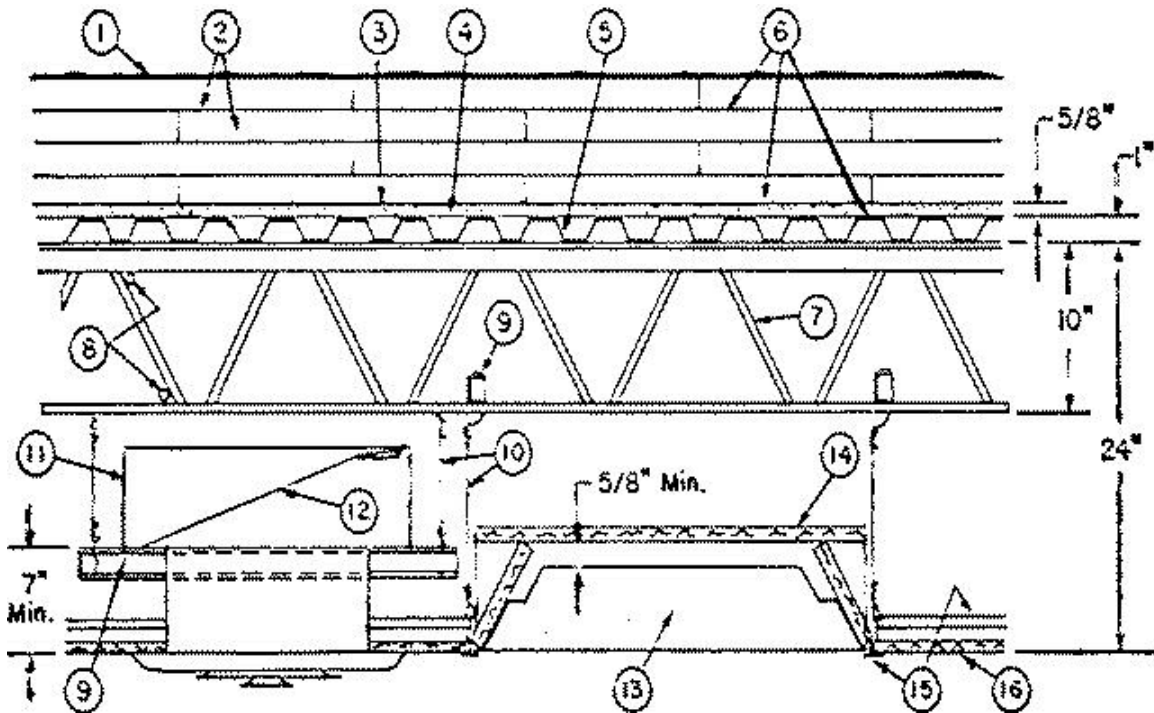


Restrained Assembly Ratings — 1 and 1-1/2 Hr.

(See Items 2, 11, 15D and 16)

Unrestrained Assembly Ratings — 1 and 1-1/2 Hr.

(See Items 2, 11, 15D and 16)



1. **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 Roofing Materials and Systems Directory-Roof Covering Materials (TEVT).

1A. **In lieu of Item 1, 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).

1B. **Metal Roof Deck Panels (Not shown)** — In addition to or in lieu of Item 1 or 1A, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See Fire Resistance Directory — Metal Roof Deck Panels (CETW).

2. **Building Units*** — Nominal 12x18 or 18x24 in. flat or tapered cellular glass blocks, applied in one or more layers with adhesive between layers or laid loosely. Blocks to be installed perpendicular to gypsum wallboard direction with end joints staggered 7-1/4 in. in adjacent rows. When applied in more than one layer, additional layers to be installed parallel to first layer with each row centered over joint of previous layer. End joints staggered 7-1/4 in. in adjacent rows. Min thickness 1-1/2 in. (No limit on max overall thickness). **For 1-1/2 Hr Restrained And Unrestrained Assembly Rating Only** — When Type PC acoustical material is used, min 2 in. thickness of roof insulation is required.

3. **Sheathing Material*** — Optional-Vinyl-film vapor barrier, applied with adhesive or laid on loosely gypsum wallboard. Adjacent sheets overlapped 2 in.

BMCA INSULATION PRODUCTS INC

3A. **Sheathing Material*** — (Optional) — In lieu of Item 3, a self-adhered rubberized asphalt roofing underlayment membrane which may be placed on top of the gypsum wallboard (Item 4) or on the roof insulation (Item 2),.

W R GRACE & CO - CONN

CONSTRUCTION PRODUCTS DIV — Grace Ice and Water Shield, Grace Select, Grace Ultra, and Grace Basik.

3B. **Sheathing Material*** — (Optional) — In lieu of Items 3 and 3A, a self-adhered rubberized asphalt roofing underlayment membrane which may be placed on top of gypsum wallboard or on the roof insulation (Item 2).

