

## FIRE-RESISTANCE DESIGN

### Assembly Usage Disclaimer

### **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. U703**

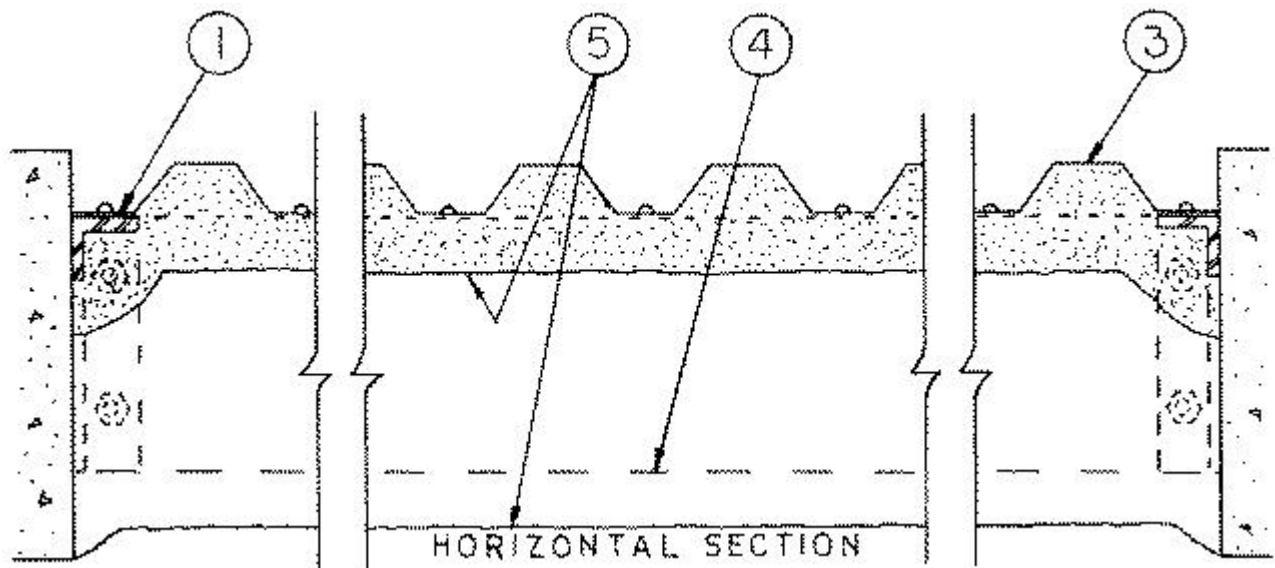
October 24, 2017

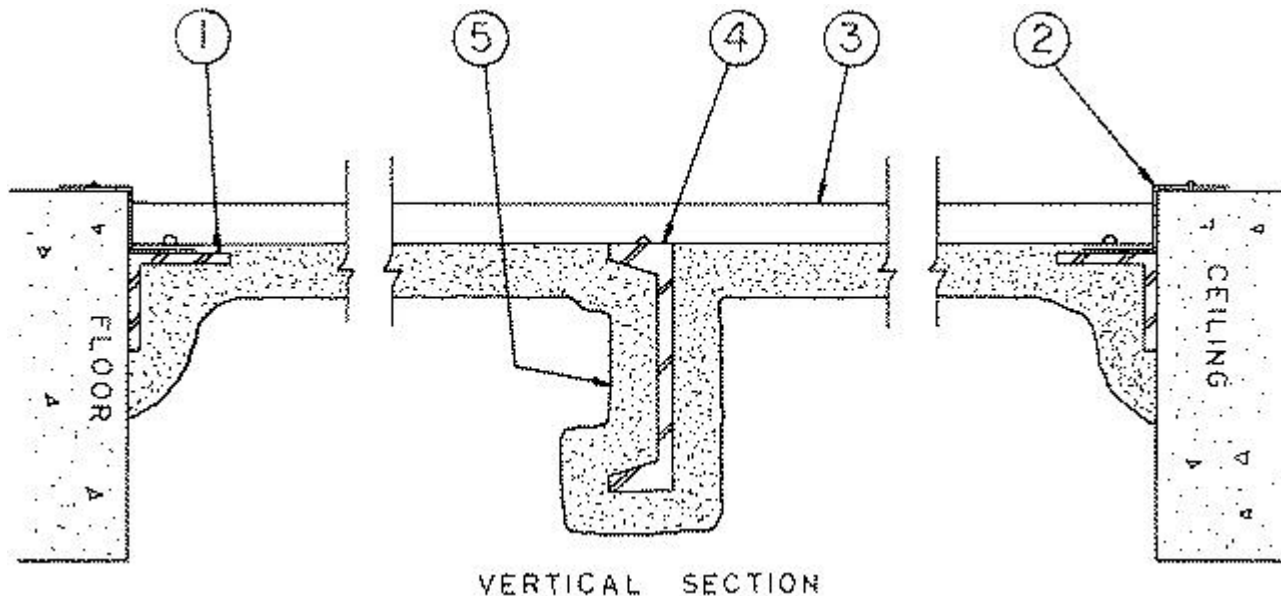
**Exposed To Fire On Cementitious Face Only**

**Nonbearing Wall Rating — 1, 1-1/2, 2, 3 or 4 HR.**

**(See Item 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. **Supporting Angles** — 3-3/8 by 3-3/8 by 1/4 in. steel angles placed along top and bottom of wall, attached to masonry with 1/4 in. diam by 1-1/2 in. long nailable fasteners with lead plugs spaced 24 in. OC; 2 by 2 by 3/16 in. steel angles placed along sides of assembly, attached to masonry expansion shields spaced 5 ft OC.

