

# TGKX.238B - ROOF DECK CONSTRUCTIONS

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.

## Roof Deck Constructions

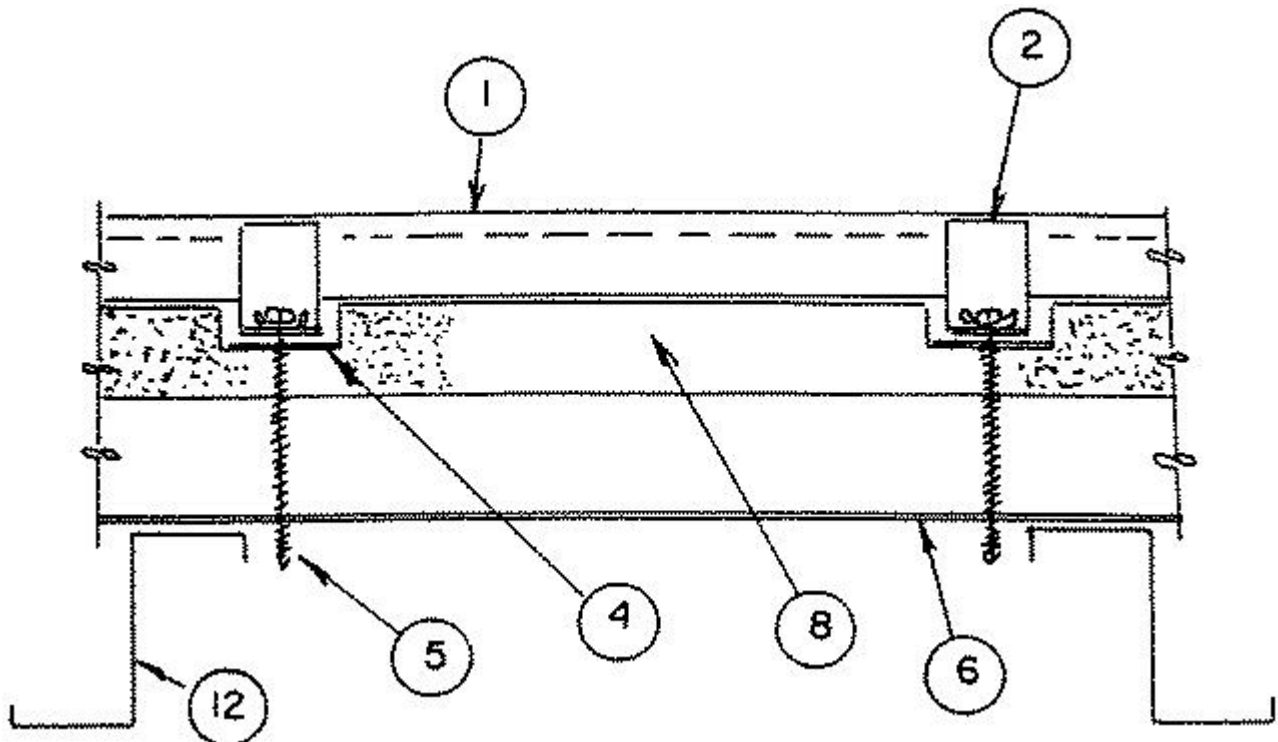
See General Information for Roof Deck Constructions

