



August 21, 2013

Metal Roofing Systems Inc.
Mr. Jeremiah Buechner
7711 Old Plank Road
Stanley, NC 28164

Our Reference: R21103 / 13CA12251

Dear Mr. Buechner:

This is in regard to Project 13CA12251 that was initiated to Classify your “System 3000 Panels” for Class 90 Uplift Resistance (UL580), Class A Roofing Systems (UL790) and Impact Resistance (UL2218).

We have completed and testing and evaluations for these panels for inclusion in the above Classifications. We are currently in the process of completing the Reports, Procedures and Classification cards.

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Authorities having jurisdiction (AHJ) should be consulted in all cases as to the particular requirement covering the installation and use of UL Listed or Classified products, equipment, systems, devices and materials.

Please feel free to call if you have any questions.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Judith G. Marzullo'.

JUDITH G. MARZULLO
Lead Engineering Associate
Fire Protection Division

Reviewed by:

A handwritten signature in black ink, appearing to read 'Kenneth Rhodes'.

KENNETH RHODES
Senior Staff Engineer
Fire Protection Division



Construction No. 678 TGKX.678 Roof Deck Constructions

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Roof Deck Constructions

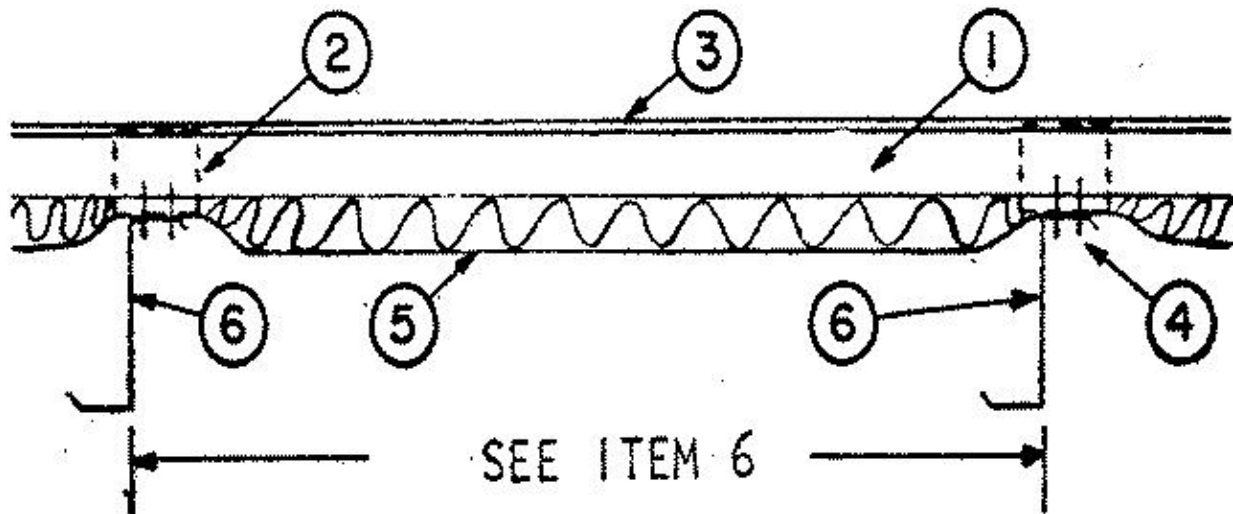
[See General Information for Roof Deck Constructions](#)

