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. **P306**

October 20, 2026

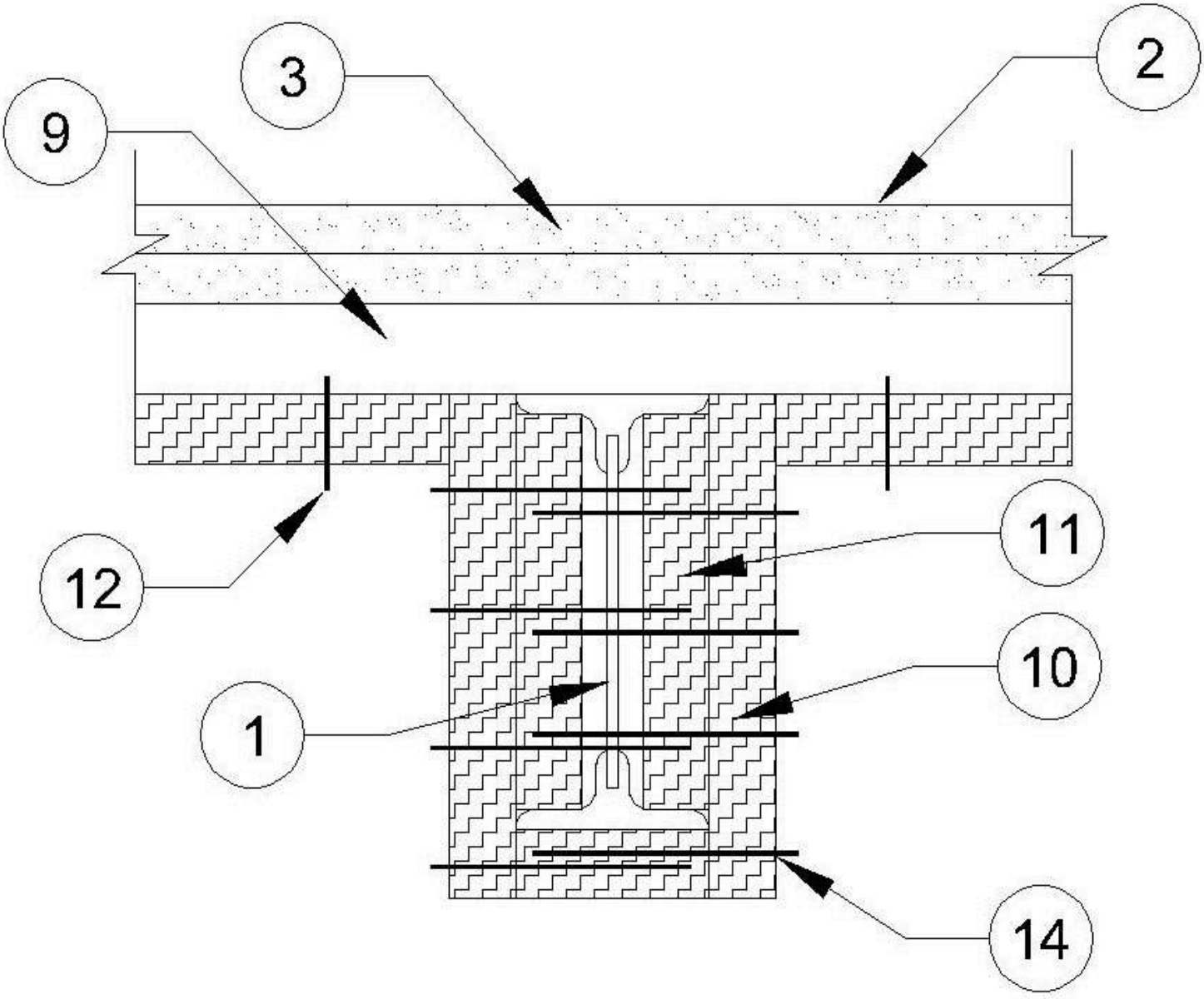
Restrained Assembly Rating — 1, 1-1/2, and 2 Hr (See Item 10)

