



BXUV.L581 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.
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Fire Resistance Ratings - ANSI/UL 263

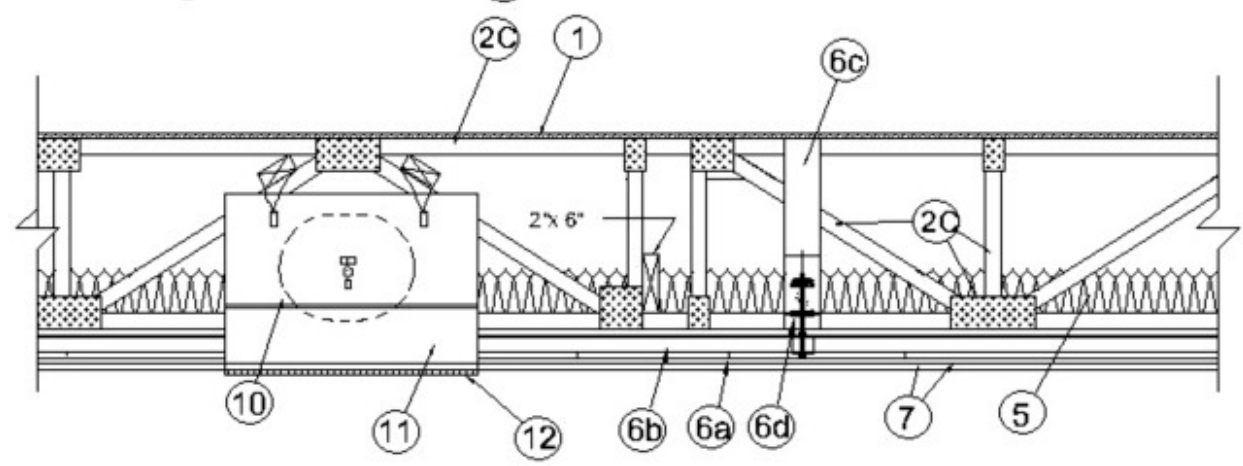
