



Construction No. 506G

TGKX.506G

Roof Deck Constructions

[Page Bottom](#)

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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Roof Deck Constructions

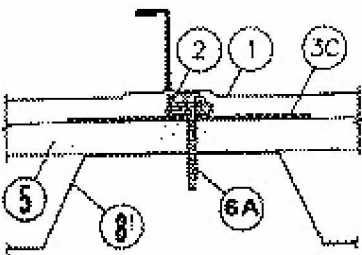
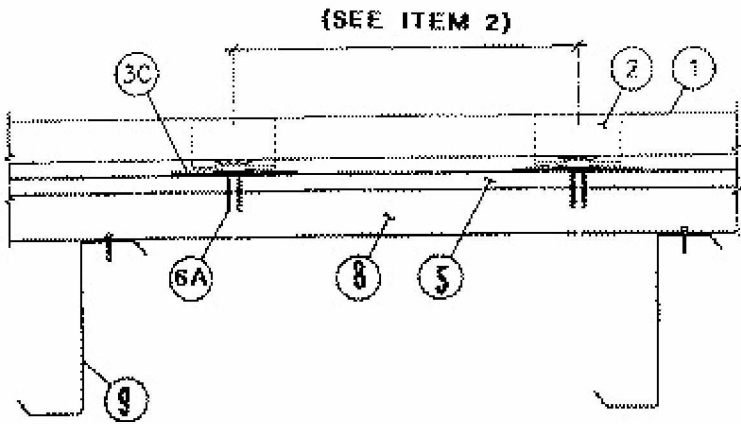
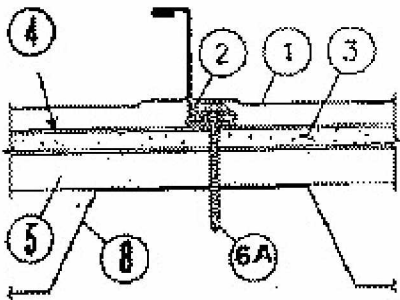
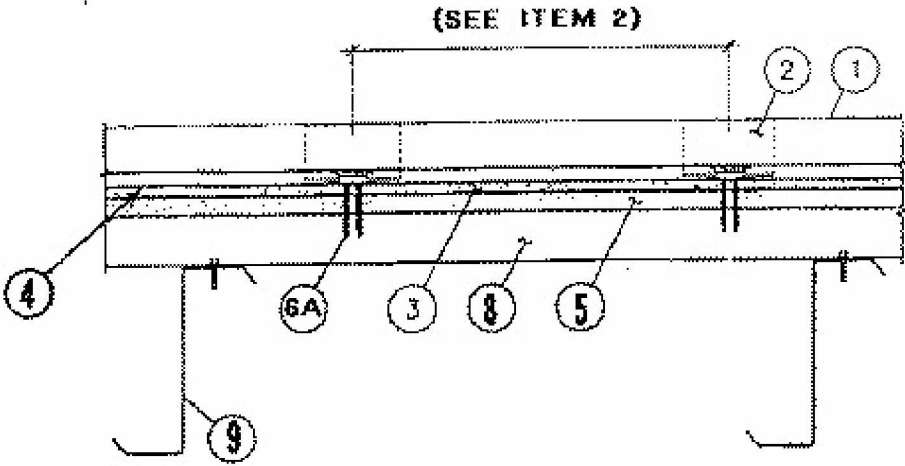
[See General Information for Roof Deck Constructions](#)