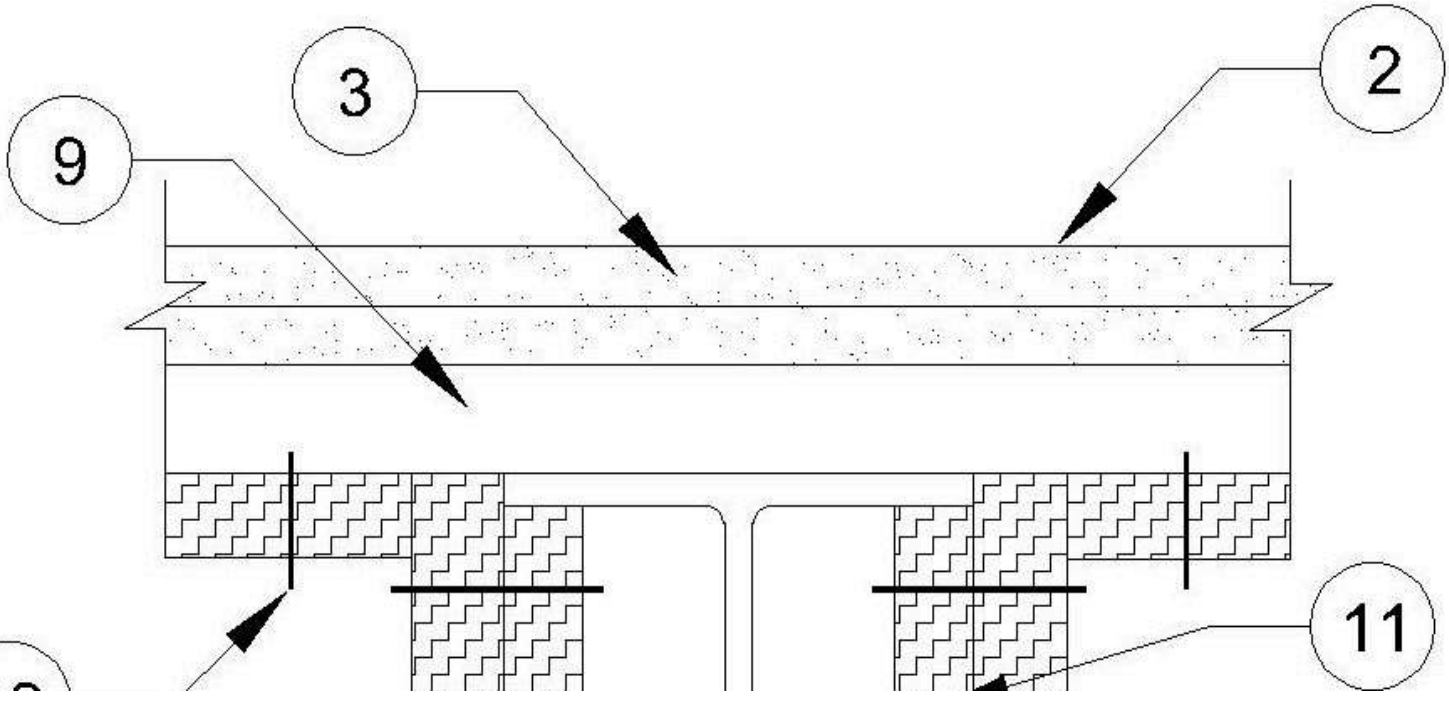
Unrestrained Assembly Rating — 1, 1-1/2, and 2 Hr (See Item 10)

