



## BXUV.U435 Fire Resistance Ratings - ANSI/UL 263

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- 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.

### Fire Resistance Ratings - ANSI/UL 263

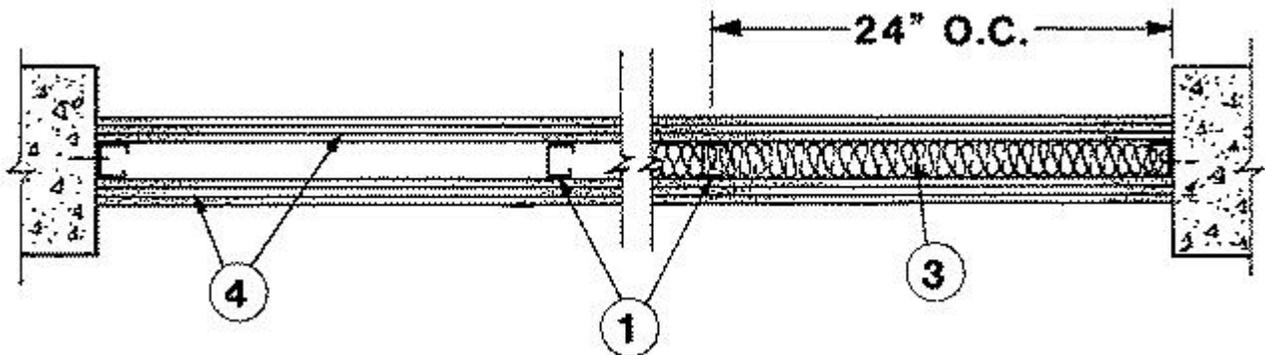
See General Information for Fire Resistance Ratings - ANSI/UL 263

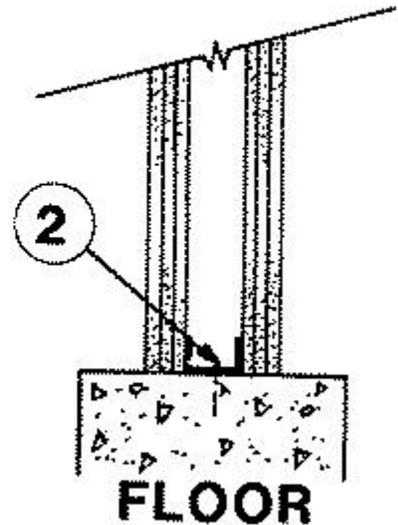
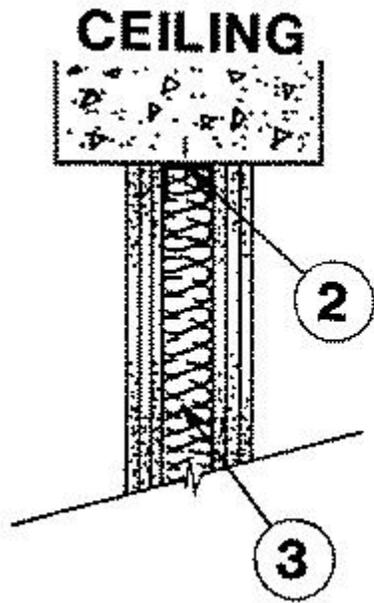
Design No. U435

March 03, 2010

Assembly Rating — 3 Hr or 4 Hr (See Item 4)

Nonbearing Wall





1. **Studs** — Channel-shaped, 1-5/8 in. wide by 1-1/4 in. deep, with 5/16 in. folded back return flange legs. Fabricated from No. 25 MSG galvanized steel. Stud spacing 16 or 24 in. OC. Studs to be cut 1 in. less than assembly height.

1A. **Framing Members\*— Steel Studs** — As an alternate to Item 1 - Channel shaped studs, min 1-5/8 in. wide, spaced a max of 24 in. OC. Studs to be cut 1 in. less than assembly height.

**ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME Framing System

**CONSOLIDATED FABRICATORS CORP,**

**BUILDING PRODUCTS DIV** — Type SUPREME Framing System

**QUAIL RUN BUILDING MATERIALS INC** — Type SUPREME Framing System

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME Framing System

**STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME Framing System

1B. **Framing Members\* - Steel Studs** — Not shown - In lieu of Item 1 — For use with Item 2B, proprietary channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.020 in. thick galv steel. Attached to floor and ceiling with fasteners spaced 24 in. OC max. Studs to be cut 1 in. less than assembly height.

**MARINO\WARE A DIV OF WARE INDUSTRIES**

**INC** — Viper20S™, Viper20D™

1C. **Framing Members\*— Steel Studs** — Not shown - In lieu of Item 1 — For use with Item 2C, proprietary channel shaped steel studs, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.015 in. thick galv steel. Attached to floor and ceiling with fasteners spaced 24 in. OC max. Studs to be cut 1 in. less than assembly height.

