



BXUV.V438 Fire Resistance Ratings - ANSI/UL 263

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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.

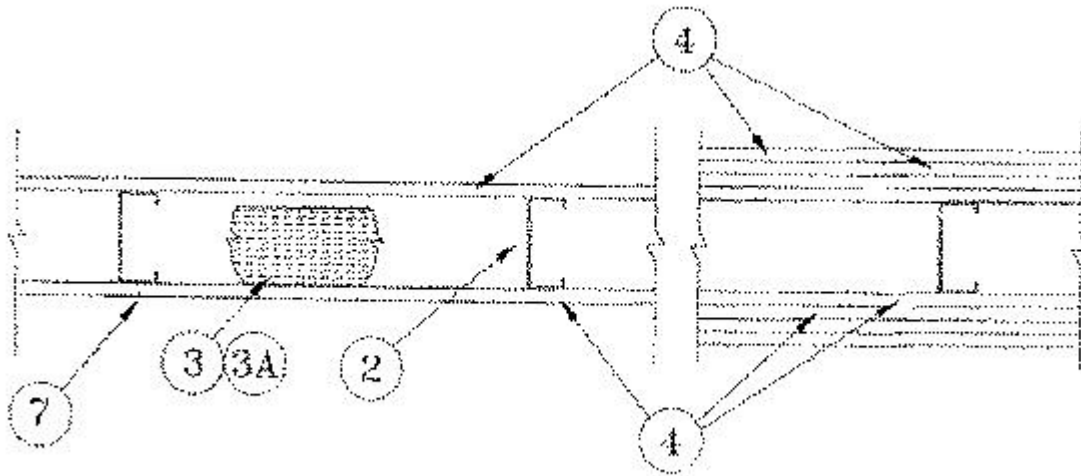
Fire Resistance Ratings - ANSI/UL 263

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Design No. V438

March 23, 2009

Nonbearing Wall Ratings - 1, 2, 3 or 4 Hr (See Items 3 & 4)



1. Floor and Ceiling Runners — (Not Shown) — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. Floor and Ceiling Runners* — (Not shown - In lieu of Item 1) — For use with Item 2A, proprietary channel shaped, min. 3-5/8 in. wide, fabricated from min. 0.0150 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max. Effective thickness is 0.034 in.

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1B. Floor and Ceiling Runners* — (Not shown - In lieu of Item 1) — For use with Item 2A, proprietary channel

shaped, min. 1-5/8 in. wide with, fabricated from min. 0.0150 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max. Effective thickness is 0.034 in.

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1C. **Framing Members - Floor and Ceiling Runner*** — Not shown - In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, minimum width to accommodate stud size, with 1-1/4 in. long legs fabricated from min 0.0200 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

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INC — Viper20S™ Track, Viper20D™ Track

2. **Steel Studs** — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min width as indicated under Item 4, min 1-1/4 in. flanges and 1/4 in. return, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. **Steel Studs*** — In lieu of Item 2 - Proprietary channel shaped studs, min. width as indicated under Item 4, fabricated from min. 0.0150 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height. Allowable use of studs is shown in the table below. For direct attachment of gypsum board only. Effective thickness is 0.034 in.

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2B. **Framing Members - Metal Studs*** — Not shown - In lieu of Item 2 — For use with Item 1C, proprietary channel shaped steel studs, minimum width indicated under Item 4, 1-1/4 in. deep fabricated from min 0.0200 in. thick galv steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.

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3. **Batts and Blankets*** — (Required as indicated under Item 4) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 4. See **Batts and Blankets (BKNV or BZJZ) Categories** for names of Classified companies.

3A. **Batts and Blankets*** — (Optional) — 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 or BZJZ) Categories** for names of Classified companies.

4. **Gypsum Board*** — Gypsum panels with beveled, square or tapered edges. **For single layer systems** gypsum panels applied vertically or horizontally with joints centered over studs. For all products except FSW-3 and FSW-5, horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. When applied horizontally, gypsum panels fastened to framing with 1 in. long Type S steel screws 1-1/2 in. from board edges, 3 in. from board edge and every 8 in. OC in the field. Screws spaced a max 12 in. along the top and bottom edges of the wall. **For single layer systems** (constructed with 1/2 in. thick board) gypsum panels applied vertically or horizontally with vertical joints centered over studs. **For two layer systems** (constructed with 5/8 in. thick board) gypsum panels applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs and in adjacent layers. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints in adjacent layers staggered a min of 12 in. For two layer systems (constructed with 1/2 in. thick board) inner layer of gypsum panels applied vertically and outer layer of gypsum panels may be applied vertically or horizontally. Vertical joints in adjacent layers staggered one stud cavity. For three and four layer systems inner layers to be applied vertically with joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers staggered one stud cavity. Outer layer may be applied vertically or horizontally. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Wallboard Protection on each Side of Wall

Rating, Hr	Min Stud Depth, Item 2, In.	Min Stud Depth, Item 2A, In.	No. of Layers & Thks of Panel	Min Thks of Insulation (Item 3)
1	3-5/8	3-5/8	1 layer, 5/8 in. thick	Optional

1	2-1/2	3-5/8	1 layer, 1/2 in. thick	2 in. thick
2	1-5/8	1-5/8	2 layers, 1/2 in. thick	Optional
2	2-1/2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	1-5/8	4 layers, 1/2 in. thick	Optional
4	1-5/8	1-5/8	4 layers, 5/8 in. thick	Optional

NATIONAL GYPSUM CO — 1/2 in. thick Type FSW-G, FSK-G, FSW-C, FSMR-C or FSK-C; 5/8 in. thick Type FSW, FSK, FSW-3, FSW-5, FSW-G, FSK-G, FSW-6, FSW-C, FSMR-C or FSK-C.

5. **Fasteners** — (Not shown)-Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels, spaced 8 in. OC along edges of board and 12 in. OC in the field of board. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 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., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

5A. **Fasteners** — (Not shown)-Type S or S-12 steel screws used to attach panels to studs (Item 2A). **Single layer systems:** 1-1/4 in. long for 1/2 and 5/8 in. thick panels, spaced 8 in. OC along edges of board and 12 in. OC in the field of board. **Two layer systems applied vertically:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels, spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges. Second layer- 1-5/8 in. long for 1/2 in. and 5/8 in. thick panels, spaced 12 in. OC along the top and bottom tracks and 16 in. OC in the field and along the vertical edges, with screws offset 8 in. from first layer. **Two layer systems applied horizontally:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels, spaced 24 in. OC with the 1st screw installed 1-1/4 in. from the board edge and to the track only spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in. and 5/8 in. thick panels, spaced 16 in. OC with the 1st and 2nd screws installed 1-1/4 in. and 8 in. from the board edge, respectively, and to the track only spaced 16 in. OC. **Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

6. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.

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

8. **Siding, Brick or Stucco** — (Optional, not shown) - Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. 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.

9. **Cementitious Backer Units*** — (Optional Item Not Shown - For Use On Face Of Rated Systems With All Standard Items Required) - 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide.- Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO — Type PermaBase.

*Bearing the UL Classification Mark

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