ 24-inches on center) | X | X | X | X | | | | |
| | 4b | 11 7/8-inch Deep Wood I-Joist (@ 24-inches on center) | | | | | X | X | X | X |
| Insulation | 5 | R-13 Glass Fiber | X | X | X | X | X | X | X | X |
| Furring Spacing (Resilient Channel) | 6a | 12-inches on center | X | X | | | X | X | X | X |
| | 6b | 16-inches on center | | | X | X | | | | |
| Ceiling Panel | 7a | 5/8-inch Type C Gypsum Panel | X | X | X | X | | | | |
| | 7b | (2) Layers of 5/8-inch Type C Gypsum Panel | | | | | X | X | X | X |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pcf = 16.01 kg/m³.

Footnotes:
See Components of Construction for assembly component details.

COMPONENTS OF CONSTRUCTION:**1. Floor Covering –**

- a. 2 mm thick (0.079-inch) Luxury Vinyl Tile (LVT) – Adhered. The LVT floor covering must be adhered to the subflooring underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.
- b. 2.5 mm thick (0.098-inch) Luxury Vinyl Tile (LVT) – Adhered. The LVT floor covering must be adhered to the subflooring underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.
- c. 5.2 mm thick (0.205-inch) Luxury Vinyl Plank (LVP) – Floated. The LVP floor covering is allowed to be loose laid.
- d. 5.5 mm thick (0.217-inch) Luxury Vinyl Plank (LVP) – Floated. The LVP floor covering is allowed to be loose laid.
- e. 5.5 mm thick (0.217-inch) Carpet Tile. The Carpet Tile floor covering must be adhered to the subflooring underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.
- f. $\frac{3}{8}$ -inch (9.5 mm) Engineered Wood Flooring. The Engineering Wood Flooring is allowed to be loose laid.

2. Sound Attenuation Mat –

- a. 1.4 mm thick (0.055-inch) Sound Attenuation Mat. The floor covering must be adhered to the subflooring underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.
- b. 1.5 mm thick (0.059-inch) Sound Attenuation Mat (Foam Noise Reduction Underlayment). The floor covering is allowed to be loose laid.
- c. 2.1 mm thick (0.083-inch) Sound Attenuation Mat (Rubber Underlayment). The floor covering is allowed to be loose laid.
- d. 4.3 mm thick (0.169-inch) Sound Attenuation Mat (Rubber Underlayment). The floor covering must be adhered to the subflooring underneath using an approved adhesive. Adhesive must be allowed to cure per manufacturer's specifications.

3. **Subfloor Panel** – $\frac{3}{4}$ -inch (20 mm) thick EXACOR™ Subfloor Panel. Panel must be fastened with 2- $\frac{3}{8}$ -inch (60.3 mm) long 9D nails, spaced maximum 6-inches (152 mm) on center along the panel edges, and spaced 12-inches (305 mm) on center in the field of the panel.

4. Floor Framing –

- a. 18-inch (457 mm) Deep Open Web Truss, spaced at a maximum of 24-inches (610 mm) on center.
- b. 11- $\frac{7}{8}$ -inch (301.6 mm) Deep Wood I-Joist, spaced at a maximum of 24-inches (610 mm) on center.

5. **Insulation** – Minimum 3- $\frac{1}{2}$ -inch (88.9 mm) Non-combustible, R-13 Fiberglass Insulation complying with Type I per ASTM C665 must be installed in the cavity between framing members.

6. Furring Type (Resilient Channel) –

- a. $\frac{1}{2}$ -inch (12.7 mm) Resilient Channel (ClarkDietrich RC Deluxe). Channel must be installed perpendicular to framing members and spaced a maximum of 12-inches (305 mm) on center.
- b. $\frac{1}{2}$ -inch (12.7 mm) Resilient Channel (ClarkDietrich RC Deluxe). Channel must be installed perpendicular to framing members and spaced a maximum of 16-inches (406 mm) on center.

7. Gypsum Panel –

- a. One layer of $\frac{5}{8}$ -inch (15.9 mm) thick USG Sheetrock Brand Firecode C Core gypsum board must be secured to the channels using 1-inch (25.4 mm) long Type S bugle head screws, spaced a maximum of 8-inches (203 mm) on center. The panel edge joints must be sealed and covered with an approved pressure sensitive tape.
- b. Two layers of $\frac{5}{8}$ -inch (15.9 mm) thick USG Sheetrock Brand Firecode C Core gypsum board must be secured to the channels. The base layer must be secured to the channels using 1-inch (25.4 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center. The face layer, with panel joints staggered from the base layer, must be secured to the channels using 1 $\frac{5}{8}$ -inch (41.3 mm) long Type S bugle head screws, spaced a maximum of 12-inches (305 mm) on center, with the face layer screws staggered from the base layer screws. The panel edge joints of the base and face layers must be sealed and covered with an approved pressure sensitive tape.