UL Product iQ®

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

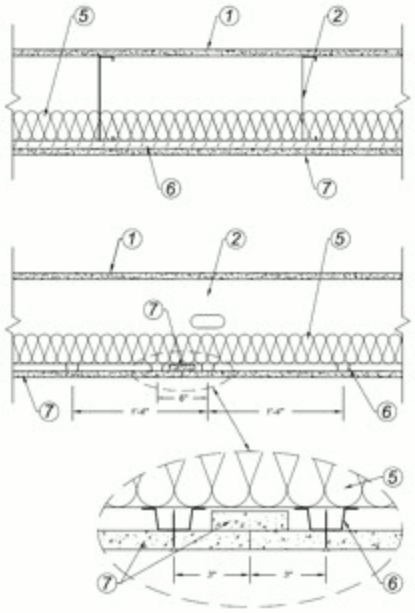
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. G602

June 25, 2024

Unrestrained Assembly Rating – 1 Hr (see Item 2a), 2 Hr or 3 Hr (see Item 9)
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. **Structural Cement-Fiber Units* —** Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to joists with end joints staggered a min of 2 ft and centered over the joists. Panels secured to steel joists with 1-5/8 in. long No. 8 self-drilling, self-countersinking steel screws spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the side edges of the panel.
UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

2. **Steel Joists —** Channel-shaped, min 10 in. deep with min 1-5/8 in. wide flanges and 1/2 in. long stiffening flanges. Fabricated from min No. 16 MSG galv steel. Min yield strength of 50,000 psi. Joists spaced max 24 in. OC. Supplied with appropriate rim tracks of same size and gauge.

2A. **Structural Steel Members* —** As an alternate to Item 2 - Limited to the 1 Hour Ratings. Pre-fabricated light gauge steel truss system consisting of cold-formed, galv steel cord and web sections. Trusses fabricated in various sizes, depths and from various steel thickness. Trusses spaced a max of 24 in. OC. Location of lateral bracing for truss chord and web sections to be specified on truss engineering.
TRUSS LINK INC — Truss Link

3. **Clip Angles —** (Not Shown) - For use with Item 2. No. 16 MSG, 9-3/4 in. long steel angles with 2 in. legs. Secured to track and joist with eight No.10, 3/4 in. long, self-drilling, hex head screws, located 1 in. from each end of clip angle, with the other two screws on each leg evenly spaced. Only one clip angle per joist end.

4. **Joist Bridging —** (Not Shown) - For use with Item 2. Installed immediately after joists are erected and before construction loads are applied. The bridging consisting of joist sections cut to length and placed between outer supports, adjacent to openings and at mid span with 8 ft OC max spacing. Bridging channels are screw-attached at each end to joist web using angle clips. V-bracing of 1-1/2 in. by 20-ga galvanized steel is screw-attached to bottom joist flange between bridging channels.

5. **Batts and Blankets* —** 3-1/2 in. thick glass fiber batt insulation draped over the furring channels. Any glass fiber batt insulation bearing the UL Classification Marking for Surface Burning Characteristics having a flame spread index of 25 or less and a smoke developed index of 50 or less may be used. See **Batts and Blankets** (BKNV) category in the Building Materials Directory for names of manufacturers.

6. **Furring Channels —** Hat Channels - Min 20 MSG galv. steel, min 2-5/8 in. wide by min 7/8 in. deep, installed perpendicular to the joists (Item 1) spaced a max of 16 in. OC (for 3 hour fire rating - channels spaced a maximum of 12 in. OC). Channel splices overlapped 6 in. beneath steel joist. Channels secured to each joist with double strand of No. 18 SWG steel wire, looped around a No. 10 x 3/4 in. long steel screw and the furring channel at each furring channel/steel joist intersection. Steel screws attached to web of steel joist, located 8 in from bottom of joist. Channel splices tied together with single strand of No.18 SWG steel wire at each end overlap. Two channels, spaced 6 in. OC, oriented opposite each panel end joint as shown in the above illustration. Additional channels shall extend min. 3 in. beyond each side edge of panel. When Item 8 is used, channels shall be min. 16 MSG galv. steel.