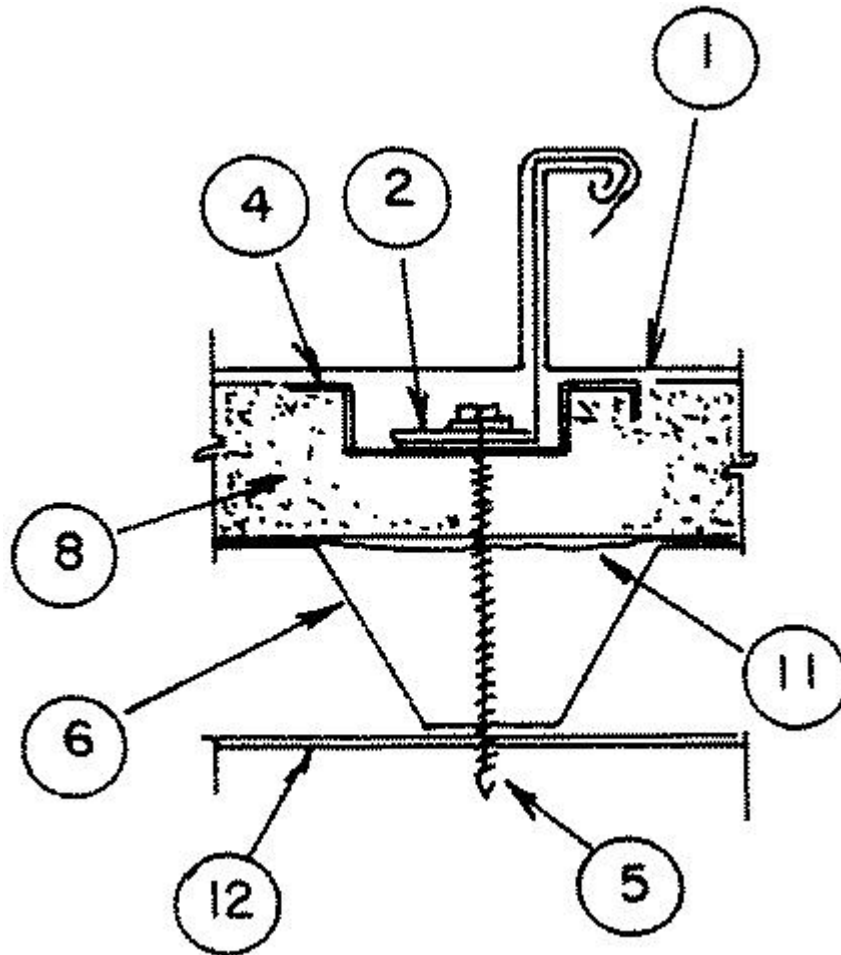
### Construction No. 238B

April 04, 2018

**Uplift — Class 90**

**Fire Not Investigated**





1. **Metal Roof Deck Panels\*** — No. 24 MSG minimum coated steel. Maximum panel width 16 in. and rib height 2 in. Panels continuous over two or more spans. Endlap for "BattenLok" or "Super-Lok" panels to be 6 in. and to include back up plate (Item 3). Endlap for "Master-Span" and "KA2000" panels to be 2 in. and to include back up plate (Item 3A). A bead of sealant may be used at panel ends and side joints. Side laps to be tightened and crimped with an electric crimping machine to an angle of 45 degree maximum unless indicated in the individual panels in this item. Crimping process to include the upper portion of panel clips (Items 2 or 2A).