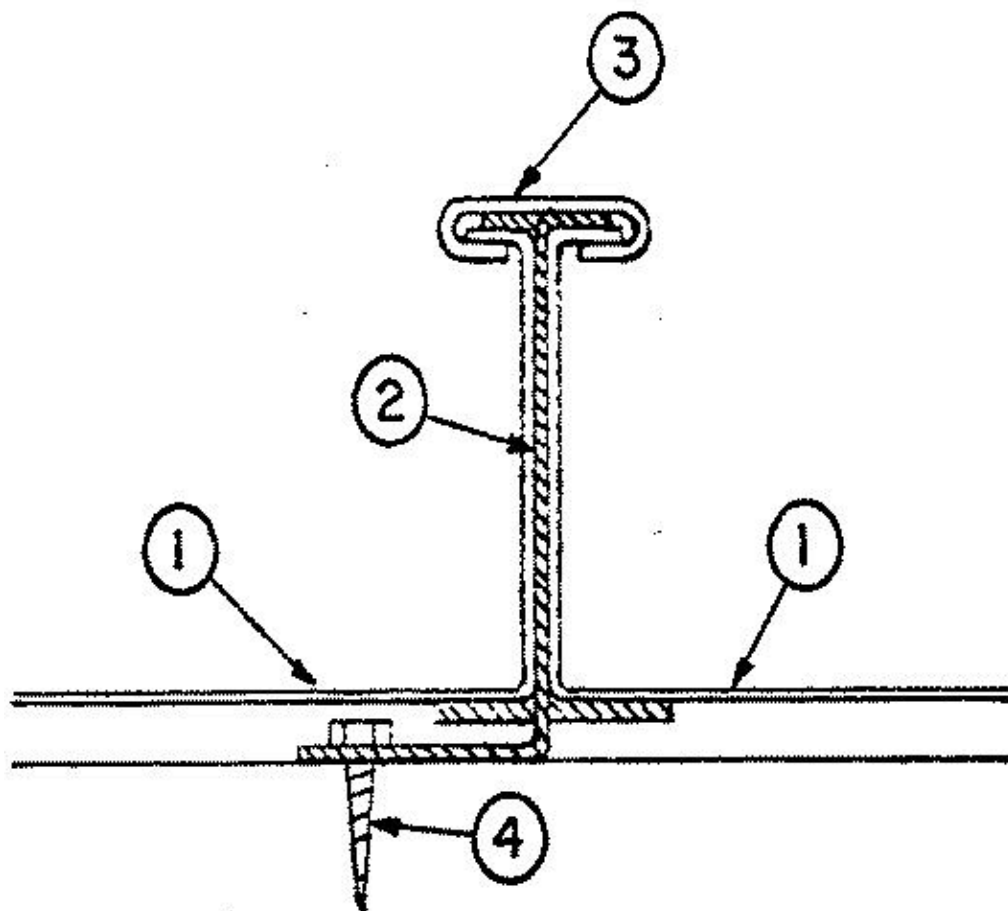
Construction No. 678

August 23, 2013

Uplift — Class 90

Fire Not Investigated





1. **Metal Roof Deck Panels*** — No 24 MSG coated or stainless steel max, width 16 in., 2-3/4 high at side ribs. Panels continuous over two or more spans. End laps to occur near purlin supports with panels overlapped 6 in. Panels may be mechanically curved to a minimum of 20 ft radius. A bead of sealant may be used at panel side ribs and end laps. Side ribs to be continuously seamed with a special seaming tool with the seaming operation to include panel clips and panel batten.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel"

2. **Roof Deck Fasteners*** — (Panel clips) — One piece assembly. Located at side of panels, spaced 36 in. OC. Fabricated from 16 ga galvanized steel. 2 in. wide base, 4-1/4 in. long, 3-3/8 in. high.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip"

2A. **Roof Deck Fasteners*** — Roof Deck Fasteners*

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip" 2 piece clip.

3. **Panel Batten*** — Located on top of panel ribs, 1-1/4 in. wide with 5/8 in. legs. Fabricated from same material as panels.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Batten"

4. **Panel Fasteners (Screws)** — Fasteners used to attach panel clips to purlins to be No. 12 by 1-1/4 in. long hex-head, self-tapping, plated steel screws. Two screws to be used with each panel clip. Fasteners used at panel end laps are to be per manufacturer's instructions.

5. **Insulation** — (Optional) — Any compressible blanket type 6 in. max thickness before compression.

6. **Purlins** — No. 16 MSG min gauge steel (min yield strength 50,000 psi), spaced 3 ft. O.C.

7. **Bearing Plate** — (Not shown) No. 22 MSG min gauge steel 3 in. wide and 6 in. long to be located under each panel clip.

Refer to General Information, Roof Deck Construction, (Roofing Materials and Systems Directory) for Items not evaluated.

