

UL

ONLINE CERTIFICATIONS DIRECTORY

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Design No. V497

BXUV.V497

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.

Fire Resistance Ratings - ANSI/UL 263

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

Design No. V497

April 21, 2010

Nonbearing Wall Rating - 1 Hr

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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.

2. Steel Studs — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min 3-5/8 in. wide, min 1-1/4 in. flanges, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

3. Laminating Compound — For use with Item 4 - Used to bond outer layer wallboard to inner layer wallboard. Powder type mixed with water in accordance with instructions shown on bags. Applied to entire surface of base layer wallboard. Applied with notched trowel producing continuous beads about 1/4 in. wide and 1/4 in. high.

4. Gypsum Board* — Applied to one side of steel studs (Item 2). Two layers of 5/8 in. gypsum panels with beveled, square or tapered edges. Gypsum panels applied vertically with joints centered over studs. Base layer applied with 1 in. Type S screws spaced 24 in. oc. Face layer applied vertically with joints centered over studs and offset from base layer joints by 24 in. Face layer applied with 1-5/8 in. Type S screws spaced 12 in. oc starting with a 6 in. offset from the bottom of the gypsum panel.

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

4A. Gypsum Board* — (As an alternate to Items 3 and 4) - Applied to one side of steel studs (Item 2). Three layers of 5/8 in. gypsum panels with beveled, square or tapered edges. Gypsum panels applied vertically with joints centered over studs. First layer applied with 1 in. Type S screws spaced 24 in. oc. Second layer applied vertically with joints centered over studs and offset from base layer joints by 24 in. Second layer applied with 1-5/8 in. Type S screws spaced 24 in. oc. Face layer applied vertically with joints centered over studs and offset from second layer joints by 24 in. Face layer applied with 2-1/4 in. Type S screws spaced 12 in. oc starting with a 6 in. offset from the bottom of the gypsum panel.

NATIONAL GYPSUM CO — 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. Joint Tape and Compound — (Not Shown) - Joints covered with joint compound and paper tape. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer panels.

*Bearing the UL Classification Mark

Last Updated on 2010-04-21

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Questions?

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Page Top

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MBMA

METAL BUILDING MANUFACTURERS ASSOCIATION®

Fire Resistance Bulletin 5

Design No. W404

December 07, 2010

Non Load Bearing Wall Rating — 1 Hr.

5

6

1

7

3

SECTION A-A

24" O.C. (MAX)

OPTIONAL DETAILS FOR THERMAX

8

7

3

1

5

4

4" MAX.

A

7

3

1

5

4

8"

4" MAX.

B

7

3

1

5

4

8"

4" MAX.

C

Metal Building Manufacturers Association

www.mbma.com

3

1. Girts — "Z" or "C" shaped girts, minimum 0.056 inch thick steel, minimum 8 inches deep, with minimum 2 inch wide flanges. Girts placed horizontally (with flanges up or down) and spaced maximum 90 inches o.c. Girts are secured to columns with girt clips, Item 2, or bolted to the column through the girt flange.

2. Girt Clips — (optional, not shown) - Steel clips secured to column by welds or bolts.

3. Steel Wall Panels — Minimum No. 26 MSG, minimum 1 1/8 inch depth, minimum 36 inch wide coated steel panels. Vertical raised rib profiles of adjacent panels are overlapped and attached to each other with self-drilling or self-tapping screws spaced 30 inch o.c. (max.) along the lap. Metal panel attachment to steel girt using self-drilling or self-tapping screws spaced 12" o.c. (max) along girt.

A. Brick or Masonry Veneer — (optional, not shown) - Brick or masonry veneer meeting the requirements of local code agencies may be installed over additional furring channels (not shown), Item 4, on exterior of wall in place of steel wall panels. Brick or masonry veneer attached to furring channels with corrugated metal wall ties attached to each furring channel with steel screws, not more than each sixth course of brick. When a minimum 3/4 inch thick brick or masonry veneer facing is used, the fire resistance rating applies from either side of the wall.

