UL Product iQ™

BXUV.G528 - Fire-resistance Ratings - ANSI/UL 263

PANEL REY®
Drywall Solutions

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. G528

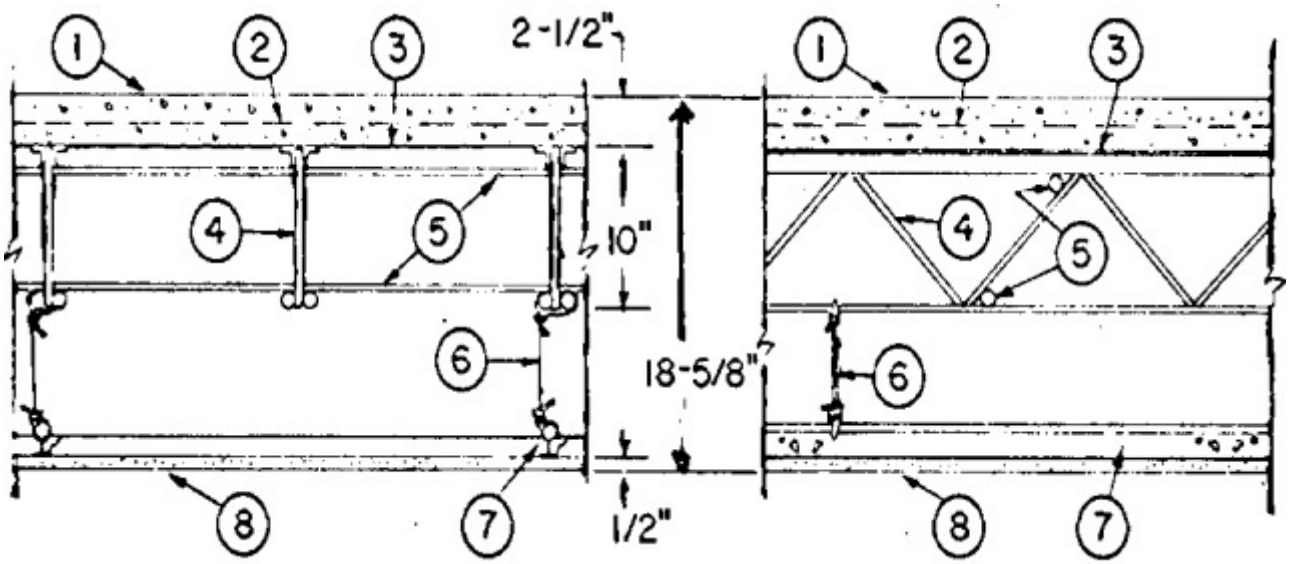
February 04, 2021

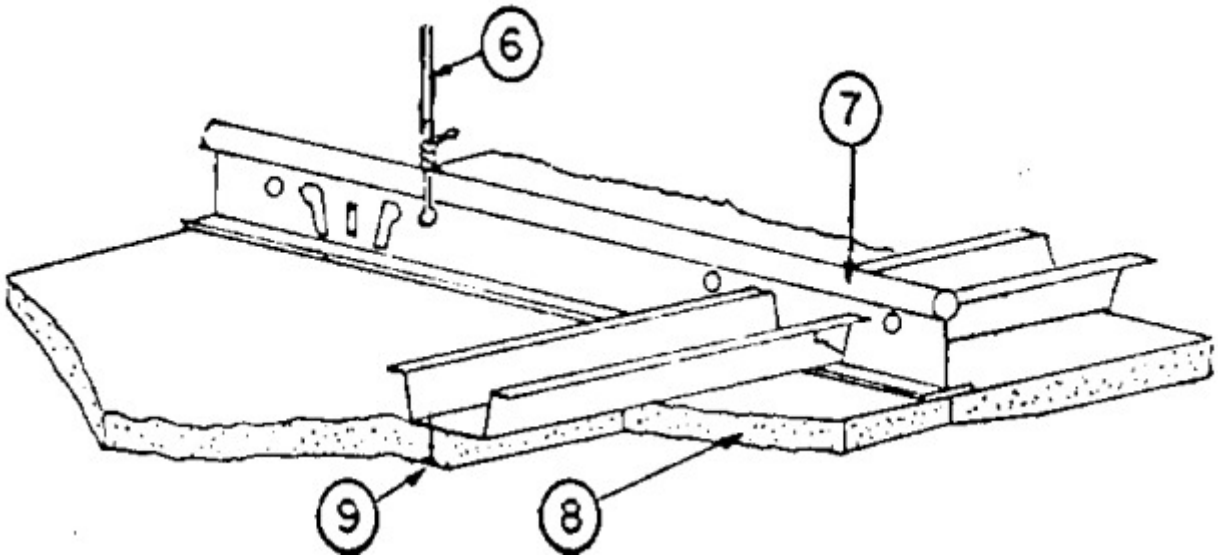
Restrained Assembly Ratings — 1 and 1-1/2 Hr. (See Item 11)