2. **Flashing Angles** — Min No. 24 MSG galv steel formed into a Z profile with 1 and 1-1/2 in. legs and 2 in. web, located along top and bottom of wall, 1-1/2 in. leg attached to facing units. Angles attached to masonry with 1/4 in. diam by 1-1/2 in. long nailable fastener with lead plugs spaced 40 in. OC.

3. **Facing Units** — Min 0.020 in. thick (26 MSG) galv steel facing units with 1-1/2 in. deep flutes 6 in. OC. Panels fastened to support angles and reinforcing channel through flashing angles with 1/4 in. diam by 3/4 in. long self-tapping steel screws located in every flute in the horizontal direction.

4. **Reinforcing Channel** — C8 x 11.5 cold-rolled steel channel spaced 5 ft OC, attached to 2 by 2 by 3/16 in. steel angle with two 1/4 in. diam by 11/2 in. long bolts and nuts at each end. The angles were attached to side of masonry by two 5/16 in. diam by 21/2 in. long steel lag bolts with steel expansion shields at each end.

5. **Spray-Applied Fire Resistive Materials\*** — Prepared by mixing with water according to instructions on each bag of material and applied to reinforcing channel and one side of the wall, which must be free of dirt, oil or loose scale, to final thicknesses shown on the table below. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 19/18 pcf respectively for Types 7GP and 7HD. For method of density determination, refer to the General Design Information Section.

Classification Hr	Mtl Thkns In.	
	Facing Unit	Reinforcing Channel
1	1-5/8	1-1/8
1-1/2	2-5/16	1-3/8
2	2-11/16	1-5/8

3	3-1/16	2-1/8
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**PYROK INC** — Type LD.

**SOUTHWEST FIREPROOFING PRODUCTS CO** — Types 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 9EF, 9GP, 9MD.

**5A. Alternate Spray-Applied Fire Resistive Materials\*** — Prepared by mixing with water according to instructions on each bag of material and applied to reinforcing channel and one side of the wall, which must be free of dirt, oil or loose scale, to final thicknesses shown on the table below. Min avg and min ind density of 15/14 pcf respectively. For method of density determination, refer to the General Design Information Section.

Classification Hr	Mtl Thkns In.	
	Facing Unit	Reinforcing Channel
1	1-5/8	1-1/8
1-1/2	2-3/16	1-3/8
2	2-5/8	1-5/8
3	3-1/16	2-1/8

**GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY, MK-6s, Monokote Acoustic 1, RG.

**GCP KOREA INC** — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, Monokote Acoustic 1.

**5B. Alternate Spray-Applied Fire Resistive Materials\*** — Prepared by mixing with water according to instructions on each bag of material and applied to reinforcing channel and one side of the wall, which must be free of dirt, oil or loose scale, to final thicknesses shown on the table below. Min avg and min ind density of 22/19 pcf respectively. For method of density determination, refer to the General Design Information Section.

Classification Hr	Mtl Thkns In.	
	Facing Unit	Reinforcing Channel
1	1-5/8	1-1/8
1-1/2	2-3/16	1-3/8
2	2-5/8	1-5/8
3	3-1/16	2-1/8

**GCP APPLIED TECHNOLOGIES INC** — Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY.

**GCP KOREA INC** — Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY.

**5C. Alternate Spray-Applied Fire Resistive Materials\*** — Prepared by mixing with water according to instructions on each bag of material and applied to reinforcing channel and one side of the wall, which must be free of dirt, oil or loose scale. Application of protection material to the steel facing units requires the installation of Expanded Metal Lath. Final thicknesses are shown on the table below. Min avg and min ind density of 40/36 pcf respectively. Min avg and min ind density of 40/36 pcf respectively for Types Z-146, Z-146PC and Z-146T cementitious mixture. Min avg and min ind density of 50/45 pcf respectively for Types Z-156, Z-156T and Z-156PC. For method of density determination, refer to the General Design Information Section.

Classification Hr	Mtl Thkns In.	
	Facing Unit	Reinforcing Channel
1	1-1/2	1-1/8
1-1/2	2-3/16	1-3/8
2	2-9/16	1-5/8
3	3-1/16	2-1/8

**GCP APPLIED TECHNOLOGIES INC** — Types Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC.

**GCP KOREA INC** — Type Z-146.

**5D. Alternate Spray-Applied Fire Resistive Materials\*** — Prepared by mixing with water according to instructions on each bag of material and applied to reinforcing channel and one side of the wall, which must be free of dirt, oil or loose scale, to final thicknesses shown on the table below. Min avg and min ind density of 15/14 pcf respectively for Grace and GCP Types MK-6/CBF, MK-6/ED, MK-6/HY and MK-6s. Min avg and min ind density of 22/19 pcf respectively for Grace and GCP Types Z-106, Z-106/G and Z-106/HY. Min avg and min ind density of 40/36 pcf respectively for and GCP Grace Type Z-146. For method of density determination, refer to the General Design Information Section.

Classification Hr	Mtl Thkns In.	
	Facing Unit	Reinforcing Channel
4	4-7/16	2-9/16

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**GCP APPLIED TECHNOLOGIES INC** — Types MK-6/HY, MK-6s, Z-106, Z-106/G, Z-106/HY, Z-146.

**GCP KOREA INC** — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6s, Z-106, Z-106/G, Z-106/HY, Z-146.

**6. Metal Lath** — (Not Shown) — Required when Types Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC are used. Optional for the remaining spray-applied fire resistive materials - Required when Types Z-146, Z-146T, Z146PC, Z-156, Z-156T and Z-156PC are used. Optional for the remaining spray-applied fire resistive materials - Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to interior side of facing units with No. 12 by 3/8 in. pan head self-drilling, self-tapping screws and steel washers with an outside diam of 1/2 in. screws spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.

**\* 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 2017-10-24

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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 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.

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