



BXUV.U404 - Fire-resistance Ratings - ANSI/UL 263

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 Certified 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 Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances](#)

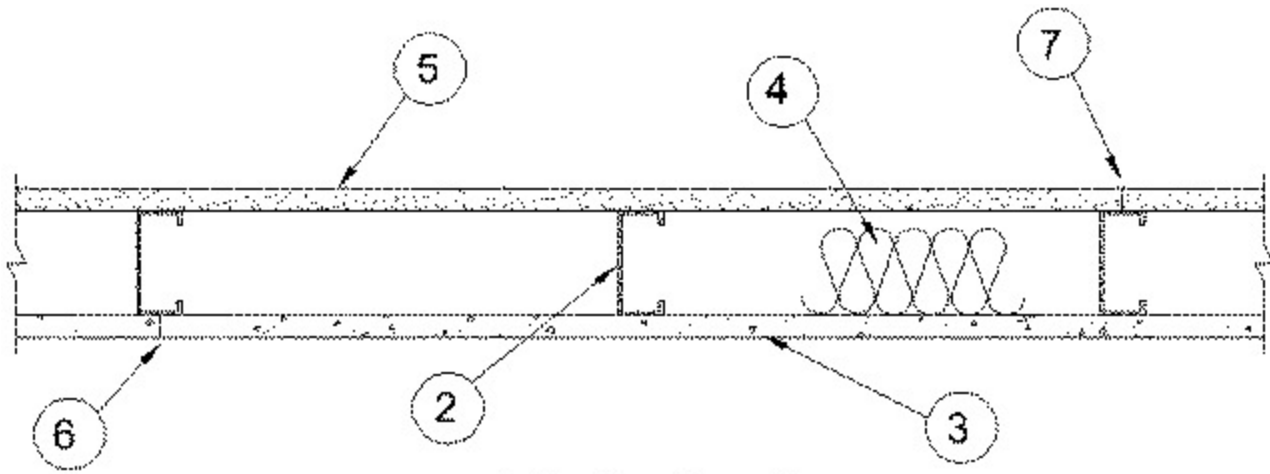
[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances](#)

Design No. U404

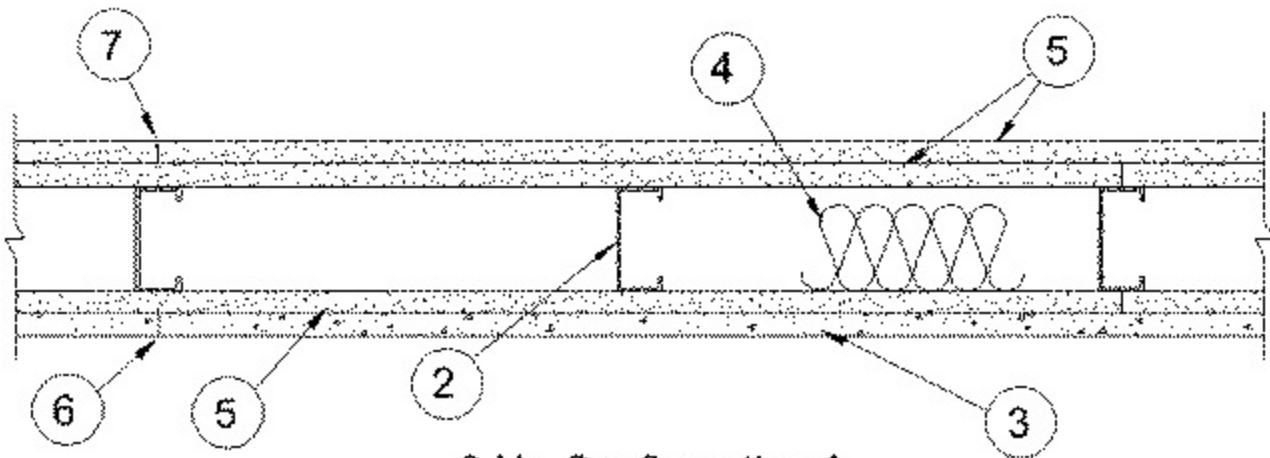
December 22, 2020

Nonbearing Wall Rating — 1 and 2 Hr (See Items 3 and 5)