*Bearing the UL Classification Mark

Last Updated on 2013-08-23

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Construction No. 678A TGKX.678A Roof Deck Constructions

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Roof Deck Constructions

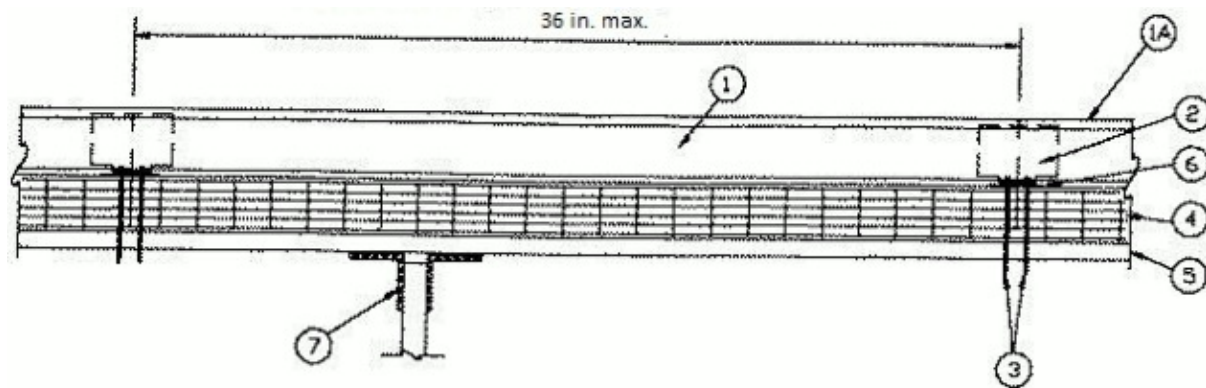
[See General Information for Roof Deck Constructions](#)