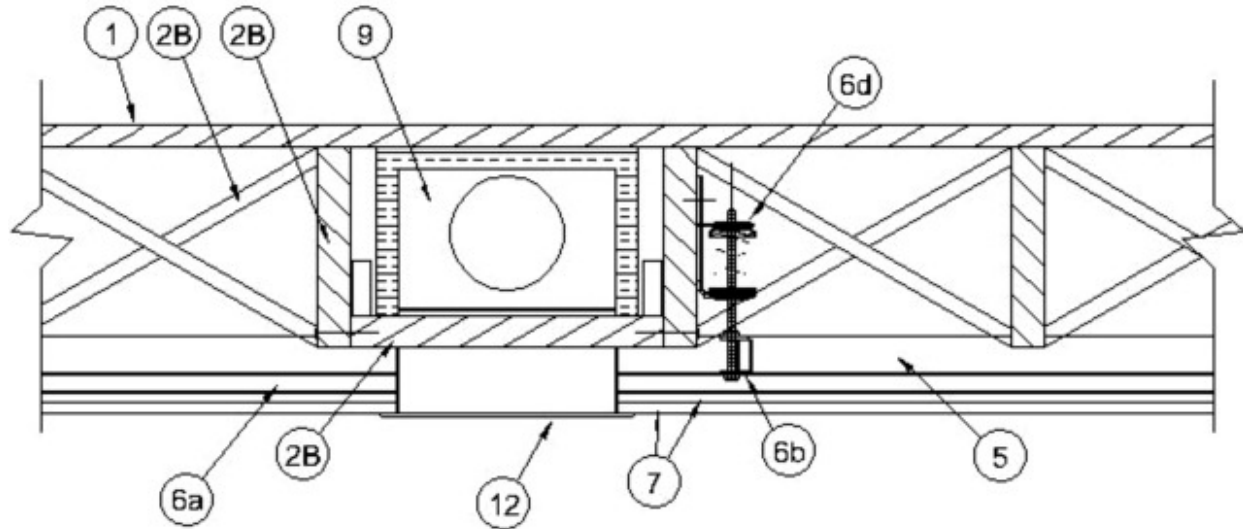
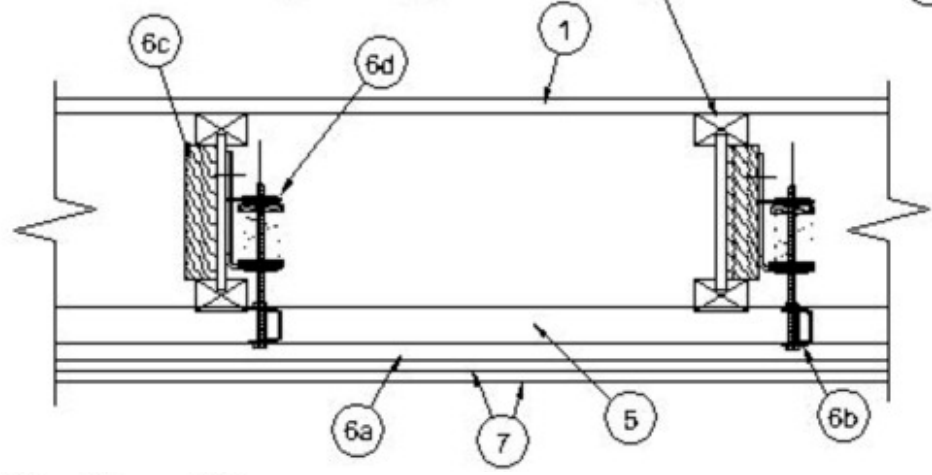
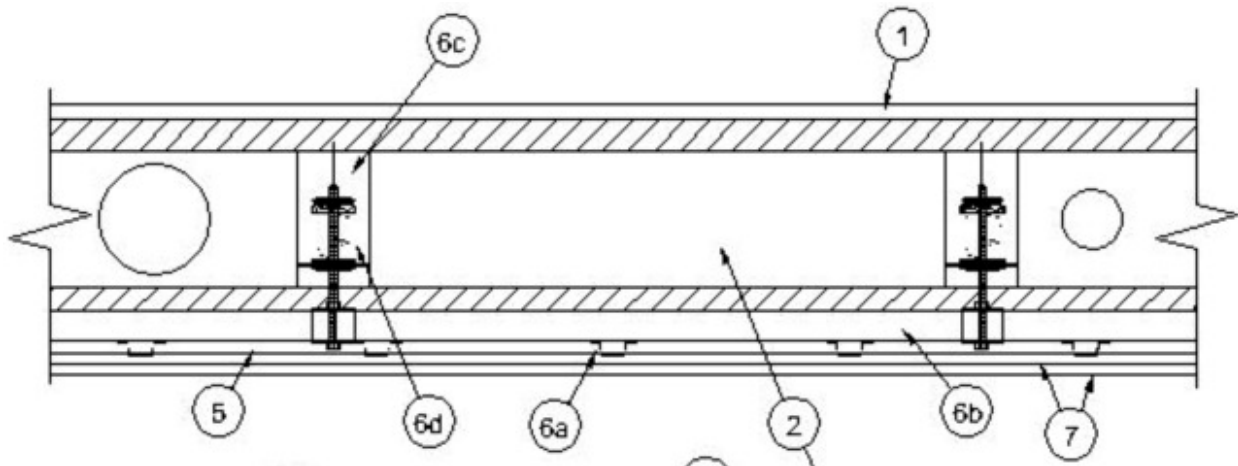
[See General Information for Fire Resistance Ratings - ANSI/UL 263](#)

