

BXUV.U424
Fire Resistance Ratings - ANSI/UL 263

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Listed or Classified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered as Classified, Listed, or Recognized.

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See General Information for Fire Resistance Ratings - ANSI/UL 263

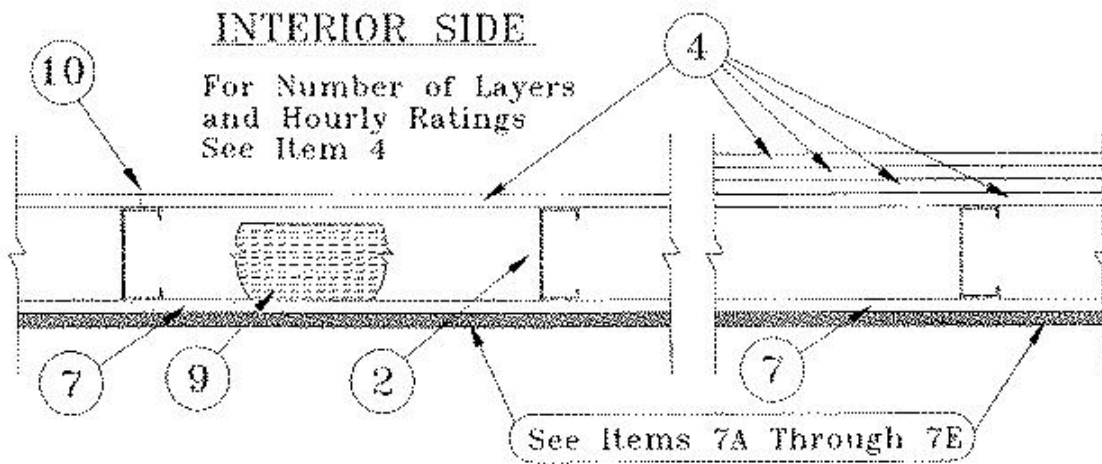
Design No. U424

July 30, 2007

(Exposed to Fire on Interior Face Only)

Bearing Wall Ratings — 45 min, 1, 1-1/2 or 2 Hr (See Item 4)

Load Restricted for Canadian Applications — See Guide BXUV7



1. Floor and Ceiling Runners — (Not shown) — Channel shaped, fabricated from min 0.0329 in. thick, bare metal thickness (No. 20 MSG) corrosion-protected steel, that provide a sound structural connection between steel studs and adjacent assemblies such as floors, ceilings and/or other walls. Attached to floor and ceiling assemblies with steel fasteners spaced not greater than 24 in. OC.

2. Steel Studs — Min 0.0329 in. thick, bare metal thickness (No. 20 MSG) corrosion-protected steel studs, min 3-1/2 in. wide, cold formed, designed in accordance with the current edition of the Specification for the Design of Cold-Formed Steel Structural Members by the American Iron and Steel Institute (AISI). All design details enhancing the structural integrity of

the wall assembly, including the axial design load of the studs, shall be as specified by the steel stud designer and/or producer, and shall meet the requirements of all applicable local code agencies. The max stud spacing shall not exceed 24 in. OC. (16 in. OC when Item 7B is used). Studs attached to floor and ceiling runners with 1/2 in. long Type S-12 steel screws on both sides of the studs or by welded or bolted connections designed in accordance with the AISI specifications.

2A. **Steel Studs** — (For Use With Item 4A) - Channel shaped, fabricated from min 20 MSG (0.0327 in. thick) corrosion-protected or galv steel, 3-1/2 in. min width, min 1-1/2 in. flanges and 1/4 in. return, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

3. **Lateral Support Members** — (Not shown) — Where required for lateral support of studs, support shall be provided by means of steel straps, channels or other similar means as specified in the design of a particular steel stud wall system.

