

1. System No. 2

**Subflooring** — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

**Vapor Barrier** — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

**Vapor Barrier** — (Optional) - Nom 0.010 in. thick commercial-rinsed building paper.

**Finish Flooring** — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

**2. Trusses** — Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. Truss members secured together with min 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each both has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each both has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

**3. Gypsum Board** — Three layers of 5/8 in. thick by 4 ft wide gypsum board. Top layer boards installed with the long dimension perpendicular to trusses with end joints located under bottom of trusses. End joints in adjacent rows shall be staggered on adjacent trusses. Top layer boards secured to bottom chord of trusses with 1-5/8 in. long Type S bugle head screws, spaced max 8 in. OC. Screws located 1-1/2 to 2 in., and 3/4 in. from side and end joints, respectively. Bottom two layers of gypsum board installed perpendicular to furring channels with end joints centered on the furring channels. Middle layer boards secured to each furring channel with 1 or 1-1/4 in. long Type S-12 bugle head steel screws spaced max 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from side and end joints, respectively. Face layer boards secured to each furring channel with 1-5/8 or 1-7/8 in. long Type S-12 bugle head steel screws, spaced a max of 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from side and end joints, respectively. End joints and side joints of the face layer boards shall be staggered a min of 16 in. from the joints in the middle layer. If end joints of the face layer boards are not centered on the furring channels, the end of boards at the end joint shall be attached to the middle layer boards with 1-1/2 in. long Type G steel screws spaced 8 in. OC and located 1-1/2 in. from the end joint. When Steel Framing Members (Item 6A) are used - Three layers of 5/8 in. thick by 4 ft wide gypsum board installed with long dimension perpendicular to furring channels Item 4A. Top layer secured with 1 or 1-1/4 in. long Type S bugle head screws, spaced max 8 in. OC. Screws located 1-1/2 to 2 in., and 3/4 in. from side and end joints, respectively. Middle layer boards secured to furring channels with 1-5/8 or 1-7/8 in. long Type S-12 bugle head steel screws spaced max 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from side and end joints, respectively. Face layer boards secured to each furring channels with 2-1/4 in. long Type S-12 bugle head steel screws, spaced a max of 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from side and end joints, respectively. Butted end joints shall be staggered minimum 2 ft. within the assembly. Additional furring channels constructed as per Item 4A shall be used to support each end of each gypsum board. These additional furring channels shall be attached to underside of the truss with Genie clips as described in Item 4A. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butted side joints shall be offset min 16 in.

**4. Furring Channels** — Resilient channels, 1/2 in. deep, or inverted hat type furring channels, 1/2 in. deep, formed from 0.019 in. thick galv steel, spaced 12 in. OC perpendicular to trusses. Channels secured to each truss with 1-7/8 in. long Type S steel screws.

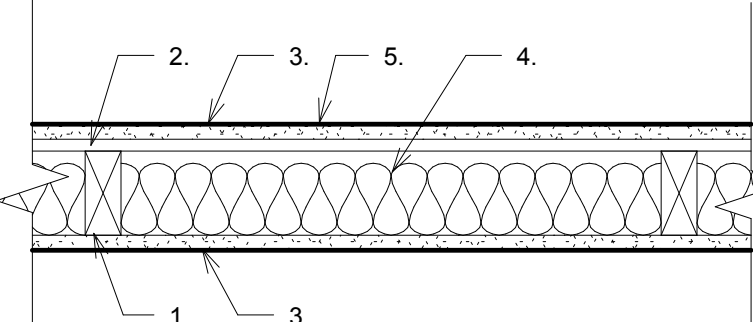
**5. Batts and Blankets** — Any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. Insulation secured against the subflooring, held suspended in the concealed space or draped over the resilient channels (or furring channels) and gypsum panel membrane. There is no limit in the overall thickness of insulation.

**5. Loose Fill Material** — As an alternate to Item 5, any loose fill material bearing the UL Classification Marking for Surface Burning Characteristics. There is no limit in the overall thickness of insulation.