CARLISLE COATINGS & WATERPROOFING INC — CCW-707.

4. **Gypsum Board** — (Classified or unclassified) — Supplied in sheets nom 2 by 4 ft to 4 by 12 ft, by nom 5/8 in. thick. Min weight 2.0 psf. Applied perpendicular to steel roof deck direction with or without adhesive. 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. **Steel Roof Deck** — Min 1 in. deep, 25 in. wide, fluted galv steel deck. Min 24 MSG. Flutes approx 4 in. OC, crests approx 2-3/4 in. wide. Welded to supports with welding washers 12 in. OC. Side lap joints of adjacent units welded or secured together with No. 10 by 1/2 in. self-drilling, self-tapping steel screws midway between steel joists.

Classified Steel Floor and Form Units* — Noncomposite fluted, 24 MSG min, 27 to 36 in. wide, 1-5/16 in. deep galv steel units. Spacing of welds attaching units to supports shall not exceed 15 in. OC. Adjacent units welded together 24 in. OC along side joints.

CONSOLIDATED SYSTEMS INC — Types B, BI, F.

6. **Adhesive*** — Optional-May be applied between crests of steel roof deck and gypsum wallboard in 1/2 in. wide ribbons 8 in. OC at 0.4 gal per 100 sq ft. May also be applied in 1/2 in. wide ribbons 6 in. OC, at 0.4 gal per 100 sq ft, between gypsum wallboard and vapor barrier, between vapor barrier and cellular glass blocks, and between layers of cellular glass blocks.

BMCA INSULATION PRODUCTS INC

7. **Steel Joists** — Type 10J4 or 12K3, min size, spaced 48 in. OC and welded to end supports.

8. **Bridging** — Steel bars, 1/2 in. diam welded to top and bottom chords of each joist.

9. **Cold Rolled Channels** — No. 16 MSG cold-rolled steel channels, 1-1/2 in. deep with 9/16 in. flanges, placed on lower chord of joists and secured with 18 SWG galv steel wire. Installed perpendicular to joists, located as required to provide hanger wire attachment points.

10. **Hanger Wire** — No. 12 SWG galv steel wire, twist-tied to lower chord of joists or cold-rolled channels. Located 48 in. O.C. along main runners; additional hanger wires to occur at all four corners of light fixtures, at midpoint of cross tees adjacent to light fixtures and duct outlets, and adjacent to main runner splices.

11. **Air Duct** — No. 22 MSG min galv steel. Total area of duct openings not to exceed 255 sq in. per each 100 sq ft of ceiling area. Area of ind duct opening not to exceed 255 sq in. Max dimension of opening 18 in. Inside and outside faces of duct throat protected with 1/16 in. thick ceramic fiber paper laminated to the metal. For 1 Hr Restrained And Unrestrained Assembly Ratings Only — The ceramic fiber paper laminated to the inside and outside faces of the duct throat may be omitted. Duct supported by 1-1/2 in. deep, 16 MSG cold-rolled steel channels spaced not over 48 in. O.C. suspended by 12 SWG galv steel wire.

12. **Damper** — No. 16 MSG min galv steel, sized to overlap duct opening 2 in. min. Protected on both sides with 1/16 in. thick asbestos paper laminated to the metal and held open with a fusible link (Bearing the UL Listing Mark).

13. **Fixtures, Recessed Light** — (Bearing the UL Listing Mark). Fluorescent lamp type, steel housing, 2 by 4 ft size. Fixtures spaced so their area does not exceed 24 sq ft per 100 sq ft of ceiling area. Wired in conformance with the National Electrical Code. Fixtures and ballasts must be considered for these ambient temperature conditions before installation.

14. **Fixture protection — Acoustical Material*** — 5/8 in. thick, cut to form a five sided enclosure, trapezoidal in cross-section, approx 1/2 in. longer and wider and 5/8 in. higher than the light fixture housing. The fixture protection consists of a 23-3/4 by 47-3/4 in. top piece, two 6-3/4 by 47-3/4 in. side pieces and two 4-1/2 by 23-3/4 in. end pieces. The top edge of each fixture protection side piece may be provided with a 1 in. deep by 10 in. long notch near its midpoint. The side and top pieces are laid in place and the end pieces are held in place with three 8d nails spaced 8 in. O.C. (S)=Surface perforations.

ARMSTRONG WORLD INDUSTRIES INC — Type 5/8 in. P(S) or PC (S).

14A. **Fixture Stabilizer** — (Not shown) — For use with the Type 1650 metal pans (See Item 15A); one min 0.047 in. thick (16 MSG) galv steel channel yoke per light fixture, secured to the web at midspan of cross tee on each side of fixture.