Design No. L581

March 20, 2008

Unrestrained Assembly Rating — 1 Hr

Finish Rating — 42 Min



1. **Floor Systems** — The flooring system shall consist of the following:

Subflooring — Min 3/4 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood to be perpendicular to the trusses or joists with end joints staggered 4 ft. Plywood secured to trusses or joists with construction adhesive and No. 8d cement coated nails spaced 12 in. OC along each truss. Adhesive applied as 3/8 in. diam bead to top chord of trusses or joists and grooved edges of plywood.

1A. Optional Floor Topping Systems (Not Shown)

System No. 1

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* - (Optional) — Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. When floor mat material is used, min thickness of floor topping mixture is 1 in.

MAXXON CORP — Type Acousti-Mat II

Alternate Floor Mat Materials* — Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath — (Alternate to Crack Suppression Mat (CSM)) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping mixture shall be min 1-1/2 in.

Alternate Floor Mat Materials* — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping mixture shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* — Min 1 or 1-1/2 in. thickness of floor topping mixture depending upon floor mat system as specified above, having a min compressive strength of 1000 psi. Mixture shall consist of 3 to 7 gal of water to 80 lbs of floor topping mixture to 1.0 to 2.1 cu ft of sand.

MAXXON CORP — Type D-C, GC, GC2000, L-R, T-F, CT

System No. 2

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* - (Optional) — Nom 1/4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. When floor mat material is used, min thickness of floor topping mixture is 1 in.

MAXXON CORP — Type Acousti-Mat II

Alternate Floor Mat Materials* — Nom 0.8 in. thick floor mat material loose laid over the subfloor with Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1-1/2 in.

MAXXON CORP — Type Acousti-Mat 3, Crack Suppression Mat (CSM)

Metal Lath (Alternate to Crack Suppression Mat (CSM)) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping mixture shall be min 1-1/2 in.

Alternate Floor Mat Materials* — Nom 0.4 in. thick floor mat material loose laid over the subfloor. Maxxon Floor Primer to be applied to the surface of the mat prior to the floor topping placement. Floor topping mixture shall be min 1-1/2 in.

MAXXON CORP — Type Enkasonic 9110

Metal Lath (Optional) — For use with floor mat materials, 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd or Maxxon Corp. UL Classified Crack Suppression Mat (CSM) loose laid over the floor mat material. Floor topping mixture shall be min 1 in.

MAXXON CORP — Type Crack Suppression Mat (CSM)

Finish Flooring - Floor Topping Mixture* — Min 1 or 1-1/2 in. thickness of floor topping mixture depending upon floor mat system as specified above, having a min compressive strength of 1200 psi. Mixture shall consist of 4 to 7 gal of water to 80 lbs of floor topping mixture to 1.4 to 1.9 cu ft of sand.

RAPID FLOOR SYSTEMS — Type RF, RFP, RFU, RFR, Orcrete

2. Structural Wood Members* — Min 9-1/2 in. deep "I" shaped wood joists spaced max 24 in. OC. Min joist bearing on bearing plate shall be 2 in. Joists secured to bearing plates with two 8d nails at each end. Circular holes may be cut in the web of joists in accordance with the manufacturer's published installation instructions.

WEYERHAEUSER — Types TJI® 360, TJI® 560, TJI®/L65, TJI®/L90, TJI®/H90, TJI®/HD90, TJI®/HS90, TJI® 100C, TJI® 300C .

2A. Alternate Structural Wood Members* (Not Shown) — As an alternate to Item 2, Min 14 in. deep wood and steel trusses spaced max 24 in. OC. Min truss bearing on bearing plates to be in accordance with the truss manufacturer's published installation instructions. Trusses nailed or bolted to bearing plates, through steel bearing clips, in accordance with the manufacturer's published installation instructions.

WEYERHAEUSER — Types TJH, TJL, TJM, TJS, TJW, TJL(X).

2B. Wood Joists — As an alternate to Items 2 and 2A, Min 2 by 10, spaced max 16 in. OC and effectively fireblocked in accordance with local codes. Cross bridging shall be min 1 by 3 in. or min 2 by 10 solid blocking. When ceiling damper (Item 9) is employed, wood 2 by 4 in. horizontal bridging used in lieu of cross bridging and secured between joists with nails.

