

BYBU.XR701 - Fire-resistance Ratings - ANSI/UL 1709

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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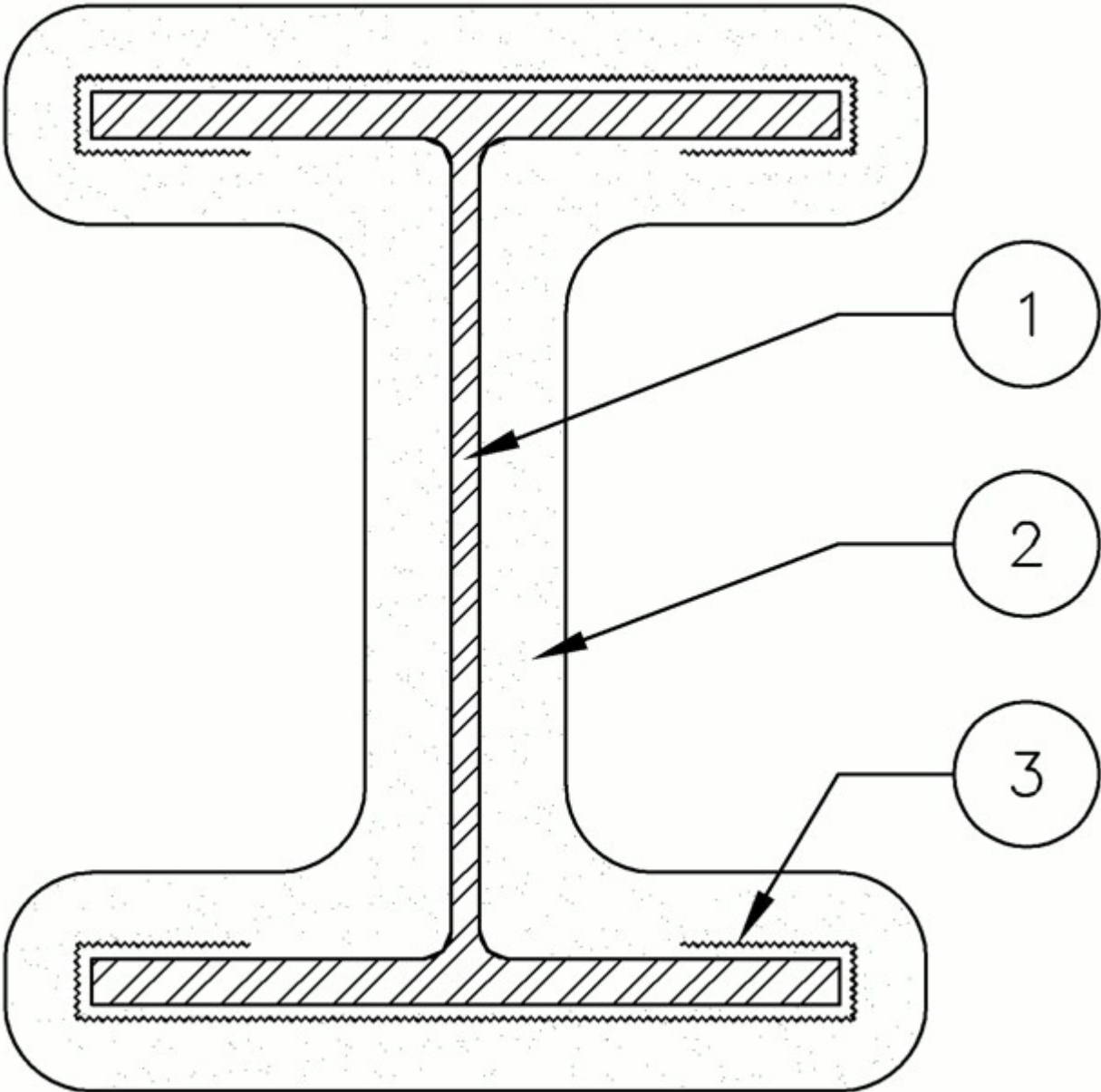
[See General Information for Fire-resistance Ratings - ANSI/UL 1709](#)

Design No. **XR701**

February 27, 2023

Ratings 3/4, 1, 1-1/2, 2, 2-1/2, 3 and 4 Hr.

*** 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 Column** — Min. size of column, Type W10x49.

2. **Spray-Applied Fire Resistive Materials*** — See table below for appropriate thickness. Prepared by mixing with water according to instructions on each bag of mixture. Mixture can be spray or trowel applied in one or more coats to steel, mesh and lath surfaces. Min avg density off 55 pcf with min ind value of 50 pcf. For method of density determination, see Design Information Section, Sprayed Material. Surface of material may be lightly finished with a trowel. Types 241 and 241 HD investigated for UL 2431 Classification Category I-A and Exterior Environmental Purpose, additionally evaluated for acid and solvent spray exposures.

Min Required Thickness (inch) for Hourly Rating Period (min)

Column Size	W/D	45	60	90	120	150	180	240
W10x49	0.84	1/2	11/16	15/16	1-1/8	1-5/16	1-3/8	1-9/16

CARBOLINE CO — Type 241, Type 241 HD.

CARBOLINE KOREA LTD — Type 241, Type 241 HD.

CARBOLINE (INDIA) PVT LTD — Type 241, Type 241 HD.

PERLITA Y VERMICULITA SLU — Type 241, Type 241 HD.

STONCOR MIDDLE EAST L L C — Type 241, Type 241 HD.

STONCOR SOUTH CONE S A — Type 241, Type 241 HD.

3. **Reinforcing Mesh or Metal Lath** — Reinforcing mesh No. 19 SWG galv steel wire twisted to form 2 in. hexagons with straight No. 16 SWG galv steel wire woven into mesh and spaced 3 in. apart for stiffness. Mesh placed around column flanges and secured in position by means of furring clips or PD Clips (Item No. 4 or 4A). In lieu of the reinforcing mesh, galv expanded steel lath, weighing 3.4 lb per sq yd, may be used. Lath secured to column by bending tight around flanges a min of 1-1/2 in. toward web of column or with PD Clips.

4. **Furring Clips** — (Not Shown) Required only when reinforcing mesh is used. Clips consist of No. 11 SWG galv steel wire, 1 in. deep with 1-1/2 and 1-3/4 in. long legs. Clips spaced vertically 12 in. O.C. on column flange edges over reinforcing mesh.

4A. **PD Clips** — (Optional, Not Shown) — For use with either reinforcing mesh or metal lath. To be used in conjunction with plastic-nosed corner bead (Item 5A). Clips spaced vertically 12-14 in. OC on column flange edges over reinforcing mesh and to be fully embedded in Spray-Applied Fire Resistive Materials (Item 2) and installed per manufacturer's instructions.

5. **Corner Bead** — (Optional, Not Shown) Double corner bead may be installed in accordance with Carboline's approved application guide.

5A. **Corner Bead** — (Not Shown) Required for use with PD Clips (Item 4A). Plastic-nosed corner bead mounted to PD Clips and installed per manufacturer's instructions.

6. **Repair and Patch** — (Not Shown) — For use with 3.4 lb metal lath only, not evaluated for use with Item 4 and Item 5 — Type 341 used as a repair option to pre-applied Type 241 and/or 241HD, to satisfy hourly ratings detailed in Design XR701 up to and including 3 hours. Thickness of Type 341 repair material should be equivalent to the existing Type 241 and/or 241HD coating thickness. The total surface area of the repair area must not exceed 8 ft² (0.74 m²). Refer to manufacturer's installation instructions for installation guidance.

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