4. **Gypsum Board*** — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. When used in widths other than 48 in., gypsum panels to be installed horizontally. The thickness and number of layers and percent of design load for the 45 min, 1 hr, 1-1/2 hr, and 2 hr ratings are as follows:

Wallboard Protection on Interior Side of Wall

Rating	No. of Layers & Thkns of Panel	% of Design Load
45 Min	1 layer, 5/8 in. thick	100
1 hr	2 layers, 1/2 in. thick	100
1-1/2 hr	2 layers, 5/8 in. thick	100
2 hr	3 layers, 1/2 in. thick	100
2 hr	2 layers, 3/4 in. thick	100

CANADIAN GYPSUM COMPANY — 1/2 in. thick Type AR, C, IP-AR, IP-X2, IPC-AR, or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 3/4 in. thick Types AR, IP-AR, IP-X3, ULTRACODE

UNITED STATES GYPSUM CO — 1/2 in. thick Type AR, C, IP-AR IP-X2, IPC-AR, or WRC ; 5/8 in. thick Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 3/4 in. thick Types AR, IP-AR, IP-X3, ULTRACODE

USG MEXICO S A D E C V — 1/2 in. thick Type AR, C, IP-AR, IP-X2, IPC-AR, or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 3/4 in. thick AR, IP-AR, IP-X3, ULTRACODE

4A. **Gypsum Board*** — (As an alternate to Item 4 when used as the base layer, For direct attachment only) - Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

RAY-BAR ENGINEERING CORP — Type RB-LBG

5. **Fasteners** — (Not shown) — Type S-12 steel screws used to attach panels to runners (Item 1) and studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 12 in. OC when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

6. **Building Paper** — (Not shown) — No. 15 asphalt felt or equivalent as required.

7. **Gypsum Sheathing** — For exterior walls, 1/2 or 5/8 in. thick exterior regular gypsum sheathing applied vertically or horizontally, attached to studs and runners with 1 in. long Type S12 steel screws spaced 12 in. OC along studs and runners. One of the following exterior facings shall be applied over the gypsum sheathing.

A. **Siding, Brick or Stucco** — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies. When a min 3-3/4 in. thick brick veneer facing is used, the rating is applicable for exposure on either side. Brick veneer attached to studs with corrugated

metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.

B. Cementitious Backer Units* — 1/2 or 5/8 in. thick panels, attached to steel studs over gypsum sheathing with 1-5/8 in. long, Type S-12, corrosion resistant, wafer-head steel screws, spaced 8 in. OC. Studs spaced a max of 16 in. OC. Joints covered with glass fiber mesh tape.

UNITED STATES GYPSUM CO — Durock Exterior Cement Board or Durock Brand Cement Board.

C. Foamed Plastic* — Aged expanded polystyrene (EPS) board per ASTM C578, with a nom density not less than 1 pcf, R-value 3.8 min per in. with a flame spread of less than 25 and a smoke developed of less than 450, adhered to the gypsum sheathing (Item 7) or to the cementitious backer units (Item 7B) with USG Exterior Insulation Board Adhesive. See **Foamed Plastic (BRYX and/or CCVW) Categories** for names of Classified companies.

D. Wall and Partition Facings and Accessories* — Min 3/32 in. thick, applied over the gypsum sheathing (Item 7) or the cementitious backer units (Item 7B) or the insulation board (Item 7C), to embed an open-weave fiberglass mesh (mesh weighing not less than 4.5 oz per sq yd, treated for alkaline resistance). Instructions provided with the product shall be consulted regarding limitations on the use of the product.

UNITED STATES GYPSUM CO — USG Exterior Basecoat

E. Wall and Partition Facings and Accessories* — Min 1/16 in. thick, applied over basecoat (Item 7D). Instructions provided with the product shall be consulted regarding limitations on the use of the product.

UNITED STATES GYPSUM CO — USG Exterior Textured Finish or USG Exterior Stone Finish

8. Furring Channels — (Optional, not shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Type FRX gypsum panels.

9. Batts and Blankets* — (Optional, not shown) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV and/or BZJZ) Categories** for names of Classified companies.

10. Joint Tape and Compound — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of interior face layer. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of interior face layer. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

11. Caulking and Sealants* — (Optional, not shown) — A bead of acoustical sealant applied around the partition perimeter on interior side for sound control.

UNITED STATES GYPSUM CO — Type AS

12. Lead Batten Strips — (Not Shown, For use with Item 4A) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.

13. Lead Discs or Tabs — (Not Shown, For use with Item 4A) - Used in lieu of or in addition to the lead batten strips (Item 12) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. thick lead tabs placed on gypsum boards (Item 4A) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

*Bearing the UL Classification Mark

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[Page Top](#)

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