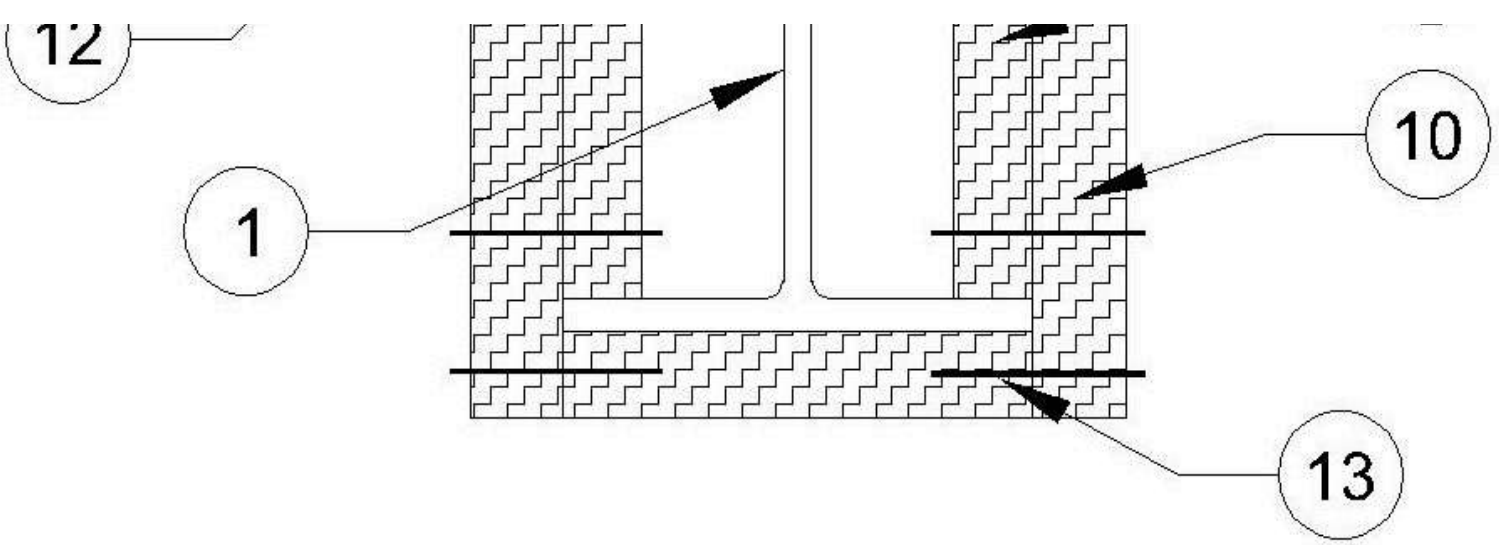
Unrestrained Beam Rating — 1, 1-1/2, and 2 Hr (See Item 10)

Loading Determined by Allowable Stress Design Method or Load and Resistance Factor Design Method published by the American Institute of Steel Construction, or in accordance with the relevant Limit State Design provisions of Part 4 of the National Building Code of Canada — 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.**