14B. **Fixture Stabilizer** — (Not shown) (Optional) — Min. 0.020 in. thick (25 MSG) painted steel spacer bar formed as an angle with 1 in. legs and hemmed edges and slots perpendicular to and near the ends of the spacer bar for engaging over the bulb of the tees. Engaged over the bulb at midspan of the cross tees on each side of all light fixtures and over the bulb of the adjacent cross tee.

15. **Steel Framing Members*** — Main runners nom 12 ft long spaced 4 ft OC. Cross tees nom 4 ft long installed perpendicular to main runners and spaced 2 ft OC. For 1 Hr Restrained and Unrestrained Assembly Ratings 24 by 24 in. modules may be used with cross tees nom 2 ft long installed perpendicular to 4 ft cross tees and spaced 4 ft OC.

ARMSTRONG WORLD INDUSTRIES INC — Types AFG, AFG-A . Type GLBP (consisting of main runners, 4 ft cross tees and steel straps) for use with 24 by 48 in. Type P or PC lay-in panels.

BPB AMERICA INC — Types PAC, PCH, PCS

CHICAGO METALLIC CORP — Types 250, 260, 1250, 1260, 1850, 1860.

15A. **Steel Framing Members*** — Main runners nom 10 or 12 ft long, spaced 4 ft OC. Cross tees nom 4 ft long installed perpendicular to main runners and spaced 2 ft OC. For 1 Hr Restrained and Unrestrained Assembly Ratings, 2 by 2 ft lay-in panels may be used with nom 2 ft cross tees installed perpendicular to 4 ft cross tees at midspan, spaced 4 ft OC. Border panels supported at walls by min. 0.016 in. thick painted steel angle with 7/8 in. legs or min. 0.016 in. thick painted steel channel with a 1 by 1-9/16 by 1/2 in. profile.

CGC INTERIORS, DIV OF CGC INC — Types DXL, DXLZ, SDXL.

USG INTERIORS INC — Types DXL, DXLZ, SDXL.

15B. Steel Framing Members* — **Metal pans** — (Not shown) (Optional) — Channel-shaped metal pans in various colors and finishes, installed perpendicular to cross tees or main runners and spaced 4 or 6 in. OC. The flange edges of the metal pans engage and interlock with the vertical tabs of the corresponding grid adapters with tabs 4 or 6 in. OC (See Item 15B). End laps joints of the metal pans shall occur adjacent to main runners or cross tees. The metal pans shall each be supported by at least two main runners or cross tees.

CHICAGO METALLIC CORP — Type 1650.

15C. Steel Framing Members* — **Grid adapter** — (Not shown) (Optional) — For use with Type 1650 metal pans (See Item 15A). Angle shaped adapter with a looped return flange; installed parallel to cross tees or main runners by engaging return flange of adapter to the flange of the cross tee or main runner. The 48 or 24 in. long adapters are intended for use with cross tees or main runners, respectively.

CHICAGO METALLIC CORP — Type 1650.

15D. Steel Framing Members* — **Filler strips** — (Not shown) (Optional) — For use with Type 1650 metal pans. Filler strips are 0.018 to 0.024 in. thick, steel or aluminum, 13/32 or 5/8 in. deep by 3/4 in. wide, placed between the metal pans.

CHICAGO METALLIC CORP — Type 1650.

15E. Steel Framing Members* — 9/16 in. wide narrow flange grid may be used as an alternate to 15/16 in wide flange grid systems. Main runners, nom 12 ft long, spaced 4 ft O.C. Cross tees, nom 4 ft long, installed perpendicular to main runners and spaced 2 ft O.C. Cross tees, nom 2 ft long, installed perpendicular to 4 ft cross tees and spaced 4 ft O.C. For use with Type P, nom 24 by 24 in. square edge lay-in panels.

BPB AMERICA INC — Type PE, for 1 hr assembly and beam ratings only .

CHICAGO METALLIC CORP — Type 4050, for 1 hr assembly and beam ratings only.

16. Acoustical Material* — Nom 24 by 24 or 48 in. by 5/8 in. thick lay-in panels. Border panels supported at walls by min 0.016 in. thick 26 MSG painted steel angle with 1 in. legs; or, min 0.016 in. thick (26MSG) painted steel channel, 1-5/8 in. deep with 1 in. bottom flange and 3/4 in. top flange. (S)=Surface perforations.

Nom Panel Size	Restrained Assembly Rating Hr	Unrestrained Assembly Rating Hr	Acoustical Mtl Type
24x24 in.	1 hr.	1 hr.	P or PC
24x48 in.	1-1/2 hr.	1-1/2 hr.	P or PC

ARMSTRONG WORLD INDUSTRIES INC — Type 5/8 in. P (S) or PC (S).

17. Hold-Down Clips — (Not shown) — No. 24 MSG spring steel, placed over cross tees 2 ft O.C.

*Bearing the UL Classification Mark

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