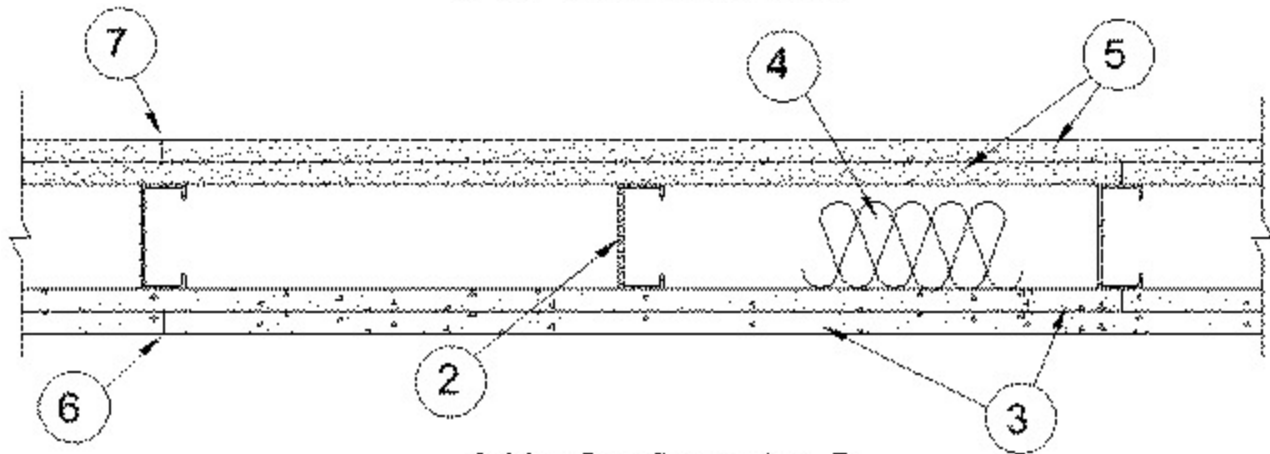
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



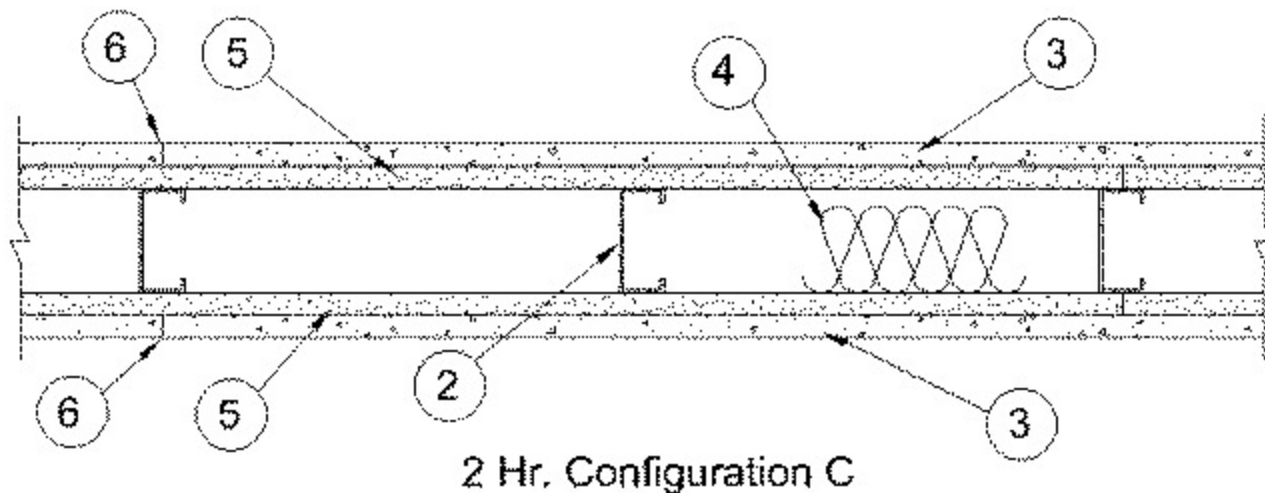
1 Hr. Configuration



2 Hr. Configuration A



2 Hr. Configuration B



1. **Steel Floor and Ceiling Runners** — (Not Shown) — Channel shaped, 3-1/2 in. wide by 1-1/4 in. deep, fabricated from min 20 MSG (0.0329 in., min bare metal thickness) galvanized steel. Attached to floor and ceiling with steel fasteners spaced 24 in. OC max.

2. **Steel Studs** — 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.

3. **Cementitious Backer Units*** — 1/2 in. or 5/8 in. thick, applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with corrosion resistant, chamfered, ribbed wafer head screws with a minimum head diameter of .400 inch. For nonbearing systems, fastened to studs and bottom runners with the uppermost screws placed 1/2 in. to 2 in. below the bottom edge of the leg of the top runner. Horizontal joints need not be backed by framing. **1 Hr System** - Screws shall be min 1-1/4 in. long and spaced a max of 8 in. OC. All vertical joints staggered one stud cavity from gypsum board vertical joints on the opposite side of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. **2-Hr System** - For the base layer in Configuration B, the screws shall be min 1-1/4 in. long and spaced a max of 12 in. OC. For the face layers, screws shall be 1-5/8 in. long and spaced a max of 8 in. OC. All face layer joints offset min 12 in. from underlying base layer joints. Joints in either layer need not be staggered from joints on the opposite side of the wall.