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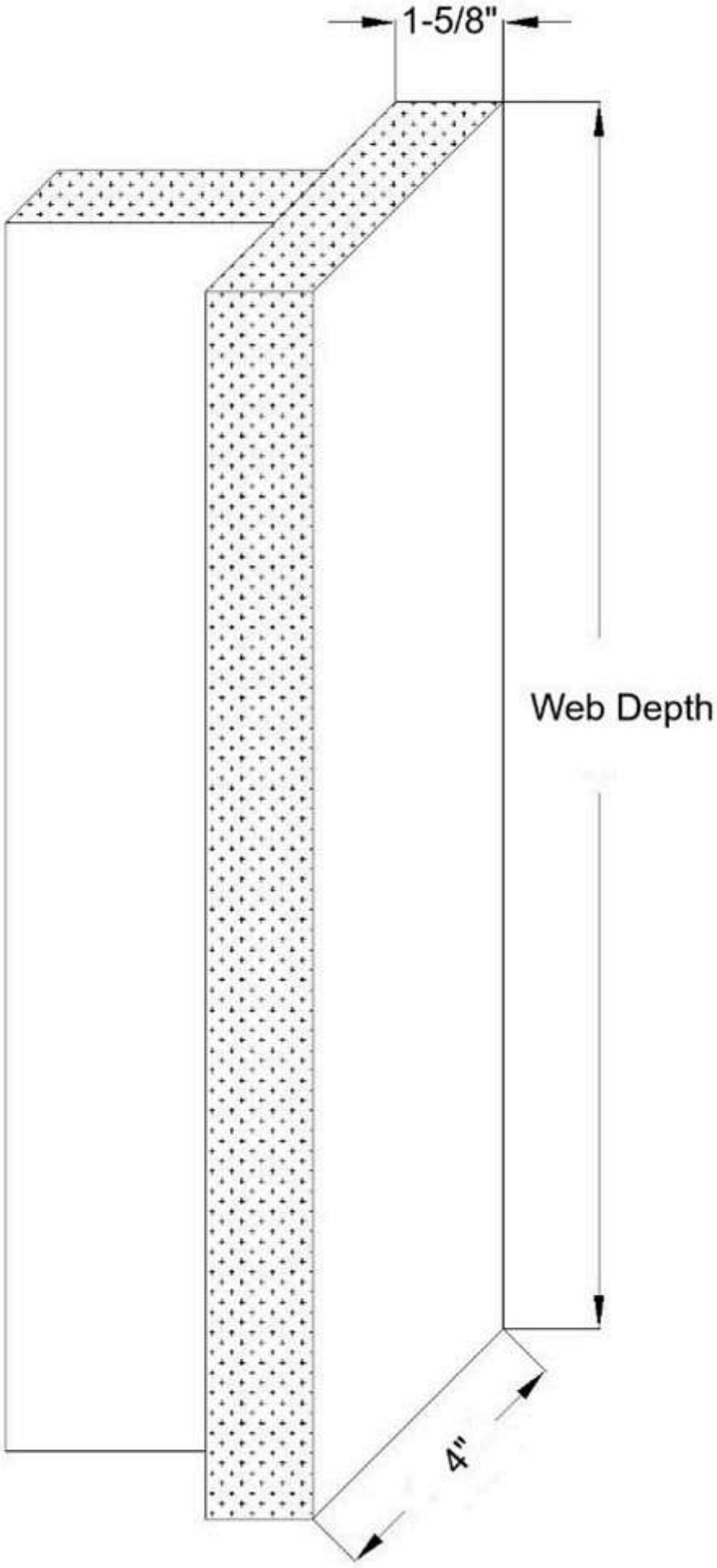

1-5/8"
Web Depth
4"

Figure 1: Tee noggings for beam webs deeper than 18”

1. **Steel Supports —** Min size W6x16 beam, or min size 10K1 steel joists. Maximum allowable yield stress of 50 ksi. For beams, use box configuration shape factor to determine equivalent or larger sizes. Joist constructed with min 1-1/2 x 1-1/2 x 0.122 in. top chord angles, min 9/16 in. round bars for webs and min 1 x 1 x 0.109 in. bottom chord angles. For joists, determine shape factor of individual top chord, web and bottom chord members. Alternate joists shall have members with equivalent or larger shape factors.

2. **Roof Covering —** Consisting of hot mopped or cold application bituminous materials compatible with the insulation(s) described herin which provide Class A, B, or C coverings. See **Roofing Materials** and **Roof Covering Materials** (TEVT).

2A. **Roof Covering — (In lieu of Item 2, Not Shown) — R**oof covering consisting of single ply **Roofing Membrane*** that is ballasted, adhered, or mechanically attached as permitted under the respective manufacturer's Classification. See **Roofing Membranes** (CHCI).

3. **Roof Insulation — Foamed Plastic* —**Polyisocyanurate foamed insulation boards, nominal 48 or 96 in., applied in one or multiple layers. Minimum thickness is 2 in. with no limit on maximum overall thickness. Boards to be installed with end joints staggered a minimum of 6 inches in adjacent rows. When applied in more than one layer, each layer to be offset in both directions from layer below a minimum of 6 inches in order to lap all joints.

ATLAS ROOFING CORP — ACFoam II, Tapered ACFoam II, Tapered ACFoam II NH, ACFoam III, ACFoam III NH, Tapered ACFoam III NH, ACFoam IV, ACFoam Supreme, ACFoam Supreme NH, ACFoam Recover Board, ACFoam Recover Board NH, Tapered ACFoam III

Amrize Building Envelope LLC — "ISO 95+ GL", "ISO 95+ FK", "ISO 95+ CAN", "ISO 95+ GL NH", "ISOGARD HD Composite Board", "RESISTA", "ISOGARD GL", "ISOGARD CG", Firestone Iso 95+CAN, Tapered Firestone Iso 95+CAN

BEACON SALES ACQUISITION, INC — TRI-BUILT ISO VT, TRI-BUILT ISO VT 25 PSI, TRI-BUILT ISO VT CGF, TRI-BUILT ISO VT CGF 25 PSI.