2C. Trusses — As an alternate to Items 2, 2A and 2B, Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. Truss members secured together with min 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

3. Bearing (Not Shown) — When the wood and steel trusses described in Item 2A are used, factory-installed bearing clips, formed of min 0.084 in. (13 gauge) galv steel shall be used to attach the joists to the bearing plate.

4. Bridging (Not Shown) — When the wood and steel trusses described in Item 2A are used, nom 2 by 6 in. lumber attached to bottom chord of each joist with two, min 0.045 in. thick (18-gauge) galv bridging clips. The bridging clips are pin-connected to the bottom chord of the joists and nailed to the bridging lumber with four 3 in. long 10d nails.

5. Batts and Blankets* — Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. Nom 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6a) and gypsum board ceiling membrane, and friction-fitted between trusses or joists and Steel Framing Members (Item 6d).

6. Steel Framing Members* —

a. Furring Channels — Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max. 16 in. OC perpendicular to trusses or joists and Cold Rolled Channels (Item 6b). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 7.

b. **Cold Rolled Channels** — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses or joists, friction-fitted into the channel caddy on the Steel Framing Members (Item 6d). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking** — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss or joist (Items 2 - 2C) at the top and bottom of the blocking at each Steel Framing Member (Item 6d) location.

d. **Steel Framing Members*** — Hangers spaced 48 in. OC. max along truss or joist, and secured to the Blocking (Item 6c) on alternating trusses or joists with a single 5/16 in. by 2 in. hex head lag bolt or four #6 1-1/4 in. drywall screws through mounting hole(s) on the hanger bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger positioned on blocking and leveling bolt height adjusted such that furring channels are flush with bottom of trusses or joists before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.

KINETICS NOISE CONTROL INC — Type ICW

7. **Gypsum Board*** — Two layers of nom 5/8 in. thick, 4 ft wide gypsum board panels are installed with long dimensions perpendicular to furring channels (Item 6a). Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. Outer layer shall be finished as described in Item 8.

CANADIAN GYPSUM COMPANY — Types C, IP-X2, IPC-AR.

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

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

8. **Finishing System** — (Not shown) - Vinyl, dry or premixed joint compound, applied in two coats to outer layer joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all outer layer joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

9. **Ceiling Damper* - (Optional, For use with Item 2B only)** — Max nom area shall be 198 sq in. Max rectangular size shall be 12 in. wide by 16-1/2 in. long. Max height of damper shall be 8-3/4 in. Aggregate damper openings shall not exceed 99 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 12) shall be installed in accordance with installation instructions.

AIR KING LTD — Series AS, Series AK

E H PRICE LTD — Models CD-S/R-HC, CD-RD-HC

NCA MFG INC — Models CD-S/R-HC, CD-RD-HC

RUSKIN CO — Model CFD7

UNITED ENERTECH CORP — Models C-S/R-HC(-A), C-RD-HC(-A)

10. **Air Duct* - (Optional, For use with Item 2C only)** — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

11. **Ceiling Damper* - (Optional, For use with Item 2C only)** — For use with min 18 in. deep trusses. Max nom area shall be 324 sq in. Max square size shall be 18 in. by 18 in. Rectangular sizes not to exceed 324 sq in. with a max width of 18 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 162 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 12) shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS — Model RD-521

POTTORFF — Model CFD-521.

11A. **Alternate Ceiling Damper* - (Optional, For use with Item 2C only)** — Max nom area shall be 196 sq in. Max square size shall be 14 in. by 14 in. Rectangular sizes not to exceed 196 sq in. with a max width of 24 in. Max height of damper shall be 7 in. Aggregate damper openings shall not exceed 99 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 12) shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS — Model RD-521-BT

POTTORFF — Model CFD-521-BT.

12. **Grille** — Steel grille, installed in accordance with the installation instructions provided with the ceiling damper.

*Bearing the UL Classification Mark

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