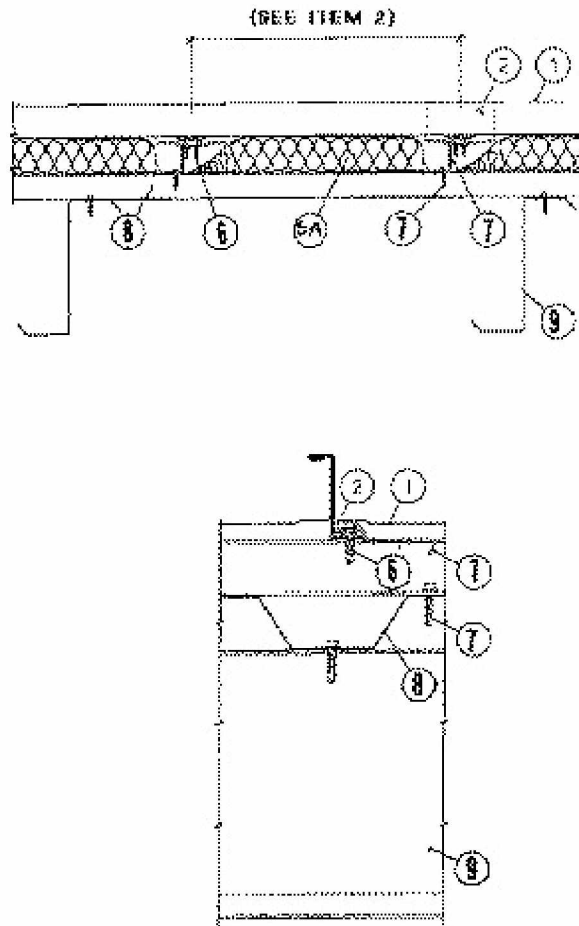
Construction No. 506G

October 11, 2013

Uplift — Class 90

Fire Not Investigated





1. Metal Roof Deck Panels* — Panel width, max 18 in., min 12 in.; rib height 2 in., min. .032 in. thick aluminum. Panels continuous over three or more clips. The panel flat area may have optional striations or minor corrugations placed at various locations in the panel flat area beginning min of 2 in. from side ribs. The upper flange of the panel rib formed down to form an angle of 90 degree between the vertical segment and the top flange of the rib. A bead of sealant may be used at panel side ribs. Ribs to be seamed with an electric or hand seaming tool to form a flange with a tight hem. Seaming process to include the upper portion of the panel clips (Item 2).

CONSOLIDATED SYSTEMS INC ([View Classification](#)) — "SSS2"

MCELROY METAL MILL INC ([View Classification](#)) — "Maxima-212", "Maxima-216", "Maxima-218"

TREMCO INC ([View Classification](#)) — "TremLock VP212" or "TremLock VP216" or "TremLock VP218"

2. Roof Deck Fasteners* (Panel Clips) — (Not Shown) — Located at side of panels (Item 1) over substructure (Item 3, 3A, 3B or 3C) and fastened through substructure to liner panel (Item 8) with max spacing of 30 in. OC or over sub-purlins (Item 7) with max spacing of 30 in. OC; or when panel clips are fastened directly to plywood (Item 3A) as described in Item 6B, max spacing to be 30 in. OC. Either of the following:

Fixed Clip — (Not Shown) — One piece assembly fabricated from No. 22 MSG min thick steel, 3-1/2 in. wide.

MCELROY METAL MILL INC ([View Classification](#)) — "Maxima Fixed Clip"

Floating Clip — Two piece assembly with a base fabricated from No. 16 MSG min thick steel, 2 in. wide and a top fabricated from No. 22 MSG min thick steel, 4-5/16 in. wide.

MCELROY METAL MILL INC ([View Classification](#)) — "Maxima Floating Clip"

3. Substructure - (Gypsum Board) — (Optional) - Min thick 1/2 in. To be placed on top of either the liner panel (Item 8) or rigid insulation (Item 5). Combined thickness of the gypsum board and rigid insulation not to exceed 4 in. All joints to be taped with 2.5 in. wide joint tape.

3A. Substructure - (Plywood) — (Optional) — (Not Shown) - Plywood decking, used in lieu of gypsum board (Item 3), to be nom 1/2 in. thick, PS-1 rated sheathing, 40/20, CD. Located over rigid insulation (Item 5).

Combined thickness of the plywood and rigid insulation not to exceed 4 in.

3B. Substructure - (OSB) — (Optional) — (Not Shown) - OSB decking, used in lieu of gypsum board (Item 3), to be nom 1/2 in. thick. Located over rigid insulation (Item 5). Combined thickness of the OSB and rigid insulation not to exceed 4 in.

3C. Substructure - (Bearing Plate) — (Optional) — Bearing plate to be used in lieu of gypsum board (Item 3) to be 4 by 5 in. by No. 20 MSG min thick coated steel (50 ksi min yield strength). Used under each clip (Item 2 or Item 2D) over rigid insulation (Item 5) only when rigid insulation is located directly under panel (Item 1).