CARLISLE SYNTEC SYSTEMS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types HP, HP-H, HP-N, HP-W, SecurShield CD, InsulBase NH, SecurShield NH, SecurShield HD Composite NH, Polyiso HP-F NH, InsulBase RL, SecurShield RL, Polyiso HP-F, SecurShield HD Composite RL.

GAF — EnergyGuard™ RA

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — H Shield, H-Shield-F, H-Shield-CG, H-Shield-C, H-Shield Premier, H-Shield HD Composite, H-Shield HD Composite CG, H-Shield RL, H-Shield CG RL, H-Shield HD Composite CG RL, H Shield NH, H-Shield-F NH, H-Shield-CG NH, H-Shield-C NH, H-Shield Premier NH, H-Shield HD Composite CG NH

JOHNS MANVILLE — ENRGY 3 25 psi, ENRGY 3, Tapered ENRGY 3, Tapered ENRGY 3 25 psi, ENRGY 3 AGF, Tapered ENRGY 3 AGF, ENRGY 3 25 psi AGF, Tapered ENRGY 3 25 psi AGF, ENRGY 3 CGF, Tapered ENRGY 3 CGF, ENRGY 3 25 psi CGF, Tapered ENRGY 3 25 psi CGF, ENRGY 3.E, ISO-3, Tapered ISO-3, ValuTherm, Tapered ValuTherm, ValuTherm 25 psi, Tapered ValuTherm 25 psi, ValuTherm AGF, Tapered ValuTherm AGF, ValuTherm 25 psi AGF, Tapered ValuTherm 25 psi AGF, ValuTherm CGF, Tapered ValuTherm CGF, Tapered ValuTherm 25 psi CGF.

KINGSPAN ROOFING & WATERPROOFING LLC — Kingspan ISO GF, Kingspan ISO GF Tapered, Kingspan ISO CG, Kingspan ISO CG Tapered

MARTIN FIREPROOFING CORP — "Perform-A-Deck I"

MULE-HIDE PRODUCTS CO INC — Poly ISO 1, Tapered Poly ISO 1, Poly ISO 1-DWD, Tapered Poly ISO 1-DWD, Poly ISO 1-HD, Poly ISO 1-HD90, Poly ISO 1-HD-Composite, POLY ISO 2, POLY ISO 2 CG, POLY ISO 2 CG Tapered.

POLYGLASS USA INC — Polytherm H, Polytherm CG, Polytherm HD Composite CG

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Multi-Max-3, Multi-Max FA-3, Ultra-Max, Ultra-Max Plus, Tapered Ultra-Max Plus, Tapered Thermaroof-3, Tapered Thermaroof FA-3, Tapered Ultra-Max.

SIKA SARNAFIL INC — Sarnatherm-R Insulation, Sarnatherm-R CG Insulation, Sarnatherm-R Tapered Insulation, Sarnatherm-R CG Tapered Insulation.

SOPREMA INC — Sopra-ISO s, Sopra-ISO s Tapered, Sopra-ISO+ s, Sopra-ISO+ s Tapered, Sopra-ISO H+ s and Sopra-ISO H+ s Tapered.

VERSICO INC — MP-H, VersiCore, WeatherBond XP Polyiso, Polyiso F, WeatherBond XP-HF, SecurShield, WeatherBond XFP Polyiso, SecurShield CD, WeatherBond XFP CD, SecurShield HD Composite, WeatherBond XFP HD Composite, VersiCore NH, WeatherBond XP NH Polyiso, SecurShield NH, WeatherBond XFP NH Polyiso, VersiCore RL, SecurShield RL, Polyiso F NH, WeatherBond XP-F NH, SecurShield HD Composite RL

4. **Gypsum Board —Classified or Unclassified — (Optional - Not Shown)** — Supplied in sheets nom 2 by 4 ft to 4 by 12 ft by nom 5/8 in. thick. Min weight 2 lb per sq ft. Applied perpendicular to steel roof deck direction with adhesive or laid loosely. End joints to occur over crests of steel roof deck with end joints staggered 2 ft in adjacent rows. See **Gypsum Board** (CKNX) Category for names of manufacturers.