4. Furring Channels — Hat shaped, minimum 20 MSG galvanized steel, nominally 3 inches wide, 1 1/2 inches deep, spaced maximum 24 inches o.c. perpendicular to girts. Channels are secured to each girt with 3/8 inch (minimum) long self-drilling sheet steel type screws. Two screws are used at each fastening location, one through each leg of the furring channel.

A. (optional) — In place of the furring channels, the following standard steel framing for rated gypsum board walls may be used:

Steel framing (steel studs, runners and their attachment) for support of the gypsum board wall shall be constructed of the materials and in the manner specified in UL Design No. V497.

4

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

5. Wallboard, Gypsum* — Two layers on interior face of wall of any 1/8 inch thick gypsum wallboard bearing the UL Classification Mark for Fire Resistance. Both layers applied horizontally or vertically. First layer attached to furring channels, Item 4, using 1 inch long Type S bugle head drywall screws spaced 24 inches o.c. maximum vertically and horizontally. Second layer attached to furring channels using 1 3/8 inch long Type S bugle head drywall screws spaced 12 inches o.c. maximum vertically and 24 inches o.c. maximum horizontally. The horizontal or vertical joints of the wallboard shall be offset 24 inches when 2 successive layers are applied in the same orientation. Wallboard joints finished dry or premixed joint compound applied in two coats to joints and screw heads of face layer of gypsum wallboard. Paper or glass fiber tape embedded in first layer of compound over all joints.

* See Wallboard, Gypsum (CKNX) category for names of manufacturers.

6. Column Protection — (not shown) - Horizontal wall girts, Item 1, are attached to vertical structural steel columns. See Column Design No. X524 or X530 if protected columns are required.

7. Batts and Blankets* — Minimum 3/8 inch thick (R-10) glass fiber blankets placed in the cavities of exterior walls, and attached to the girts. As an alternate, 1" minimum Rigid Foam Board, Item 8, shall be permitted, in addition to the glass fiber blankets.

* See Batts and Blankets (BZJZ) categories for names of manufacturers.

8. Rigid Foam Board* — (optional) - Minimum 1 inch thick, maximum 4" thick rigid foam board. Applied horizontally or vertically within the wall cavity (between steel wall panels and/or gypsum wallboard), on exterior face only or on interior face only or on both faces. First layer

attached to furring channels, Item 4, or to girt, Item 1.

The following fastener diameter, length and spacing is required for each thickness when Thermax™ is attached on the metal panel side (see optional details A & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws spaced 12" o.c. along girt	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws spaced 12" o.c. along girt	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws spaced 12" o.c. along girt	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws spaced 12" o.c. along girt	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

See Optional Details A, B and C for allowable configurations.

* THE DOW CHEMICAL CO — Type Thermax™ Sheathing, Thermax™ Light Duty Insulation, Thermax™ Heavy Duty Insulation, Thermax™ Metal Building Board, Thermax™ White Finish Insulation, Thermax™ ci Exterior Insulation, Thermax™ IH Insulation, Thermax™ Plus Liner Panel and Thermax™ Heavy Duty Plus (HDP)

The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
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2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

See Optional Details A, B and C for allowable configurations.

* THE DOW CHEMICAL CO — Type Thermax™ Sheathing, Thermax™ Light Duty Insulation, Thermax™ Heavy Duty Insulation, Thermax™ Metal Building Board, Thermax™ White Finish Insulation, Thermax™ ci Exterior Insulation, Thermax™ IH Insulation, Thermax™ Plus Liner Panel and Thermax™ Heavy Duty Plus (HDP)

The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	3" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
3"	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	4" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
4"	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	5" long, #1/4-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs

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The following fastener diameter, length and spacing is required for each thickness when Thermax™ is applied under furring channels on the interior side (see optional details B & C):

Thermax™ Thickness:	Fastener	Diameter and Spacing Required:
1"	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs	2" long, #12-14 self-drilling or self-tapping screws, (2) at each girt location through the furring channel legs
2"		