**6. Finishing System** — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

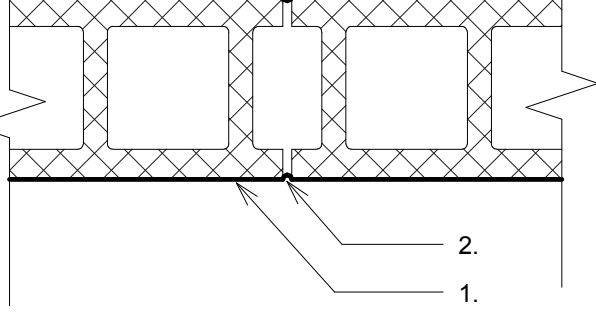
UL L577 - 2hr Rated Stair Shaft Cap

- Wood Studs** — Nom 2 by 4 in., spaced 16 or 24. OC. Effectively cross braced.
- Resilient Channel** — 25 MSG galv steel. Resilient channels spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws.
- Gypsum Board** — 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 12 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 12 in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced 12 in. OC. Vertical joints shall be located over studs on this side of the wall.
- Batts and Blankets** — 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to 4-in. face of the studs with staples placed 24 in. OC.
- Joints and Screw heads** — Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.
- Wall and Partition Facings and Accessories** — (Optional, Not shown) — Nominal 1/2 in. thick, 4 ft wide, square edge fiber boards, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.
- Mineral and Fiber Board** — (Optional, Not shown) — 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on the side of the wood framing without the resilient channels, in between the wood framing and the UL Classified gypsum board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed horizontally or vertically and fastened through the fiber boards to wood framing with 2 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Gypsum board joints staggered from fiber board joints. Fiber boards not evaluated or intended as a substitute for the required layer of UL Classified Gypsum Board.



UL U311 - 1hr Rated Partition

- Concrete Blocks** — Nominal 8 by 8 by 16 in. or 12 by 8 by 16 in. concrete blocks. Classification 2 hr. and 4 hr.
- Mortar** — Blocks laid in full bed of Type S mortar, nom. 3/8 in. thick. Vertical joints staggered.

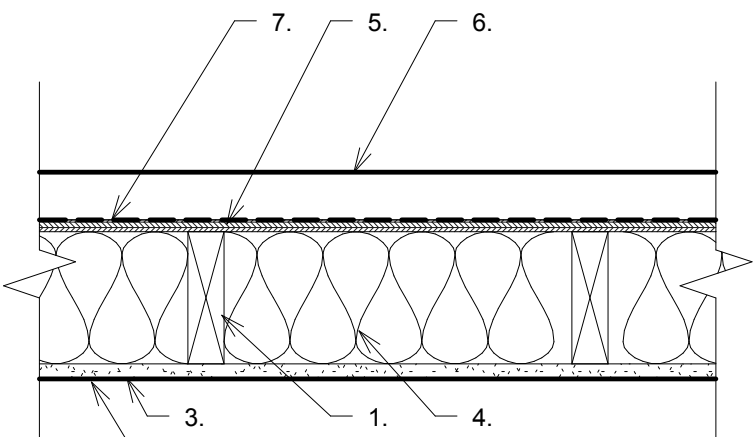


UL U937 - 2hr Rated Partition

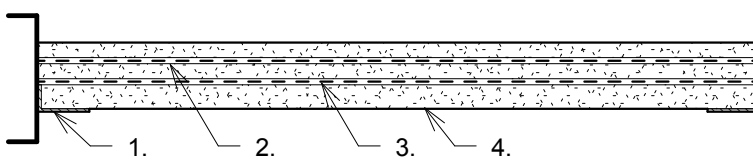
- Steel Column** — Min sizes of W shape and tubular steel columns in the AISC Steel Construction Manual as shown under Item 2.
- Gypsum Board** — Any 1/2 in. thick UL Classified Gypsum Board that is eligible for use in Design No. X515. Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305. Nom 5/8 in. thick or 1/2 in. thick gypsum board. Min total thicknesses of layers in inches for the various ratings and min column sizes are as follows:

Deg.	MIN. COLUMN SIZE		RATING HR				
	Outside Dimensions In.	Thkns In.	In. 2 Area	TOTAL THKNS OF LAYERS OF WALLBOARD IN.			
				1	2	3	4
TS4X40X18	4X4	0.188	2.74	1	1.34	2.5/8	-
TS8X80X250	8X8	0.250	7.48	5/8	1.1/2	2.1/2	-
- Applied in layers as shown in above illustration. Each layer held together with paper masking adhesive tape during erection to allow placement of succeeding layers.
- For column ratings of 2 hr or less, one layer of gypsum board may be applied to the outer surface of steel cover. Boards applied vertically, without horizontal joints, attached to cover with screws located 1 in. from the board edge and 8 in. OC.
- Steel Covers** — For seamed joints — 0.024 in. min thickness (No. 24 MSG) uncoated, galv or stainless steel, for column ratings of 3 hr or less. For 4 hr ratings, only stainless steel cover to be used. Covers consist of two L-shaped sections with Snap-Lock or Pittsburgh steel joint pins. Width to be determined on the basis of protection thickness and column size. Length of sections to provide 1/8 in. clearance per lineal foot of column length between cover and any restraint. For lapped joints — (Max ratings 2 hr) — No. 22 MSG (0.027 in. thick) uncoated or galv steel. Fasteners used at laps to be No. 8 by 1/2 in. OC. Other details to be the same as those stated for seamed joints as shown above.
- Corner Bead** — For columns with outer layer of wallboard attached to outside surface of metal cover. No. 28 MSG galv steel, 1-1/4 in. legs corner beads attached to wallboard with screws spaced 12 in. O.C.
- Screws** — For columns with outer layer of wallboard attached to outside surface of metal cover, self-drilling Phillips bugle head, 1 in. long screws for 1/2 or 5/8 in. thick wallboard (1-1/4 in. long screws for 3/4 in. thick wallboard) are used to attach wallboard to steel cover, and corner bead to wallboard.
- Sodium Silicate Solution** — (Not shown, optional) — Used to adhere one layer of wallboard to inside of steel cover prior to assembly.
- Finishing System** — (Not shown) — Joint compound applied over corner beads to a thickness of 1/16in. \*Bearing the UL Classification Mark

UL U356 - 1hr Rated Exterior Wall



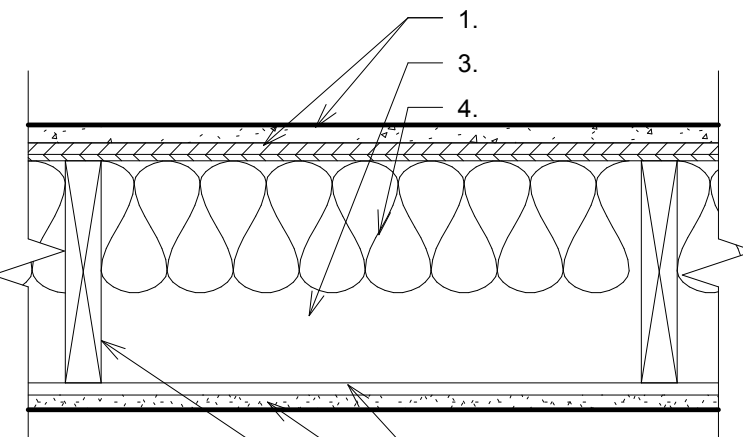
- Wood Studs** — Nom 2 by 4 in. spaced 16 in. OC with two 2 by 4 in. top and one 2 by 4 in. bottom plates. Studs laterally-braced by wood structural panel sheathing (Item 5). When Mineral and Fiber Boards\* (Item 5A) are considered as bracing for the studs, the load is restricted to 75% of allowable axial load. Walls effectively fire stopped at top and bottom of wall.
- Gypsum Board\* - Type "X"** — Nom 5/8 in. thick, 4 ft wide, applied vertically and nailed to studs and bearing plates 7 in. OC with 6d cement-coated nails, 1-7/8 in. long with 1/4 in. diam head.
- Joints and Nailheads** — (Not Shown) — Wallboard joints covered with tape and joint compound. Nail heads covered with joint compound.
- Batts and Blankets\*** — Mineral fiber or glass fiber insulation, 3-1/2 in. thick, pressure fit to fill wall cavities between studs and plates. Mineral fiber insulation to be uncoated and to have a min density of 3 pcf. Glass fiber insulation to be faced with aluminum foil or kraft paper and to have a min density of 0.9 pcf (min R-13 thermal insulation rating).
- Wood Structural Panel Sheathing** — Min 7/16 in. thick, 4 ft wide wood structural panels, min grade "C-D" or "Sheathing". Installed with long dimension of sheet (strength axis) or face grain of plywood parallel with or perpendicular to studs. Vertical joints centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 6d cement coated nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs.
- Exterior Facings** — Installed in accordance with the manufacturer's installation instructions.
  - Exterior Insulation and Finish System (EIFS)** — Nom 1 in. Foamed Plastic\* insulation bearing the UL Classification Marking, attached over sheathing and finished with coating system, or Portland cement or synthetic stucco systems, in accordance with manufacturer's instructions.
  - Stone Veneer** — Stone veneer is mortar bonded to a lath, scratch coat and water resistant barrier applied to sheathing, installed in accordance with the manufacturers installation instructions, and meeting the requirements of local code agencies.
- 15# Felt Paper or equivalent**



