

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. 238A

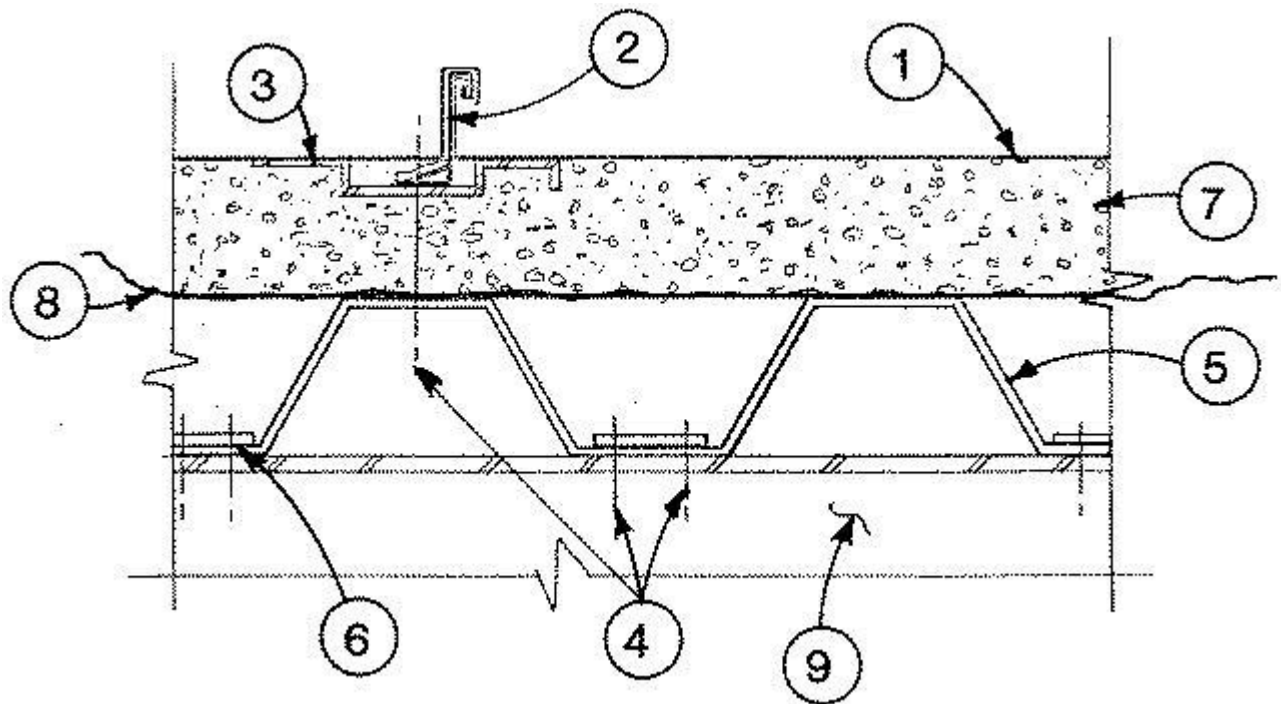
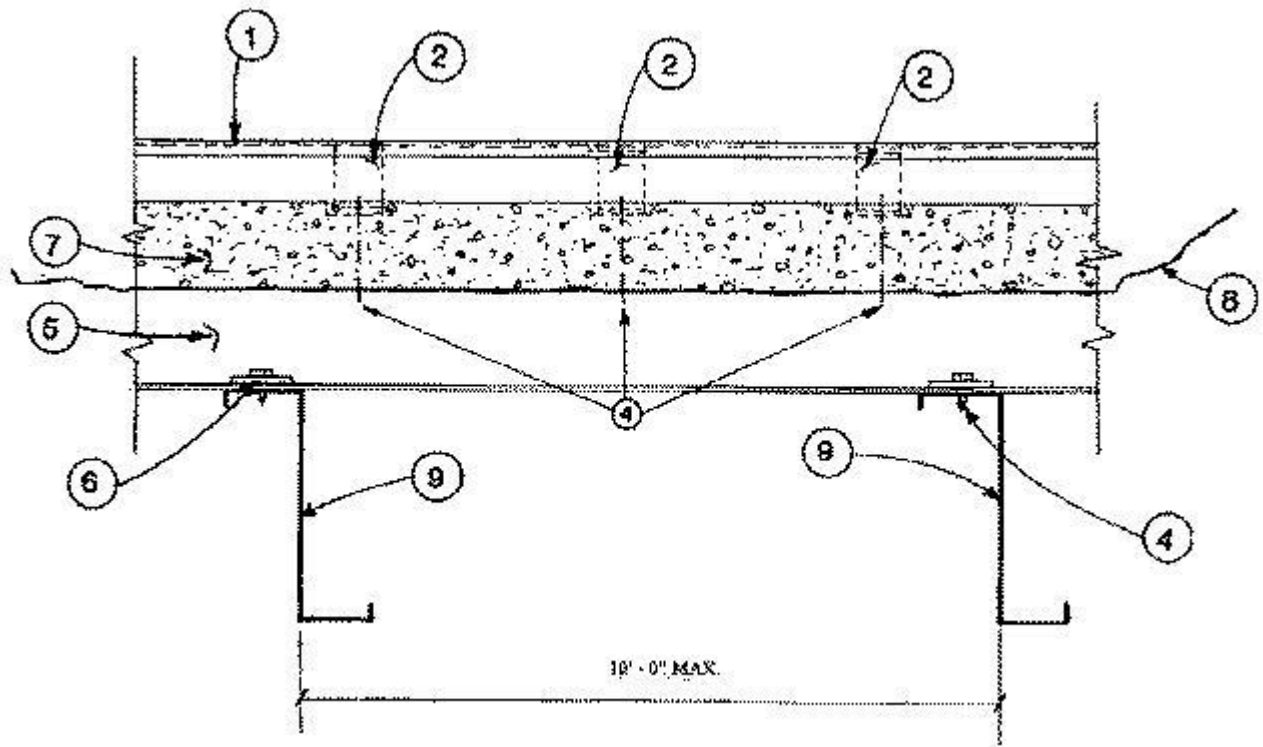
October 03, 2023