Unrestrained Assembly Ratings — 1 and 1-1/2 Hr. (See Item 11)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

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





1. **Normal-Weight Concrete —** Carbonate or siliceous aggregate, 152 + or - 3 pcf unit weight, 4500 psi compressive strength.

2. **Welded Wire Fabric —** 6 by 6 in., 10/10 SWG.

3. **Metal Lath —** 3/8 in. rib, 3.4 lb per sq yd expanded steel. Tied to each joist at every other rib and midway between joints at side lap with 18 SWG galv steel wire.

4. **Steel Joists —** Type 10J2 min size, spaced 24 in. O.C., welded to end supports.

5. **Bridging —** 1/2 in. diam steel bars welded to top and bottom chords of each joist.

6. **Hanger Wire —** No. 12 SWG galv steel wire tied to lower chord of joists spacing not over 48 in. O.C.

7. **Steel Framing Members* —** Main runners, cross tees, cross channels and wall angle as listed below:

    a. **Main Runners —** Nom 10 or 12 ft. long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC.

    b. **Cross Tees —** Nom 4 ft. long, 1-1/2 in. wide face, 15/16 in. wide face installed at sides of light fixtures, installed perpendicular to the main runners, spaced 24 in. OC. When Batts and Blankets* (Item 11) are used, cross tees spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum board end joints.

The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

c. **Cross Channels —** Nom 4 ft. long, installed perpendicular to main runners, spaced 24 in. OC. When Batts and Blankets* (Item 11) are used, cross channels spaced 16 in. OC.

d. **Wall Angle or Channel —** Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum board.
CGC INC — Type DGL or RX, ULIX.

USG INTERIORS LLC — Type DGL or RX.

7A. **Steel Framing Members* —** (Not shown) — As an alternate to Item 7. Main runners nom 12 ft long, spaced 48 in. OC. Ends of main runners at walls to rest on wall angle, without attachment, with 1/2 to 3/4 in. end clearance. Primary cross tees (1-1/2 in. wide across flange) or cross channels, nom 4 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional primary cross tees or cross channels required at each gypsum board end joint and 8 in. from and on each side of gypsum board end joint.
ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000.

7B. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 7 and 7A. For use with 1/2 in. thick gypsum board only. Main runners nom 12 ft long, spaced 48 in. OC. Cross channels, 4 ft. long, installed perpendicular to main runners and spaced 24 in. OC. Additional cross channels required 8 in. from and on each side of gypsum board end joints, and 8 in. from each side of light fixtures. Cross tees, 4 ft long installed perpendicular to main runners to support the 4 ft sides of light fixtures. J-shaped metal trim molding, installed at perimeter of light fixtures to cover and support the exposed gypsum board edges.
ROXUL USA INC. D/B/A ROCKFON — Type 630.

7C. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 7, 7A and 7B. Main runners nom 12 ft long, spaced 48 in. OC. Cross tees, nom 4 ft long installed perpendicular to main runners and spaced 24 in. OC. Additional cross tees located 8 in. from and on each side of gypsum board end joints, and 8 in. from each side of light fixtures.
ROXUL USA INC. D/B/A ROCKFON — Types 650, 650C, 670, 670C.