UL U529 - 2hr Rated Shaft Wall

- Roofing System** — Any UL Class A, B or C Roofing System (TGFU) or Prepared Roof Covering (TFWZ) acceptable for use over nom 15/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Nom 15/32 in. thick wood structural panels secured to trusses with No. 6d ringed shank nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Construction adhesive may be used with either the nails or staples.
- Trusses** — Pitched or parallel chord wood trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Truss members secured together with min. 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each both has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each both has a twist for stiffness. The pairs are repeated on approximately 7/8 in. centers with four rows of teeth per inch of plate width. Where the truss intersects with the interior face of the exterior walls, the min truss depth shall be 5-1/4 in. with a min roof slope of 3/12 and a min. area in the plane of the truss of 21 sqft. Where the truss intersects with the interior face of the exterior walls, the min truss depth may be reduced to 3 in. if the batts and blankets (Item 3) are used as shown in the above illustration (Alternate Insulation Placement) and are firmly backed against the intersection of the bottom chords and the plywood sheathing.
- Batts and Blankets** — Glass fiber insulation, secured to the wood structural panels with staples spaced 12 in. OC or to the trusses with 0.090 in. diam galv steel wires spaced 12 in. OC. Any glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance, having a min density of 0.5 pcf. As an option, the insulation may be fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. When Steel Framing Members (Item 6B) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6B) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6B). The finished rating has only been determined when the insulation is secured to the decking.
- Gypsum Board\* - Type "C"** — One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Attached to the resilient channels using 1 in. long Type S bugle-head screws. Screws spaced a max of 12 in. OC along butted end-joints and in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or a max of 8 in. OC along butted end-joints and in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane.
- Steel Framing Members\* — Cold Rolled Channels** — 1-1/2 in. by 1/2 in., formed from No. 16 g. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6B). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-lad together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