UNITED STATES GYPSUM CO — Type DCB

4. **Batts and Blankets*** — Min 3 in. thick mineral wool insulation batts, friction-fitted between studs .

INDUSTRIAL INSULATION GROUP L L C — Type SAFB

JOHNS MANVILLE — Type SAFB

ROCKWOOL — Type AFB, min. density 1.8 pcf / 28.8 kg/m³

THERMAFIBER INC — Type SAFB, SAFB FF

5. **Gypsum Board*** — 5/8 in. thick, with square or tapered edges, applied vertically or horizontally with vertical joints centered over studs. Horizontal joints need not be backed by framing. Fastened with Type S-12 screws. **1-Hr System** - For vertical application, fastened to studs and runners with 1 in. long screws spaced max 8 in. OC at vertical edges and spaced max 12 in. OC in the field. For horizontal application, fastened to studs and runners with 1 in. long screws spaced max 8 in. OC. Vertical joints staggered one stud cavity from cement board vertical joints on opposite side of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. **1-Hr System with ULIX:** fastened with 1 in. long screws, spaced 12 in. OC in the field and perimeter when panels are applied horizontally or vertically. Vertical

joints staggered one stud cavity from cement board vertical joints on opposite side of studs. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. **2-Hr System** - Base layer with an overlying gypsum board face layer, fastened with 1 in. long screws spaced max 16 in. OC to studs and runners. Base layer with an overlying cement board face layer, fastened with 1 in. long screws spaced max 12 in. OC to studs and runners. Face layers fastened with 1-5/8 in. long screws spaced max 16 in. OC to studs and runners with screws offset 8 in. from face layer screws. Face layer joints offset min 12 in. from base layer joints. Joints in either layer need not be staggered from joints on the opposite side of the wall. When used in widths other than 48 in., gypsum panels to be installed horizontally.

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, SGX, ULIX, ULX, USGX, WRC or WRX (Joint tape and compound, Items 6 and 7, optional for use with Type USGX).

UNITED STATES GYPSUM CO — Type AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, WRC, WRX, USGX (Joint tape and compound, Items 6 and 7, optional for use with Type USGX).

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX, USGX (Joint tape and compound, Items 6 and 7, optional for use with Type USGX).

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX (Joint tape and compound, Items 6 and 7, optional for use with Type USGX).

5A. **Gypsum Board*** — (As an alternate to Item 5 may be used as the base layer on one or both sides of wall, 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

5B. **Gypsum Board*** — (As an alternate to Item 5 may be used as the base layer on one or both sides of wall, For direct attachment only). Nominal 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 (or #6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Nelco

5C. **Gypsum Board*** — (As an alternate to Item 5) For Direct Application to Studs Only- For use as the base layer or as the face layer. 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 1-5/8 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in OC in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Fasteners for face layer gypsum panels (Item 5) when installed over lead backed board to be min 2-1/2 in.

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5D. **Gypsum Board*** — ((As an alternate to Items 5 may be used as the base layer on one or both sides of wall, For direct attachment only)) For Direct Application to Studs 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. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and 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 discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Item 5) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel.

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

6. **Joints** — Covered with glass fiber mesh tape and latex modified Portland cement mortar or basecoat, or Type I organic adhesive.

7. **Joints** — When tapered edge gypsum board is used, face layer joints covered with joint compound and paper tape. As an alternate, gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced. When square-edge gypsum board is used, treatment of joints is optional.

8. **Vapor Retarder, Water Barrier or Weather Resistive Barrier** — (Optional — Not shown) — As required.

9. **Lead Batten Strips** — (Not Shown, For use With Item 5A) - 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 5A) and optional at remaining stud locations. Required behind vertical joints.

9A. **Lead Batten Strips** — (Not Shown, for use with Item 5C) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of .0140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5) and optional at remaining stud locations.

10. **Lead Discs or Tabs** — (Not Shown, For use With Item 5A) - Used in lieu of or in addition to the lead batten strips (Item 9) 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 5A) 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".

10A. **Lead Discs** — (Not Shown, for use with Item 5C) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

11. **Lead Batten Strips** — (Not Shown, For Use With Item 5B) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top 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 5B) and optional at remaining stud locations.

12. **Lead Tabs** — (Not Shown, For Use With Item 5B) 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5B) will penetrate the steel stud. Lead tabs to have a purity of 99.9%

meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

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