7D. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 7, 7A, 7B and 7C. For use in corridors or rooms having a maximum width dimension of 14 ft. Steel framing members consist of grid runners, locking angle wall molding and hanger bars. Locking angle wall molding secured to walls with steel nails or screws spaced max 24 in. OC. Slots of locking angle wall molding parallel with hanger bars to be aligned with tabbed cutouts in bottom edge of hanger bars. Hanger bars spaced max 50 in. OC and suspended with No. 12 AWG steel hanger wires spaced max 48 in. OC. Adjoining lengths of hanger bar to overlap 12 in. and to be secured together and suspended by a shared hanger wire. A min clearance of 1/4 in. shall be maintained between the ends of the hanger bars and the walls. Grid runners cut-to-length and installed perpendicular to hanger bars and spaced max 24 in. OC with additional grid runners installed 8 in. OC at gypsum board end joints. Grid runners parallel with walls to be spaced max 16 in. from wall. Ends of grid runners to rest on and engage slots of locking angle wall molding with a clearance of 3/8 in. to 1/2 in. maintained between each end of the grid runner and the wall. Bulb of grid runner to be captured by tabbed cutouts in bottom edge of hanger bars.
ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000-SS

7E. **Steel Framing Members* —** (Not Shown) — As an alternate to Items 7, 7A, 7B, 7C and 7D. Main runners nom 12 ft long, spaced 72 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.
ARMSTRONG WORLD INDUSTRIES INC — Type DFR-8000

7F. **Steel Framing Members* —** (Not Shown) - As an alternate to Items 7 through 7E - Main runners nom 12 ft long, spaced 72 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.
USG INTERIORS LLC — Type DGL or RX

7G. **Alternate Steel Framing Members* —** (Not Shown) - As an alternate to Items 7 through 7F - Main runners nom 12 ft long, spaced 48 in. OC. Cross tees, nom 4 ft. long, installed perpendicular to main runners and spaced 24 in. OC. Additional 4 ft. long cross tees required at 6 in. from each side of butted gypsum board end joints. When **Batts and Blankets*** (Item 11A) are used, cross tees spaced 16 in. OC with additional cross tees 8 in. away from each side of butted gypsum board end joints. The cross tees shall be riveted with 1/8 in. dia. rivets to the wall angle and to the main tee where the cross tee does not align with slot in the main tee. Galvanized steel wall angle with 1-1/2 in. legs attached to walls at perimeter of ceiling with fasteners at 16 in. OC. to support steel framing member ends and for screw-attachment of the gypsum board.
CERTAINTEED CORP — Types DWS12-13-20, DWS4.16-13-20, DWS4-13-20, DWS2-13-20, DWS2.16-13-20 and DWA1.5-1.5

7H. **Framing Members* —** (Not Shown) — As an alternate to Items 7 through 7G. Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.
ROXUL USA INC. D/B/A ROCKFON — Type 670C

8. **Gypsum Board* —** 1/2 in. or 5/8 in. thick, 4 ft wide, installed with long dimension perpendicular to cross channels with side joints centered along main runners. Gypsum board fastened to cross channels with 1 in. long gypsum board screws spaced 12 in. OC along the end joints and 12 in. OC in the field. The screws along the end joints located 1/2 in. from and on either side of the board edge. The screws for the long edges located 1-3/4 in. from and on either side of the board edges. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC. Joints to be covered with paper tape and joint compound.
When alternate **Steel Framing Members*** (Item 7B) are used, gypsum board installed with long dimension (side joints) perpendicular to the cross channels and 4 ft cross tees, and with the side joints centered along the main runners. Gypsum board fastened to cross channels with gypsum board screws located 1/2 in. from butted end joints, with one screw located at the midspan of the cross channel, one screw located 12 in. from and on each side of the channel mid span, and one screw located 2-3/4 in. from each side joint. End joints of the sheets shall be staggered as described above. Joints to be covered with paper tape and joint compound.

When the alternate **Steel Framing Members*** (Item 7C) are used, gypsum board installed with long dimension perpendicular to cross tees with side joints centered along the main runners and end joints centered along cross tees. Fastened to cross tees with five gypsum board screws with one screw located at the mid span of the cross tee, one screw located 12 in. from and on each side of the cross tee midspan, and one screw located 1-1/2 in. from each gypsum board side joint. Except at gypsum board end joints, gypsum board screws shall be located on alternating sides of cross tee flange. At gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with gypsum board screws 1/2 in. from side joints, midway between intersections with cross tees (24 in. OC). End joints of adjacent sheets shall be staggered as described above. Joints to be covered with joint tape and joint compound.

When alternate **Steel Framing Members*** (Item 7D) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the grid runners with the end joints staggered min 4 ft and centered between grid runners which are spaced 8 in. OC. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide by 48 in. long pieces of gypsum board are to be laid atop the grid runner flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the grid runners at opposite corners of the backer strip to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to grid runners with gypsum board screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. Joints to be covered with paper tape and joint compound.

When alternate **Steel Framing Members*** (Item 7E) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. Joints to be covered with paper tape and joint compound.