7. **Structural Cement-Fiber Units* —** Nom 3/4 in. thick, with long edges tongue and grooved, installed with long dimension of panels installed perpendicular to furring channels with end joints staggered a minimum of 26 in. At each end joint, additional furring channels 54 in. long, extending 3 in. beyond each tongue and grooved edge on both sides are installed. Additional furring channels at the end joints are wire tied to a minimum of 2 joists as described in Item 6.

Panels secured to channels with 1-5/8 in. long No. 8 self-drilling, self-countersinking steel screws spaced 8 in. OC at the perimeter and in the field with a screw located 1 in. from each edge. At the end joints, screws 8 in. OC with a screw located 1 in. from each edge, located 3 in. from the end edges of the panel.

3 in. wide by 54 in. long backer strips of **Structural Cement Fiber Units*** (Item 1 or 7), loosely laid and centered over the top of each end joint .

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

8. **Steel Framing Members* —** (Optional addition, Not Shown) — When it is desired to drop the drywall ceiling below the bottom plane of the Structural Cement-Fiber Units (Item 7.), a suspension system may be used to support the Gypsum Board (Item 9.). 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. Main runners suspended by min 12 SWG galv. steel hanger wires spaced 24 in. OC, a min of 4 in. below Structural Cement-Fiber Units (Item 7). Wires hung from 1" min. length by 1/4" min. diameter eye/hanger self-drilling screws installed through the Structural Cement-Fiber Units (Item 7) directly into the furring channel and joist (Item 6).

b. **Cross Tees or channels —** Nom 4 ft long, 15/16 in. or 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum panel 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. **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 panel.

USG INTERIORS LLC — Type DGL or RX

9. **Gypsum Board —** (Not Shown) — For 3 hour rating — One layer of nom. 5/8 in. thick, 48 in. wide gypsum panel installed over Structural Cement-Fiber Units (Item 7) with long dimension perpendicular to furring channels with long and short edge joints offset 24 in. from base layer (Structural Cement-Fiber Units), secured with 1-3/4 in. long Type S bugle-head screws spaced 8 in. OC in both the field and the perimeter, and 1-1/2 in. from side edges of the panel.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C

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

9A. **Gypsum Board* —** For use when Steel Framing Members* (Item 8) are used - One layer of 5/8 in. thick, 4 ft wide, installed with long dimension perpendicular to cross tees with side edges centered over main runners and joints centered over cross tees or channels. Fastened to cross tees or channels with 1 in. long Type S screws bugle-head screws spaced 8 in. OC with the screws located 4 in. from the midspan of the cross tee or channel, and 1-1/2 in. from side edges of gypsum panel. Fastened to main runners with 1 in. long Type S bugle-head screws spaced midway between cross tees or channels. End joints of gypsum panels shall be staggered not less than 4 ft OC with adjacent gypsum panels end joints.

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — Type C

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

10. **Finishing System —** (Not Shown) Optional, none required.

Alternate Construction

2B. **Structural Steel Members —** Prefabricated steel truss system consisting of cold-formed, galvanized steel cord and web sections. Overall truss depth minimum 12 in. Trusses spaced max of 24 in. oc.

ADVANT STEEL LLC — Type Advant CFT Truss System

2B1. **Truss Bridging —** (Not Shown) - For use with Item 2B — Installed immediately after trusses are erected and before construction loads are applied. The bridging shall consist of two 18 ga. 1-5/8 in. x 6 in. c-studs attached to the web of the trusses with two #12 1-1/2 in. hex head screws spaced 1 in. from web edge of c-studs. Bridging shall be installed such that a pair of members are separated by one web cavity and shall be centered within the truss span.

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Last Updated on 2024-06-25