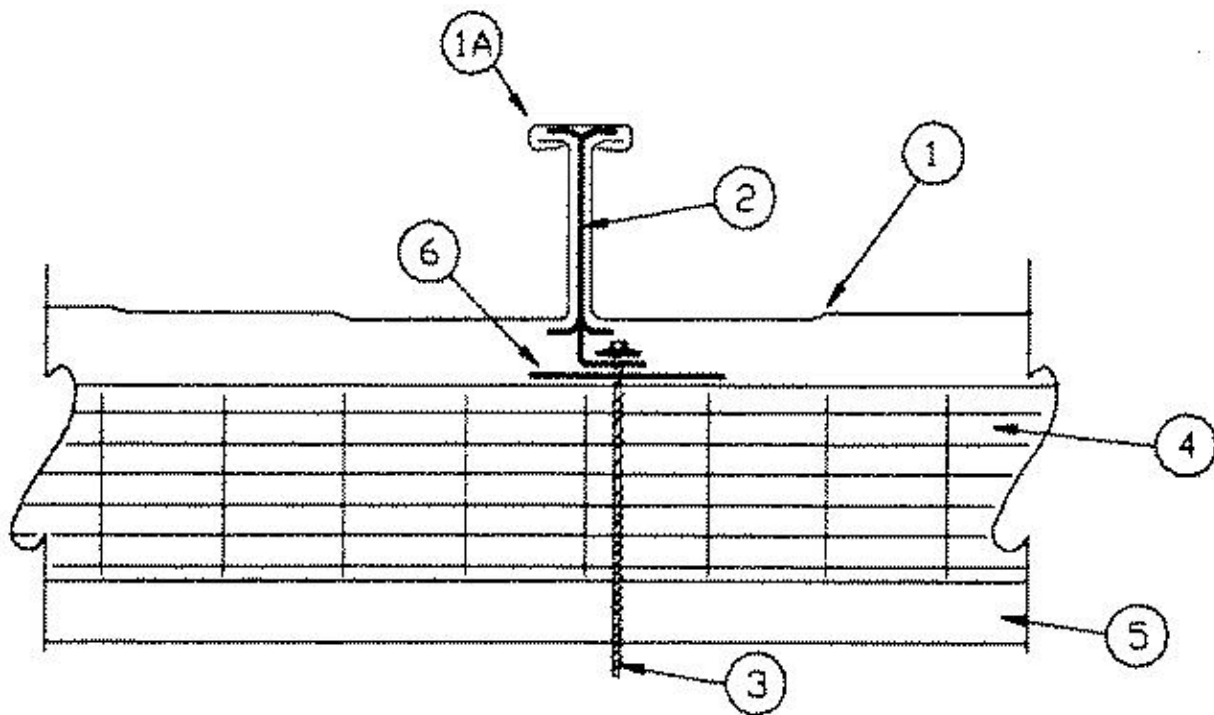
Construction No. 678A

August 23, 2013

Uplift — Class 90

Fire Not Investigated





1. **Metal Roof Deck Panels*** — No. 24 MSG coated or stainless steel; 16 in. wide max, 2-3/4 in. high at side ribs. No. 24 MSG coated or stainless steel batten used over panel side ribs. Panels continuous over two or more spans. End laps to occur near purlin supports with panels overlapped 6 in. Panels may be mechanically curved to a minimum of 30 ft radius. A bead of sealant may be used at panel side ribs and end laps. Side ribs to be continuously seamed with a special seaming tool with the seaming operation to include panel clips and panel batten.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel"

1A. **Panel Batten*** — Located on top of panel ribs, 1-1/4 in. wide with 5/8 in. legs. Fabricated from same material as panels.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Batten"

2. **Roof Deck Fasteners* — (Panel Clips)** — One piece assembly. Located at side of panels, spaced 36 in. OC max. Fabricated from 16 ga. galvanized steel. 2 in. wide base, 4-1/4 in. long, 3-3/8 in. high.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip"

2A. **Roof Deck Fasteners* — (Panel Clips)** — (Not Shown) — Located at sides of panels over purlins, spaced 36 in. OC. Two piece assembly consisting of a base and an upper clip. Base 2 in. wide, 2-1/2 in. long formed to engage upper clip. Upper clip 5 in. long, 3 in. high with opposing horizontal upper legs and with the lower edge formed to engage the base. Both parts fabricated from No. 16 MSG min coated or stainless steel.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip" 2 piece clip

3. **Fasteners (Screws)** — Fasteners used to attach panel clips (Item 2) to liner panel to be No. 12 self-tapping, hex-head stainless or plated steel screws. Length to penetrate liner panel 3/4 in. Two fasteners used per clip. Fasteners used at panel end laps are to be per manufacturer's instructions.

4. **Foamed Plastic** — (Optional) — Extruded foamed plastic. Max thickness 6 in. Min density 2.0 pcf. or see products Classified under TJBX. Located over liner panel.

5. **Liner Panel** — Fabricated from No. 22 min thickness coated steel. Min depth 15/16 in., max pitch 7.2 in., min yield strength 33,000 psi. Max span of panel units to be per manufacturer's instructions for uplift loading. Panels attached to structural supports with screws or welds per liner panel manufacturer's instructions for uplift loading.

6. **Bearing Plate** — No. 22 MSG steel, 3 in. wide by 6 in. long to be located under each panel clip.

7. **Purlins** — Purlins used for liner panels to be cold formed steel sections. As alternates, structural steel components (hot rolled beams, channels, open web joists, etc.) may be used. Min gauge and yield to depend on design considerations for uplift loading. Max spacing to depend on design considerations for uplift loading.

Refer to General Information, Roof Deck Construction (Roofing Materials and Systems Directory) for items not evaluated.

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Construction No. 678B
TGKX.678B
Roof Deck Constructions

