

BXUV.P825

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. P825

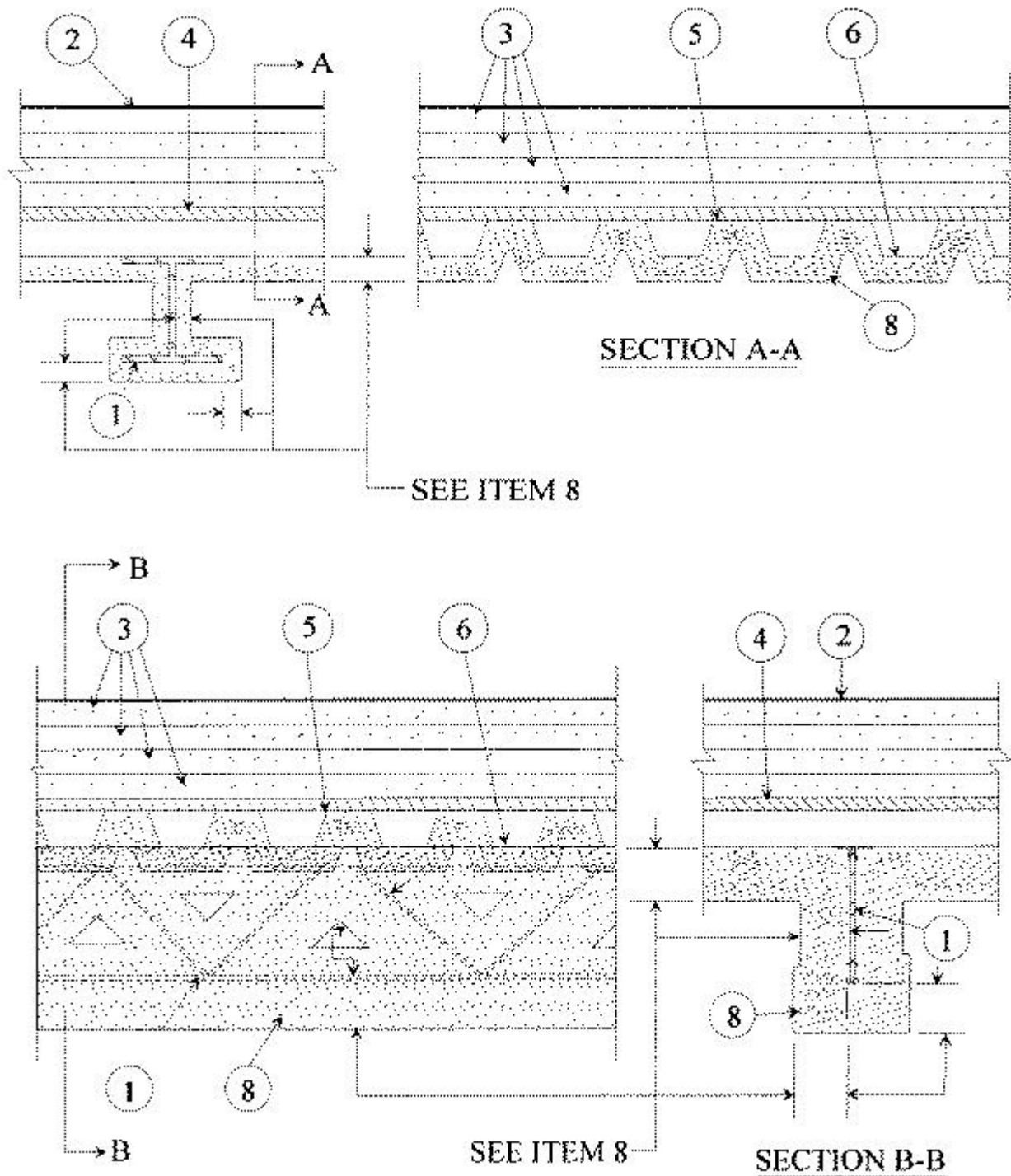
Restrained Assembly Ratings — 1, 1-1/2, and 2 Hr (See Item No. 8).

Unrestrained Assembly Ratings — 1, 1-1/2 and 2 Hr (See Item 8).