When alternate **Steel Framing Members*** (Item 7F and 7H) are used, gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. Joints to be covered with paper tape and joint compound.

AMERICAN GYPSUM CO — 1/2 or 5/8 in. Type AG-C, 5/8 in. AGX-1, LightRoc.

CABOT MANUFACTURING ULC — Type C

CERTAINTEED GYPSUM INC — 1/2 or 5/8 in. Type C, 5/8 in. Type X, Type X-1, Easi-Lite Type X-2, Type LGFC-C/A.

CGC INC — Types C, IP-X2, ULIX.

GEORGIA-PACIFIC GYPSUM L L C — Types 5, C, DAP, DA, DAPC, TG-C.

NATIONAL GYPSUM CO — Type FSK-C, FSK-G, FSW-1, FSW-C or FSW-G.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-3, PG-C.

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C, Type X.

UNITED STATES GYPSUM CO — Types C, IP-X2, ULIX.

USG BORAL DRYWALL SFZ LLC — Type C

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

8A. **Gypsum Board* —** For use when **Batts and Blankets*** (Item 11) and **Steel Framing Members*** (Item 7) are used - 5/8 in. thick, 4 ft wide; installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Fastened to cross tees with 1 in. long steel gypsum board screws spaced 8 in. OC in the field and 8 in. OC along end joints. Fastened to main runners with 1 in. long gypsum board screws spaced midway between cross tees. Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board edge. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC. Joints to be covered with paper tape and joint compound.
CGC INC — Types C, IP-X2.

UNITED STATES GYPSUM CO — Types C, IP-X2, ULIX.

USG BORAL DRYWALL SFZ LLC — Type C

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

8B. **Gypsum Board* —** For use when alternate **Steel Framing Members*** (Item 7G) are used - 1/2 in. thick, 4 ft. wide; installed with long dimension parallel to main runners and perpendicular to the 4 ft. long cross tees with the end joints centered between cross tees which are spaced 6 in. OC. Sheets are attached to cross tees with screws spaced 8 in. OC on the ends and 12 in. OC in the field with additional screws located 1-1/2 in, from the side edges. Sheets are attached to the main tees with screws spaced 8 in. OC with additional screws located 4 in. OC from the edges. Screws on the sides are located 1/2 in. from the side edge of the gypsum board. When **Batts and Blankets*** (Item 11A) are used - 5/8 in. thick, 4 ft wide; installed with long dimension parallel to main runners and perpendicular to cross tees and attached with screws spaced 8 in. OC on the ends and 8 in. OC in the field with additional screws located 1-1/2 in. from the side edges. Sheets are attached to main tees with screws spaced 8 in. OC with additional screws located 4 in. OC from the side edges. Screws on the sides located 3/4 in. from the side edge of the gypsum board, and screws at the end of the gypsum board located 1/2 in. from the board ends. Joints to be covered with paper tape and joint compound.
CERTAINTEED GYPSUM INC — Type C

9. **Screw, Gypsum Board —** Unless otherwise noted under Items 8 or 8A, Type S, 1 in. long, self-drilling and self-tapping, 0.168 in. diam shank, 5/16 in. diam heads.

10. **Wall Angle —** (Not shown) — No. 26 MSG angle, with 1-1/4 in. legs, nailed to walls along perimeter of ceiling.

11. **Batts and Blankets* —** (Optional, Not Shown) - When used Ratings are limited to 1 Hr. - For use with **Steel Framing Members*** (specifically Item 7) and **Gypsum Board*** (specifically Item 8A) - Any thickness mineral wool or glass fiber insulation bearing the UL Classification Marking for Surface Burning Characteristics, having a flame spread value of 25 or less and a smoke spread value of 50 or less. Insulation fitted in the concealed space, draped over steel framing members/gypsum board ceiling membrane.

11A. **Batts and Blankets* —** (Optional, Not Shown) - For use with **Steel Framing Members*** (specifically Item 7G) and **Gypsum Board*** (specifically Item 8B) - min. 3-1/2 in. thick, min. density 0.9 lb/ft^3 unfaced fiberglass batt insulation bearing the UL Classification Marking for Surface Burning Characteristics, having a flame spread value of 25 or less and a smoke spread value of 50 or less. Insulation fitted in the concealed space, draped over steel framing members/gypsum board ceiling membrane and light fixture protection.

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

Last Updated on 2021-02-04