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Roof Deck Constructions

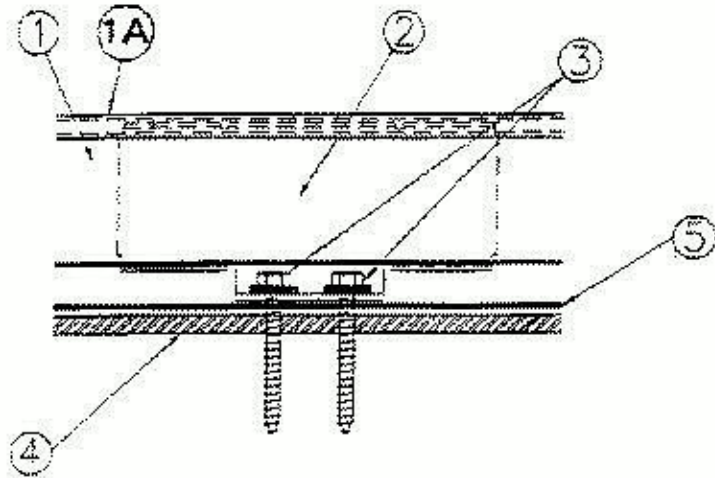
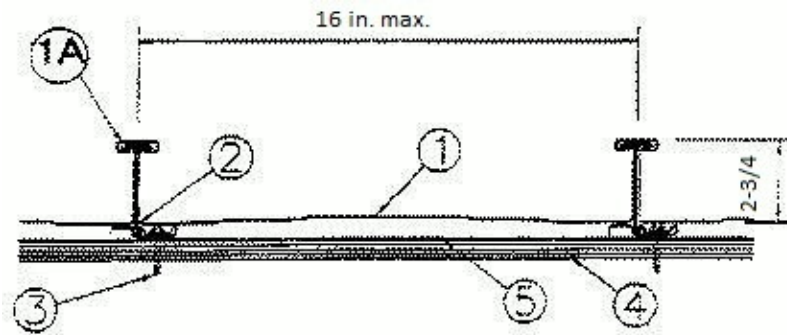
[See General Information for Roof Deck Constructions](#)

Construction No. 678B

August 23, 2013

Uplift — Class 90

Fire Not Investigated



1. **Metal Roof Deck Panels*** — No. 24 MSG min. thick coated steel, 16 in. wide max, 2-3/4 in. high at the side ribs. Steel batten (Item 1A) used over panel side ribs. Panels continuous over three or more clips. Side ribs to be seamed continuously with a special seaming tool with seaming operation to include panel clips (Item 2) and panel batten. End laps to be 6 in. wide. Panels may be mechanically curved to a minimum of 30 ft radius.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel"

1A. **Metal Roof Deck Panels* (Panel Batten)** — Located on top of panel ribs, 1-1/4 in. wide with 5/8 in. legs. Fabricated from same material as panels.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Batten"

2. **Roof Deck Fasteners*** — (Panel clips) — One piece assembly. Located at side of panels, spaced 24 in. OC. Fabricated from 16 ga galvanized steel. 2 in. wide base, 4-1/4 in. long, 3-3/8 in. high.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip"

2A. **Roof Deck Fasteners*** — (Panel Clips) — (Not Shown) — Located at sides of panels over purlins, spaced 24 in. OC. Two-piece assembly consisting of a base and an upper clip. Base 2 in. wide, 2.5 in. long formed to engage upper clip. Upper clip 5 in. long, 3-3/8 in. high with opposing horizontal upper legs and with the lower edge formed to engage the base. Both parts fabricated from No. 16 MSG min galvanized steel.

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 3000 Panel Clip" 2 piece clip.

3. **Fasteners (Screws)** — Fasteners used to attach panel clips (Items 2 and 2A) to plywood deck (Item 4) to be No. 12 self-tapping stainless or plated steel wood screws with or without washers. Fasteners used at panel end laps are to be per manufacturer's instructions.

Fasteners used to attach the plywood deck to supports (Item 6) to be No. 8-18 by 2-12 in. long bugle head screws with a No. 2 Phillips drive. Fastener spaced 6 in. OC at butt joints and 12 in. OC in the field.

4. **Plywood Decking** — Plywood decking to be graded per PS83 specifications, 15/32 in. (nom 1/2 in.) thick, exposure 1, APA rated sheathing, 40/20 square edged. Butt ends not blocked.

5. **Underlayment** — Underlayment used over plywood decking (Item 4) to be 15 lb, Type 30 organic felt. Sides and end laps 4 in. Fastened to plywood decking with staples in a random spacing.

6. **Supports** — (Not Shown) Spaced max of 24 in. OC. Any of the following types may be used to support the plywood decking (Item 4).

- A. Nom 2 by 6, min. No. 2 Grade AFPA S-P-F Hemlock Fir, Douglas Fir, Southern Pine, or equivalent.
- B. Wood trusses with a nom 2 by 4 in. upper chord of the same grade as Item A.

Refer to General Information, Roof Deck Construction (Roofing Materials and Systems Directory) for Items Not Evaluated.

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

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