**A & S BUILDING SYSTEMS L P** (View Classification) — " BattenLok", "BattenLok HS" or "SuperLok"

**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "Span-Lok" or "Span-Lok HP" (90° Seam) or "SpanSeam" (180° Seam)

**AMERICAN BUILDINGS CO** (View Classification) — " Loc-Seam," (90° Seam) "Loc-Seam 360" (180° Seam)

**BUTLER MANUFACTURING, DIV OF BLUESCOPE BUILDINGS NORTH AMERICA INC** (View Classification) — " VSR11"

**CENTRAL TEXAS METAL ROLLFORMING INC** (View Classification) — " SPANLOC 200"

**CHIEF INDUSTRIES INC** (View Classification) — "MVf" or "MVP"

**CUSTOM-BILT METALS** (View Classification) — CB-2000

**KIRBY BUILDING SYSTEMS INC** (View Classification) — " KA2000", "RoofLok" and "RoofLok Plus"

**KNUDSON MFG INC** (View Classification) — " ULTRALOK"

**MBCI** (View Classification) — " BattenLok", "BattenLok HS" or "SuperLok"

**MCELROY METAL MILL INC** (View Classification) — "ABC JSM 200"

**MESCO METAL BUILDINGS** (View Classification) — " BattenLok", "BattenLok HS" or "SuperLok"

**METAL ROOFING SYSTEMS INC** (View Classification) — "MRS System 2500"

**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "T-Span" or "T-Span 180" (180° Seam)

**NCI BUILDING SYSTEMS L P** (View Classification) — " BattenLok", "BattenLok HS" or "SuperLok"

**NUCOR BUILDING SYSTEMS, DIV OF NUCOR CORP** (View Classification) — VR16 II "Vise Lock" or VR16II "Vise Lock 360".

**PETERSEN ALUMINUM CORP** (View Classification) — "Tite-Loc" and "Tite-Loc Plus"

**PINNACLE STRUCTURES INC** (View Classification) — "PINNACLE BATTENLOK" and "PINNACLE SUPERLOK"

**ROLLFAB METAL BUILDING PRODUCTS** (View Classification) — "MS-200HP/90" and "MS-200HP/180"

**SAN ANTONIO QUALITY METALS** (View Classification) — " ML-200"

**TAYLOR METAL INC, DBA TAYLOR METAL PRODUCTS** (View Classification) — "MS200"

**TREMCO INC** (View Classification) — "TremLock VP Series II"

**UNITED STRUCTURES OF AMERICA INC** (View Classification) — "Sure-Lok" or "Supreme-Lok"

**VARCO PRUDEN BUILDINGS, DIV OF BLUESCOPE BUILDINGS NORTH AMERICA INC** (View Classification) — " SLR II"

1A. **Metal Roof Deck Panels\*** — Panels may be physically curved at a radius of 110 ft. or greater.  
**A & S BUILDING SYSTEMS L P** (View Classification) — " BattenLok" or "SuperLok"

**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "SL-216" or "SPS-216"

**MBCI** (View Classification) — " BattenLok" or "SuperLok"

**MESCO METAL BUILDINGS** (View Classification) — " BattenLok" or "SuperLok"

**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "T-Span" or "T-Span 180" (180° Seam)

**NCI BUILDING SYSTEMS L P** (View Classification) — " BattenLok" or "SuperLok"

**PETERSEN ALUMINUM CORP** (View Classification) — " Tite-Loc" and "Tite-Loc Plus"

**UNITED STRUCTURES OF AMERICA INC** (View Classification) — " Sure-Lok" or "Supreme-Lok"

2. **Roof Deck Fasteners\* (Panel Clips)** — Either of the following:

Fixed Clip or Utility — One piece assembly fabricated from No. 22 MSG minimum steel, 3 in. wide. Floating Clip — two piece assembly with a base fabricated from No. 22 MSG minimum steel, 4-1/4 in. wide, and a top fabricated from No. 22 MSG steel, 4-1/4 in. wide. Clip spacing to be 48 in. O.C. maximum. Sealant may be used in the top of the clips.

**BUILDING PRODUCTS DEVELOPMENT INC** (View Classification) — "NC3300", "NCF-3300", "NCF-3300-SS" Series Clip

**MCELROY METAL MILL INC** (View Classification) — "ABC JSM 200 Utility"

**NCI BUILDING SYSTEMS L P** (View Classification) — " BattenLok High or Low, Fixed or Floating Clip"; "BattenLok Utility Clip" — "SuperLok High or Low, Fixed or Floating Clip"; "SuperLok Utility Clip" .

2A. **Roof Deck Fasteners\*** — (Panel Clip) — (Not Shown) — Two part assembly; A base fabricated from No. 16 MSG minimum coated steel and upper tab fabricated from No. 22 MSG minimum coated steel. Clips fastened to purlins using two fasteners per clip. See Item No. 3 for description of fasteners.

**METAL SALES MANUFACTURING CORPORATION** (View Classification) — " T-Span Clip"

2B. **Roof Deck Fasteners\* (Panel Clips)** — (Not Shown) Used with "Tite-Loc" or "Tite-Loc Plus" Panels.

One piece assembly; 3 in. wide, approximately 2 in. high with two or three guide holes in base. Fabricated from No. 22 MSG coated steel.

**PETERSEN ALUMINUM CORP** (View Classification) — "Tite-Loc Utility Clip", "Tite-Loc Plus Utility Clip"

One piece assembly; 3 in. wide, approximately 2-3/8 in. or 3 in. high, with three guide holes in base. Fabricated from No. 22 MSG coated steel.

**PETERSEN ALUMINUM CORP** (View Classification) — "Tite-Loc Low/High Fixed Clip", "Tite-Loc Plus Low/High Fixed Clip"

Two piece assembly; base approximately 2 in. wide, 1-11/16 in. long formed to engage upper tab. Fabricated from No. 16 MSG coated steel. Tab approximately 4-5/16 in. wide; 2-3/8 in. or 2-7/8 in. high, formed to engage base. Fabricated from No. 22 MSG coated steel. Base to have two guide holes.

**PETERSEN ALUMINUM CORP** (View Classification) — " Tite-Loc Sliding Clip", "Tite-Loc Plus Sliding Clip", Tite-Loc AR Fixed Clip" and "Tite-Loc AR Sliding Clip", " Tite-Loc Plus AR Fixed Clip" and "Tite-Loc Plus AR Sliding Clip"

2C. **Roof Deck Fasteners (Panel Clips)** — (Not Shown) — No. 24 MSG minimum gauge coated steel with a separately formed base fabricated of No. 18 MSG minimum gauge coated steel. One clip to be used per panel at each purlin.