4. Vapor Barrier — (Optional) — Single ply, used between the substructure (Items 3, 3A or 3B) and panel (Item 1). To be min 30 lb roofing felt.

5. Foamed Plastic — (Rigid Insulation) — (Optional) Max thickness 3-1/2 in. when gypsum board (Item 3), plywood (Item 3A) or OSB (Item 3B) is used and 10 in. when bearing plates (Item 3C) are used. Min bearing strength to be 20 psi. 1.8 pcf min density or see products Classified under TJBX.

5A. Insulation — (Optional) — Compressible blanket insulation 8 in. max thickness before compression. Used with sub-purlins (Item 7 or Item 7A) only.

6. Fasteners - (Screws) — Fasteners used to attach panel clips (Item 2) to sub-purlins (Item 7) to be No. 1/4-14 by 1 in. long self-drilling, self-tapping, hex-washer-head, plated steel screws. Two fasteners per clip.

6A. Fasteners - (Screws) — Fasteners used to attach panel clips (Item 2) through gypsum board, plywood, OSB, or bearing plate (Item 3, 3A, 3B, or 3C, respectively) and foamed plastic (Item 5) into liner panel (Item 8) to be No. 12 or No. 14 dia. with Phillips or square drive, coated steel screws. Fastener length to penetrate liner panel min 1/2 in. Two fasteners per clip.

Note: The panel clips may be fastened directly to the bearing plate using two No. 10-16 by 1 in. long self-drilling, self-tapping, pancake head No. 2 Phillips drive coated steel screws. The panel clip/bearing plate combination is to be fastened to the liner panel using two No. 12-13 truss head screws described above, inserted through guide holes in the bearing plates and into the liner panel. Min penetration 1/2 in.

6B. Fasteners — (Screws) — (Not Shown) — Fasteners used to attach plywood Substructure (Item 3A) through rigid insulation (Item 5) to liner panel (Item 8) to be No. 14-13, No. 3 Phillips drive truss head screws. Fastener length to penetrate liner panel min 1/2 in. Total of 33 fasteners per 4 by 8 ft plywood sheet to be used. Fasteners located in five rows along the 4 ft length in a 3-9-12-12-9-3 in. pattern. The two outer rows are in a 3-9-12-12-12-12-12-9-3 in. pattern and the three center rows are in a 2-21-24-24-21-3 in. pattern. All spacing from board edges. Fasteners used to attach panel clips (Item 2) to plywood (when plywood is fastened to liner panel as indicated above) to be No. 10-12 by 1 in. long pancake head wood screw with No. 2 Phillips drive, or No. 10-12 by 1 in. long hex-head wood screw. Two fasteners per clip.

7. Sub-Purlin — No. 16 MSG min thick coated steel (50 ksi min yield strength). Hat section, min 3/4 in. deep, 2 in. wide or Zee section, 2 in. wide, flanges 2 in. deep. Max spacing between sub-purlins to be 30 in. OC. when Item 1 and Item 2 used. Note: For Items 7 - Screws used to attach sub-purlin to liner panel to be No. 12-13, No. 3 Phillips drive, truss head, coated steel. Max fastener spacing to be 12 in. OC for Zee section with fasteners located in center of lower flange. For hat section, two screws, spaced 24 in. OC, located at each side of channel to be used.

8. Liner Panel — (Steel Deck) — No. 22 MSG min thick coated steel. Fabricated to various profiles (33 ksi min yield strength). Steel deck depth and profile, support spacing (max 6 ft), method of positioning (end and side laps), and fastening of deck to supports to be per deck manufacturer's and local code requirements for uplift loading.

9. Liner Panel Supports — —

Purlins — No. 16 MSG min thick steel (50 ksi min yield strength). Spacing to depend on design considerations for uplift loading: max 6 ft, 0 in. OC.

Joists — (Optional) - (Not Shown) - Open web steel joist having a min No. 16 MSG upper flange (50 ksi min yield strength) or a min 1/8 in. thick upper flange (33 ksi min yield strength). Max spacing 6 ft, 0 in. OC.

Refer to general information, Roof Deck Construction, for Items not evaluated.

*Bearing the UL Classification Mark

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