Unrestrained Beam Ratings — 1, 1-1/2, and 2 Hr (See Item 8).

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. **Steel Supports** — W6X16 steel beam min size or 10K1 or 12K3 steel joists. Min web area of 0.441 sq in. for the 12K3 joist. Bridging in accordance with SJ1 Specifications, welded to top and bottom cords of each joist.

2. **Roof Covering*** — Consisting of hot mopped or cold application materials compatible with insulation(s) described herein which provide Class A, B or C coverings. See Building Materials Directory — **Roof Covering Materials*** (TEVT) for list of manufacturers.

2A. **In lieu of Item 2, roof covering consisting of single-ply Roofing Membrane*** — that is either ballasted, adhered or mechanically attached as permitted under the respective manufacturer's Classification. See Fire Resistance Directory — **Roofing Membranes*** (CHCI) for list of manufacturers.

2B. **Metal Roof Deck Panels*** — (Not Shown) — In addition to or in lieu of Items 2 or 2A, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See **Metal Roof Deck Panels*** (CETW) category in the Fire Resistance Directory for names of manufacturers.

3. **Foamed Plastic*** — Min 1 in. thick, max 2.5 pcf, polystyrene foamed plastic insulation boards secured to the wallboard with asphalt glaze coat or **Adhesive***. No max overall thickness. **Adhesive*** applied at a rate of 0.4 gal/100 sq ft. (Note: Adhesive and/or asphalt glaze coat may be omitted when Item 2A is used). See **Foamed Plastic** (BRYX) category in the Building Materials Directory or **Foamed Plastic** (CCVW) category in the Fire Resistance Directory for names of manufacturers.

4. **Gypsum Board** — Nom 5/8 in. thick (Classified or Unclassified), supplied in 4 ft wide sheets. Installed perpendicular to the steel roof deck with joints staggered and occurring over the crests of the roof deck. Secured to the deck with **Adhesive*** applied at a rate of 0.4 gal/100 sq ft (Note: Adhesives may be omitted when Item 2A is used.) See **Adhesive*** category for names of manufacturers.
CABOT MANUFACTURING ULC ([View Classification](#)). — CKNX.R25370

AMERICAN GYPSUM CO ([View Classification](#)). — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO ([View Classification](#)). — CKNX.R19374

CERTAINTED GYPSUM INC ([View Classification](#)). — CKNX.R3660

CGC INC ([View Classification](#)). — CKNX.R19751

CERTAINTED GYPSUM INC ([View Classification](#)). — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C ([View Classification](#)). — CKNX.R2717

LOADMASTER SYSTEMS INC ([View Classification](#)). — CKNX.R11809

NATIONAL GYPSUM CO ([View Classification](#)). — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM ([View Classification](#)). — CKNX.R7094

PANEL REY S A ([View Classification](#)). — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD ([View Classification](#)). — CKNX.R19262

THAI GYPSUM PRODUCTS PCL ([View Classification](#)). — CKNX.R27517

UNITED STATES GYPSUM CO ([View Classification](#)). — CKNX.R1319

USG BORAL DRYWALL SFZ LLC ([View Classification](#)). — CKNX.R38438

USG MEXICO S A DE C V ([View Classification](#)). — CKNX.R16089

4A. As an alternate to Item 4 — (not shown) 1/2 in. thick, 1.8 psf min. density. **Gypsum Board** (Classified or Unclassified) supplied in 4 ft wide sheets. Installed perpendicular to the steel roof deck with joints staggered and occurring over the crests of the roof deck. May be secured to the deck mechanically or with adhesive. Max 2.5 pcf density polystyrene Foamed Plastic* insulation boards secured to the wallboard with asphalt glaze coat or adhesive. For ratings of 1 h, any type of Foamed Plastic* may be used in addition to the expanded polystyrene. See Gypsum Board (CKNX) category for companies which provide Classified wallboard.