**AMERICAN BUILDINGS CO** (View Classification) — " LSBC-1" or "Loc-Seam Expansion Clip"

**NUCOR BUILDING SYSTEMS, DIV OF NUCOR CORP** (View Classification) — "NBS VR16 II BC", "NBS VR16 II Sliding" or "NBS VR16 II MD".

**SUPERIOR METAL SYSTEMS INC** (View Classification) — SMS-24SSC

3. **Endlap Back-Up Plate\*** — (Not Shown) No. 16 MSG minimum coated steel, 15-1/2 in. wide with two 1 in. wide by 3/4 in. long tabs for sliding over end of panels.

4. **Bearing Plate** — (Optional) No. 20 MSG minimum coated steel, 4 in. wide by 5 in. long. Used under panel clip (Item 2, 2A, 2B and 2C) over rigid insulation (Item 8).

5. **Panel Fasteners** — (Screws) Screws used to attach the panel clips (Items 2 or 2A) to liner panel (Item 6) to be No. 14 Truss Head with No. 3 Phillips drive. Length to be a minimum of 1/2 in. longer than the combined thickness of the liner panel (Item 6), rigid

insulation (Item 8), gypsum wallboard (Item 10) and plywood or oriented strand board (Item 10). Two screws per clip. Screws used to attach liner panel (Item 6) to purlins (Item 12) to be No. 12 x 1-1/4 in. self-drilling, Hex Head with 5/8 in. O.D. washer. Two screws to be used at each valley. Screws at liner panel side laps to be the same type as liner panel to purlin screws. Spacing to be 20 in. OC.

Screws used at endlap to be one of the following: 14 x 1 in. Type AB, Hex Washer Head self-tapping, 14 x 1-1/4 in. Hex Washer Head, self-tapping; 14 x 1 in. Type AB Phillips Stainless Steel, Self-tapping. Five screws per panel in a 1, 3, 4, 4, 3 in. pattern.

6. **Metal Deck** — No. 22 MSG minimum steel. Minimum yield strength 30 KSI. Minimum depth 1-1/2 in. Panel type to be A, B, F or N Deck. As an alternate metal deck, 22 MSG minimum steel, minimum yield strength 80 KSI, minimum depth 15/16 in. designated Type HD may be used; Liner panel to be fastened to supports with screws as indicated in Item 4 or with welds and weld washers of type indicated by manufacturer of liner panel. Welds to be located in each valley.

7. **Fastener Reinforcement** — (Not Shown) Reinforcements used with the screws attaching the liner panels to the purlins. Thickness to be 0.125 in. with an area of approx 2-in.<sup>2</sup>.

8. **Foamed Plastic (Rigid Insulation)** — (Optional) Minimum thickness 1 in. Any rigid type having a minimum compressive strength of 25 psi or minimum density of 2 pcf or see products Classified under Foamed Plastic (TJBX). Supplied in 4 ft wide sheets.

9. **Plywood or OSB** — (Optional) (Not Shown) Minimum APA Rated plywood, nominal 3/8 in or 1/2 in. thick or oriented strand board (OSB), nominal 3/8 in or 7/16 in. thick, 4 x 8 ft. Sheets to be installed on top of Foamed Plastic (Item 8) in lieu of bearing plates (Items 4 or 4A).

10. **Gypsum Board** — (Optional) (Not Shown) Any 5/8 in. thick gypsum wallboard supplied in sheets 2 x 4 to 4 x 12 ft. Applied perpendicular to steel roof deck direction with adhesive. End joints to occur over crests of steel roof deck and be staggered 2 ft in adjacent rows. As an alternate, any 1/2 in. thick gypsum board can be placed on top of the foamed plastic rigid insulation (Item 8). The total cumulative thickness of the rigid board (Item 8) and gypsum board may not exceed 4-1/2 in.

11. **Vapor Barrier** — (Optional) Used between liner panel and foamed plastic. minimum 6 mil plastic sheeting.

12. **Supports (Purlins)** — Purlins used for liner panels to be cold formed steel sections. As alternates: structural steel components (hot rolled beams, channels, etc.) may be used. Minimum gauge and yield to depend on design considerations. Maximum spacing to depend on design considerations.

Refer to General Information, Roof Deck Constructions (On-Line Certification Directory), for Items Not Evaluated.

**\* 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 2018-04-04

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