UL P522 - 1hr Rated Roof

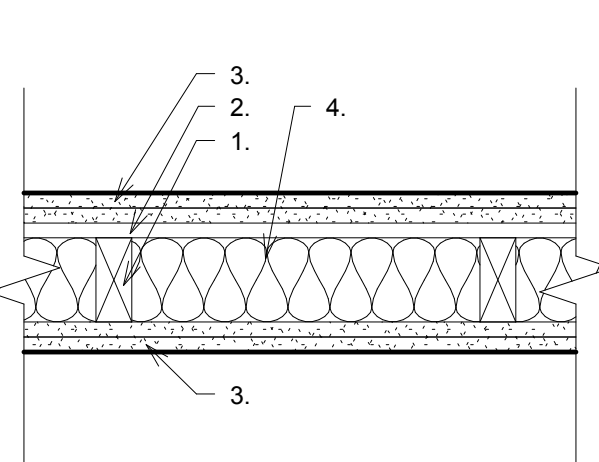


UL L516 - 1hr Rated Floor

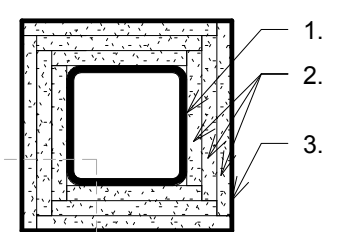
- Subflooring** — Min 1 by 6 in. T & G lumber fastened diagonally to joists, or min 15/32 in. thick plywood or min 7/16 in. thick oriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.
- Finish Flooring - Floor Topping Mixture** — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.
- Wood Joists** — Min 2 by 10, spaced 16 in. OC and effectively fireblocked in accordance with local codes.
- Cross Bridging** — Min 1 by 3 in. or min 2 by 10 in. solid blocking.
- Batts and Blankets\*** — (Optional) — Nom 48 by 16 by 3 in. thickness of glass fiber batts secured to joists on both sides with staples spaced 12 in. OC.
- Resilient Channels** — Resilient channels, formed from No. 25 MSG galv steel and shaped as shown, spaced 24 in. OC perpendicular to joists. Channels overlapped 1/2 in. at ends and secured to each joist with one 1-1/4 in. long No. 7 Type S bugle head screw. Additional resilient channels positioned so as to coincide with end joints of gypsum board (Item 7). Additional channels shall extend min 3 in. beyond each side edge of board.
- Gypsum Board\* - Type "C"** — Nom 5/8 in. thick, 48 in. wide gypsum board, installed with long dimension perpendicular to resilient channels and side edges located between joists. Gypsum board secured with 1 in. long No. 7 Type S bugle head screws spaced 12 in. OC. End joints of gypsum board similarly fastened to additional resilient channels positioned at end joint locations. Screws located 3/4 and 5/8 in. from side and end joints, respectively.

ICC RATING: 55-59

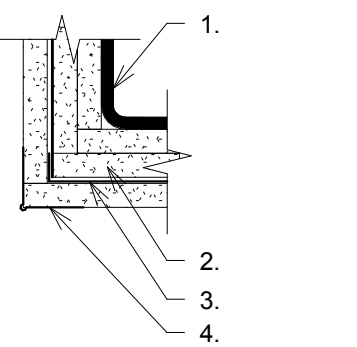
- Wood Studs** — Nom 2 by 4 in., spaced 16 in. OC. Studs cross braced at mid-height and effectively fire stopped at top and bottom of wall.
- Resilient Channel** — 25 MSG galv steel, nom 2-1/2 in. wide by 1/2 in. deep. Resilient channels placed perpendicular to studs, spaced vertically max 24 in. OC, flange portion attached to each intersecting stud with 1 in. long Type S steel screws.
- Gypsum Board (Type "C")** — 5/8 in. thick, 4 ft wide. Attached to furring channels: base layer with 1 in. long Type S steel screws spaced max 24 in. OC, face layer with 1-5/8 in. long Type S steel screws spaced max 12 in. OC. Attached to wood studs: base layer with 1-7/8 in. long 6d coated nails spaced max 14 in. OC, face layer with 2-3/8 in. long 8d coated nails spaced max 7 in. OC. Base layers installed vertically. Face layers installed horizontally with butt joints offset 16 in. from base layers.
- Batts and Blankets** — Glass fiber insulation. The cavities formed by the studs friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.