**CLARKWESTERN BUILDING SYSTEMS INC** — CW ProSTUD

**DIETRICH INDUSTRIES INC** — DIETRICH ProSTUD

**DMFCWBS L L C** — ProSTUD

1D. **Framing Members\* - Steel Studs** — (As an alternate to Item 1, For use with Item 4C) Channel shaped, fabricated from min 20 MSG 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.

2. **Floor and Ceiling Runners** — Channel-shaped runners, min 1-5/8 in. wide by 1-1/4 in. deep, fabricated from No. 25 MSG galvanized steel. Attached to floor and ceiling with fasteners spaced 24 in. OC max.

2A. **Framing Members\*— Floor and Ceiling Runners** — As an alternate to Item 2 - Channel shaped, min 1-5/8 in. wide, attached to floor and ceiling with fasteners 24 in. OC. max.

**ALLSTEEL & GYPSUM PRODUCTS INC** — Type SUPREME Framing System

**CONSOLIDATED FABRICATORS CORP,**

**BUILDING PRODUCTS DIV** — Type SUPREME Framing System

**QUAIL RUN BUILDING MATERIALS INC** — Type SUPREME Framing System

**SCAFCO STEEL STUD MANUFACTURING CO** — Type SUPREME Framing System

**STEEL CONSTRUCTION SYSTEMS INC** — Type SUPREME Framing System

2B. **Framing Members\* - Floor and Ceiling Runner** — Not shown - In lieu of Item 2 — For use with Item 1B, proprietary channel shaped runners, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**MARINO\WARE A DIV OF WARE INDUSTRIES**

**INC** — Viper20S™ Track, Viper20D™ Track

2C. **Framing Members\*— Floor and Ceiling Runners** — Not shown - In lieu of Item 2 — For use with Item 1C, proprietary channel shaped runners, 1-1/4 in. deep by min 1-5/8 in. wide fabricated from min 0.015 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

**CLARKWESTERN BUILDING SYSTEMS INC** — CW ProTRAK

**DIETRICH INDUSTRIES INC** — DIETRICH ProTRAK

**DMFCWBS L L C** — ProTRAK

2D. **Framing Members\* - Floor and Ceiling Runners** — (Not shown)—For use with Item 1D- Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min width to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

3. **Batts and Blankets\*** — (Optional) — Mineral wool insulation, partially or completely filling stud cavity.

**ROCK WOOL MANUFACTURING CO** — Delta Board.

**THERMAFIBER INC** — Type SAFB.

3A. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0 lb/ft<sup>3</sup>. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of one part adhesive to 6.6 parts fiber to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 2.5 lb/ft<sup>3</sup>.

**U S GREENFIBER L L C** — Cocoon2 Stabilized or Cocoon-FRM (Fire Rated Material)

3B. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 3) and Item 3A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

3C. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 3) - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft<sup>3</sup>.

**INTERNATIONAL CELLULOSE CORP** — Celbar-RL

4. **Gypsum Board\*** — 1/2 in. thick, 4 ft wide with square or tapered edges. **For 4 Hr Rating** Four layers of gypsum board to be used. Inner layers to be applied vertically with joints centered over studs. Outer layer may be applied vertically or horizontally. First layer fastened to each stud with 1 in. long Type S, self-tapping steel screws. Second layer fastened to each stud through the first layer with 1-5/8 in. long, Type S, self-tapping steel screws. Third layer fastened to each stud through the first and second layers with 2-1/4 in. long, Type S, self-tapping steel screws. Fourth layer fastened to each stud through the first, second and third layers with 2-5/8 in. long, Type S, self-tapping steel screws. First layer screws shall be located 5 in. from top and bottom of wall with a maximum spacing of 48 in. O.C. vertically between top and bottom screws. Second and third layer screws shall be located 4 and 3 in., respectively, from the top and bottom of wall with the same vertical spacing as the first layer screws. Fourth layer screws shall be located 2 in. from top and bottom of wall and spaced 12 in. OC vertically. Each fourth layer horizontal board end shall be centered over and secured to the stud with screws spaced 1/2 in. from end joint and 12 in. OC vertically. Board end joints shall be staggered. At board side joints all screws shall be located 1/2in. from the joints. Fourth layer also secured to the second and third layers with 1-1/2in. long, Type G, self-tapping steel screws located midway between studs and 1 in. from the horizontal joint. Joints in each layer of gypsum board to be staggered from the joints in the adjacent layer and on opposite sides of studs.