5. **Vapor Retarder — Sheathing Material*** — (Optional) — Vinyl film or paper scrim vapor barrier, applied to roof deck with **Adhesive***. **Adhesive*** applied in nom 1/2 in. wide ribbons at a rate of 0.4 ga/100 sq ft. See **Adhesive*** (BYWR) category for names of manufacturers. See **Sheathing Material*** (CHIZ) category for names of manufacturers. (Note: **Adhesives* may be omitted when Item 2A is used.**)

6. **Steel Roof Deck** — (Unclassified) — Min 1-1/2 in. deep and 24 in. wide, galv fluted steel deck. Min gauge is 22 MSG. Flutes approximately 6 in. OC crests approximately 3-5/8 in. wide, valleys approximately 2-5/8 in. wide. Attached to supports with welds spaced 12 in. OC. Adjacent units button-punched or welded together 36 in. OC along side joints; or **Classified Steel Floor and Form Units*** — 1-1/2 in. deep, nom 24 to 36 in. wide, galv fluted steel deck. Min gauge is 22 MSG. Attached to supports with welds spaced 12 in. OC. Adjacent units button-punched or welded together 36 in. OC along side joints .

CANAM GROUP INC — Type P-3606 or P-3615; 36 in. wide Types 1.5B, 1.5BI

CANAM STEEL CORP — Type P-3606 or P-3615

VULCRAFT, DIV OF NUCOR CORP — Galv or ptd/ptd Types 1.5B, 1.5BI, 1.5PLB

7. **Metal Lath** — (Optional) — Metal lath used to facilitate the spray application of the Spray-Applied Fire Resistive Material to the steel joists. Diamond mesh, 3/8 in. expanded steel, min 1.7 lb/sq yd fastened to one side of joists using No. 18 SWG steel wire, located at midheight of every other member or 18 in. OC whichever is less. Both sides of lath must be completely coated with Spray-Applied Fire Resistive Material, but with no min thickness requirements.

7A. **Glassfiber Mesh** — (Optional — Not Shown) — As an alternate to metal lath (Item 7), min 3/32 in. square mesh coated fiberglass scrim fabric, weighing a min of 1.9 oz/sq yd shall be attached to one side of each joist web member. The method of attachment must be sufficient to hold the mesh and the protection material in contact with the joist during its application and curing. An acceptable method of attaching the mesh is by embedding the mesh in min 1/4 in. long beads of hot melted glue. The beads of glue shall be spaced a max 12 in. OC along the top chord of the bar joists. Another method of attachment is by use of 1-1/4 in. long, 1/2 in. wide hairpin clips formed from 0.064 in. diam steel wire, alternating from top to bottom of the joist web member.

8. **Spray-Applied Fire Resistive Materials*** — Applied by spraying with water in one coat to final untamped thickness as shown above, to steel surfaces which are free of dirt, oil and scale. Use of adhesive is required. Tamping is optional. Min avg density 13 pcf with min individual density 11 pcf for Types II, II HS, or DC/F. Min avg and min ind densities of 22 and 19 pcf, respectively, for Type HP. For method of density determination refer to Design Information Section.

The following table shall be used when Item 4 is used:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Deck	Protection Thkns In.		
				W6x16 Beam	10K1+ Joist	12K3+ Joist
1	1	1	5/8	5/8	1-1/8	1-1/16
1-1/2	1	1	1	13/16	1-9/16	—
1-1/2	1-1/2	1-1/2	1	13/16	1-9/16	—
2	1	1	1-7/16	1	1-5/8	—
2	2	2	1-7/16	1	1-11/16	—

+ — Bridging angles protected with same thickness applied to joist

The following table shall be used when Item 4A is used:

Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Unrestrained Beam Rating Hr	Protection Thkns In.		
			Deck	Beam	Joist (12K3)

1	3/4+	1	3/4	9/16	1-1/2
1	1	1	1	9/16	1-1/2
1/1/2002	1-1/2	1-1/2	1-1/2	15/16	1-7/8
2	1-1/2	1-1/2	1-13/16	15/16	1-7/8
2	2	2	1-13/16++	1-3/8	2-1/4
			1-7/8		

+Becomes 1 hour when spans of structural supports are less than or equal to 7 ft.

++Lower thickness applicable when spans of structural supports are less than or equal to 7 ft.

ISOLATEK INTERNATIONAL — Type DC/F, HP, II, or II HS, Type EBS or Type X adhesive/sealer optional.

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