UL U334 - 2hr Rated Shaft Wall

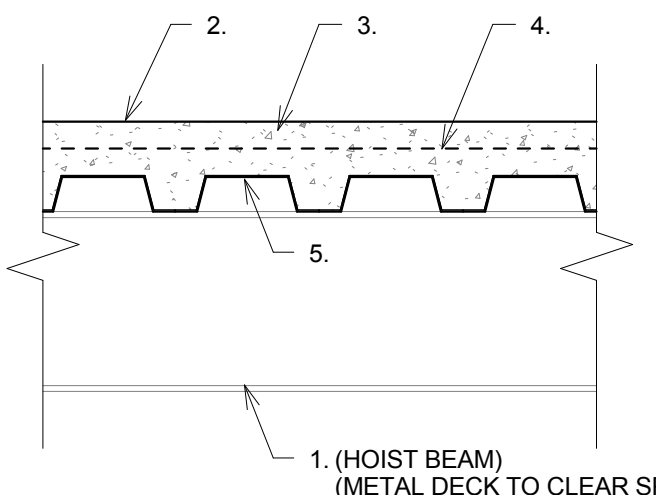


UL X526 - 1hr Rated Column

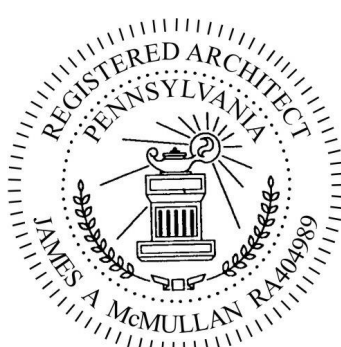


UL P943 - 2hr Rated Roof

- Steel Supports** — Wx616, Wx810, Wx818 or Wx828 min size Beams or Types 10K1, 12J4, 12K5 or 14K3 min size Joists. See Item 6.
- 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 (TEV7).
- Insulating Concrete** — various types of insulating concrete prepared as indicated below:
  - Perlite Concrete — 6 cu ft Perlite Aggregate\* per bag of Portland cement and 1.5 pt of 12.5 percent solution with water of neutralized vinsol resin as air entraining agent. Min avg air dry density 27 pcf, and min avg compressive strength 150 psi. See Perlite Aggregate\* (CFX) category for names of manufacturers.
  - Cellular Concrete — Roof Topping Mixture\* — Foam concentrate mixed with water and Portland cement per manufacturer's specifications. Cast dry density and 28-day compressive strength of min 190 psi as determined in accordance with ASTM C495-06.
  - Cellular Concrete — Roof Topping Mixture\* — Foam Concentrate mixed with water, Portland Cement and UL Classified Vermiculite Aggregate per manufacturer's application instructions. Cast dry density of 33 (+ or -) 3.0 pcf and 28-day compressive strength of min 250 psi as determined in accordance with ASTM C495-06.
- Wire Reinforcement** — No. 19 SWG galv steel wire twisted to form hexagons 2 in. wide, weighing 1.5 lbs/sq yd. In addition straight 18 SWG galv wire woven into the mesh and spaced 3 in. apart as stiffeners. Mesh installed without attachment, lapped 8 in. at the edges, with stiffeners installed parallel to deck corrugations.
- Steel Floor and Form Units** — Noncomposite design. Corrugated 28 MSG min galv steel. When 9/16, 15/16 or 1 in. deep units are used, their loadings shall be limited to produce a 75 percent max bending stresses in the steel, and the Restrained Assembly Rating shall not exceed 1-1/2 H. Welded to supports 12 in. O.C. with weld washers. Adjacent units overlapped one corrugation. Supports spaced not over 8 ft 0 in. O.C. for 24 gauge units and not over 8 ft 0 in. O.C. for 26 gauge units. For 2 Hr. Restrained Assembly Rating, 9 ft 0 in. O.C. for 24 gauge units and not over 8 ft 0 in. O.C. for 26 gauge units. For 1 Hr. Restrained Assembly Rating, For corrugated steel floor units less than or equal to 1-5/16 in. deep, the concrete (Item 2) thickness shall be 3-1/2 in., as measured from the surface of the concrete to the valley of the units. For corrugated steel floor units greater than 1-5/16 in. deep, the concrete thickness shall be 2-3/16 in., as measured from the surface of the concrete to the top plane of the units.



1. (HOIST BEAM) (METAL DECK TO CLEAR SPAN)



ISSUE:

Issued for Permit  
08.05.2016

PROJECT: 16-018

Hampton Inn & Suites

New Stanton, PA 15672

OWNER:

Stanton Hospitality LLC

52 Blueberry Lane,  
Grove City, PA 16127

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No. Issue Date Project Status

UL Details

FOR REFERENCE ONLY; REFER TO SHEET A-900 FOR PROJECT PARTITION TYPES

1 1/2" = 1'-0"