5. **Vapor Retarder - Sheathing Material* — (Optional - Not Shown) —**Vinyl film or paper scrim vapor barrier, applied to steel roof deck with adhesive (Item 5), asphalt (Item 6) or laid loosely, overlapped approximately 2 inches on adjacent sheets. See **Sheathing Material** (CHIZ) Category for names of manufacturers.

6. **Adhesive* — (Optional - Not Shown) —**The vapor retarder or the first layer of roof insulation may be secured with adhesive to the steel crest surfaces. Also used to attach the first layer of insulation to vapor barrier and each additional layer of insulation. Applied in 1/2 in. wide ribbons 6 inches OC at 0.4 gal per 100 sq. ft. See **Adhesive** (GYWR) Category for names of manufacturers.

7. **Asphalt or Coal Tar Pitch* — (Optional - Not Shown) —**The vapor retarder or the first layer of roof insulation may be secured with asphalt or coal tar pitch to the steel crest surfaces at a maximum rate of 15 lbs per 100 sq. ft. Also used to attach the first layer of insulation to vapor retarder and each additional layer of roof insulation applied at a maximum rate of 25 lbs per 100 sq. ft.

8. **Mechanical Fasteners — (Optional - Not Shown) —**Mechanical screw-type fastener with metal or plastic washer designed for the purpose may be used to attach one or more layers of insulation to the steel roof deck. Fasteners shall penetrate deck no more than 1/2 in.

9. **Steel Roof Deck — (Unclassified) —**Minimum 1-1/2 in. deep and 36 in. wide galvanized fluted steel deck. Minimum gauge is No. 22 MSG, Maximum allowable yield stress of 50 ksi. Ends overlapped at supports minimum 4 in. and welded to supports 12 in. OC and at side laps. Side laps fastened with 1/2 long hex head, self-drilling, self-tapping steel screws placed a max of 33 in. OC.

10. **Mineral and Fiber Boards* —**Mineral fiber boards applied in a single layer at the thicknesses shown below.

For deck application, attached with self-drilling screws and steel washers (Item 12). Board installed parallel to the deck flutes. Side joints to be centered along deck valleys. Side joints may be located along deck crests provided a fastener is applied to each adjacent valley.

For beam application, boards cut in various widths to be compatible with the size of beam being protected. Boards placed parallel with the flange of the beams are cut the width of the flange. Boards placed parallel with the web of the beams are cut the depth of the beam (web side) plus the board thickness.

For joist application, boards cut in various widths to be compatible with the size of member being protected. Boards placed parallel with the bottom chords of the joist are cut the width of the bottom chords or width of the bottom chords plus the noggin protrusion beyond the bottom chords, whichever is greater. Boards placed parallel to the length of the joists are cut the depth of the joist plus the board thickness.

Min. Thickness of Type MONOKOTE® FIREPROTECT™ on Steel Roof Deck

Restrained Assembly Rating	Unrestrained Assembly Rating	Min 2 in. of Roof Insulation	Min 4 in. of Roof Insulation
1	1	2-3/8 in (60 mm)	-
1-1/2	1-1/2	3-5/8 in (90 mm)	-
2	2	-	4 in (100 mm)

Min. Thickness of Type MONOKOTE® FIREPROTECT™ on Steel Member

Restrained Assembly Rating	Unrestrained Assembly and Beam Rating	Min W6 x 16 Steel Beam*	Min 10K1 Steel Joist
1	1	1 in (25 mm)	2-7/8 in (70 mm)
1-1/2	1-1/2	1-5/8 in (40 mm)	4 in (100 mm)
2	2	1-5/8 in (40 mm)	-

GCP APPLIED TECHNOLOGIES INC — Type MONOKOTE® FIREPROTECT™

11. **Noggings —**1-5/8 in. (40 mm) thick pieces of mineral and fiber board (See Item 10). Cut to 4 in. (100 mm) wide and to length to friction fit between beam flanges or joist angles.