**For 3 hr rating** — Three layers of gypsum board to be used. Inner layers to be applied vertically with joints centered over studs. Outer layer may be applied vertically or horizontally. First layer fastened to each stud with 1 in. long, Type S, self-tapping steel screws. Second layer fastened to each stud through the first layer with 1-5/8 in. long, Type S, self-tapping steel screws. Third layer fastened to each stud through the first and second layers with 2-1/4 in. long, Type S, self-tapping steel screws. First and second layer screws shall be locate 4 and 3 in. from top and bottom of wall, respectively, with a maximum spacing of 48 in. OC vertically. The third layer screws shall be located 2 in. from top and bottom of wall with a maximum spacing of 12 in. OC vertically. Each third layer horizontal board end shall be centered over and secured to the stud with Type S, self-tapping steel screws spaced 1/2 in. from end joint and 12 in. OC vertically. Third layer, also secured to the first and the second layers with 1-1/2 in. long, Type G, Self-tapping steel screws located midway between studs and 1 in. from the horizontal joint. Board end joints shall be staggered. Vertical board joints to be staggered from the joints in the adjacent layer and on opposite sides of studs.

**AMERICAN GYPSUM CO** — Types AG-C.

**CANADIAN GYPSUM COMPANY** — Types C, IP-X2 IPC-AR.

**CERTAINTED GYPSUM INC** — Type FRPC, ProRoc Type C.

**CERTAINTED GYPSUM CANADA INC** — ProRoc Type C.

**GEORGIA-PACIFIC GYPSUM L L C** — Types 5, DAPC.

**LAFARGE NORTH AMERICA INC** — Type LGFC-C, LGFC-C/A.

**NATIONAL GYPSUM CO** — Types FSK-C, FSW-G, FSW-C, FSMR-C.

**PABCO BUILDING PRODUCTS L L C, DBA**

**PABCO GYPSUM** — Type PG-C.

**TEMPLE-INLAND** — Type TG-C.

**UNITED STATES GYPSUM CO** — Types C, IP-X2, IPC-AR.

**USG MEXICO S A DE C V** — Types C, IP-X2, IPC-AR.

**For 3 hr rating** — Two layers of 3/4 in. thick, 4 ft wide applied to each side of the steel studs. Inner layers to be applied vertically with joints centered over studs and staggered on opposite sides of studs. Outer layers to be applied horizontally with

vertical butt joints staggered from inner layer joints or vertically with joints centered over studs and staggered on opposite sides of studs.

Inner layer secured with 1-1/4 in. long Type S self-drilling, self-tapping steel screws spaced 24 in. OC along the perimeter and in the field. Outer layer, when secured horizontally, secured with 2-1/4 in. long Type S self-drilling, self-tapping steel screws spaced 24 in. OC along the perimeter and in the field along the horizontal joints of the outer layer, 1-1/2 in. long Type G self-drilling, self-tapping steel screws to be applied midway between the studs (24 in. OC) and 1 in. from the longitudinal joint. Outer layer, when secured vertically, secured with 2-1/4 in. long Type S self-drilling, self-tapping steel screws spaced 24 in. OC along the perimeter and in the field.

**CANADIAN GYPSUM COMPANY** — Type IP-X3, ULTRACODE, ULTRACODE SHC or ULTRACODE WRC.

**UNITED STATES GYPSUM CO** — Type IP-X3, ULTRACODE, ULTRACODE SHC or ULTRACODE WRC.

**USG MEXICO S A DE C V** — Type IP-X3, ULTRACODE, ULTRACODE SHC or ULTRACODE WRC.

4A. **Gypsum Board\*** — (As an alternate to Item 4) — 5/8 in. thick. **For 4 hr Rating** — Four layers of gypsum board installed as described in Item 4, with fourth layer screw length increased by 1/4 in. **For 3 hr Rating** — Three layers of gypsum board installed as described in Item 4.

**LAFARGE NORTH AMERICA INC** — Type LGFC-C/A

**NATIONAL GYPSUM CO** — Type FSMR-C.

4B. **Gypsum Board\*** — (As an alternate to Item 4) — 5/8 in. thick. **For 3 hr Rating** — Three layers of gypsum board installed as described in Item 4.

**LAFARGE NORTH AMERICA INC** — Type LGFC6A

4C. **Gypsum Board\*** — (Not Shown) - (As an alternate to Item 4 when used as the base layer on one or both sides of wall. For direct attachment only to steel studs Item 2C) - 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. Gypsum board 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. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads. Paper tape, 2 in. wide, embedded in first layer of compound over all joints.

6. **Lead Batten Strips** — (Not Shown, For Use With Item 4C) - 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 board (Item 4C) and optional at remaining stud locations. Required behind vertical joints.

7. **Lead Discs or Tabs** — (Not Shown, For Use With Item 4C) - Used in lieu of or in addition to the lead batten strips (Item 6) 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. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 4C) 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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