Noggings for Beams: Noggings to be placed at end of beam and at center of vertical butted joints of adjacent mineral and fiber board sections (Item 10). Noggings spaced at a maximum of 24 in (610 mm) OC. For beams with webs deeper than 18 inches (457 mm), use tee-shaped noggings as shown in Figure 1. The back of the noggings shall be a minimum of 1-5/8 in (40 mm) thick and extend back to the web or a minimum depth of 4 in (100 mm).

Noggings for Joist: Noggings to be placed at end of joist and at center of vertical butted joints of adjacent mineral and fiber board sections (Item 10). Noggings spaced at a maximum of 16 in (406 mm) OC and shall be aligned on both faces of the joist.

12. **Fasteners for Deck —** Self-drilling pan head screws, 1/2 to 1 in. (12 to 25 mm) longer than mineral and fiber board thickness applied to the deck, with 1-1/2 in (38 mm) diameter galvanized steel washers. Fasteners to be spaced nominally 6 inches (152 mm) or less from the side joints and nominally 3 inches (76 mm) from the end joints, nominally 6 in (152 mm) OC perpendicular to the deck flutes and nominally 14 in (356 mm) OC along the deck flutes. For board size of 47.2 in x 23.6 in (1200 x 600 mm), 4 rows of 3 fasteners. For board size of 47.2 in x 39.4 in (1200 x 1000 mm), 4 rows of 6 fasteners.

13. **Fasteners for Beam** — Spiral-screw like fixings, with a 0.75 in (19 mm) diameter head, 0.3 in (7.6 mm) diameter shaft and fabricated from a 0.06 in (1.5 mm) diameter wire, made in a variety of lengths.

For Web Board attachment to Noggings (Item 11): The web boards are fastened to the noggings with a min of 2 fasteners on each side of the joint and at intermediate noggings. Fasteners located nominal 1 in (25 mm) from inside of flanges and no more than 6 in (150 mm) OC. Fasteners to be located nominal 1 in (25 mm) from board ends. Fastener length shall penetrate completely through the noggings.

For Web Board attachment to Bottom Flange Boards (Item 10): The web boards secured to the bottom flange boards using fasteners spaced a max of 6 in (150 mm) OC. The fasteners are installed nominal 1 in (25 mm) from board ends and at mid-thickness of the bottom flange boards. Fastener length is a minimum of twice the board thickness, with a minimum

length of 2-3/8 in (60 mm). For beams with flanges wider than 12 inches (300 mm), bottom flange boards require additional support in the form of welded 1/8 in. dia. steel pins used with 1-1/2 in. dia. non-return washers along the centerline of the flange surface, spaced at a maximum 2 ft. (610 mm) OC.

When tee noggings are required: The face nogging shall be secured to the back nogging with minimum 3-1/8 in (80 mm) long fasteners, spaced 6 in (150 mm) OC.

14. **Fasteners for Joists —** Spiral-screw like fixings, with a 0.75 in (19 mm) diameter head, 0.3 in (7.6 mm) diameter shaft and fabricated from a 0.06 in (1.5 mm) diameter wire, made in a variety of lengths.

For Web Board attachment to Noggings (Item 11): The web boards are fastened to the noggings with a min of 3 fasteners on each side of the joint and at intermediate noggings. Fasteners located nominal 2 in (25 mm) from inside of angles with additional fasteners located no more than 3 in (76 mm) OC. Fasteners to be located nominal 1 in (25 mm) from board ends. Fastener length shall penetrate completely through the nogging and shall penetrate the adjacent nogging on the opposite side of the joist. Fastener locations can be adjusted by approximately 1 in (25 mm) to avoid interference with webs or fasteners from opposite face of the joist.

For Web Board attachment to Bottom Chord Boards (Item 10): The web boards shall be secured to the bottom chord boards using fasteners spaced a maximum of 6 in (150 mm) OC. The fasteners are installed nominal 1 in (25 mm) from board ends at mid-thickness of the bottom flange boards. Fastener length is a minimum of twice the board thickness. Fastener locations can be adjusted by approximately 1 in (25 mm) to avoid interference with fasteners from opposite face of the joist.

*** 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 2026-10-20

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