Uplift — Class 90
Fire Not Investigated

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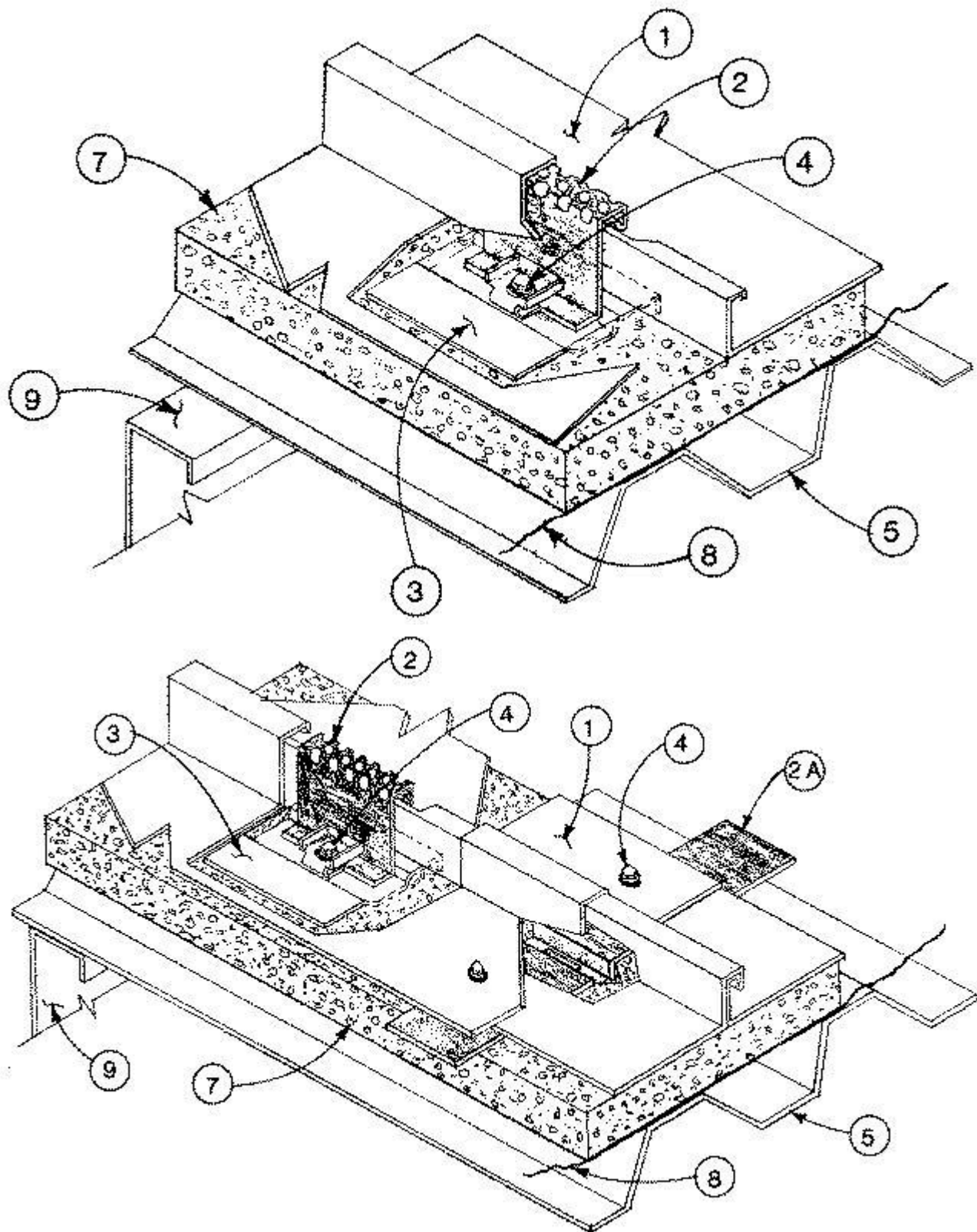
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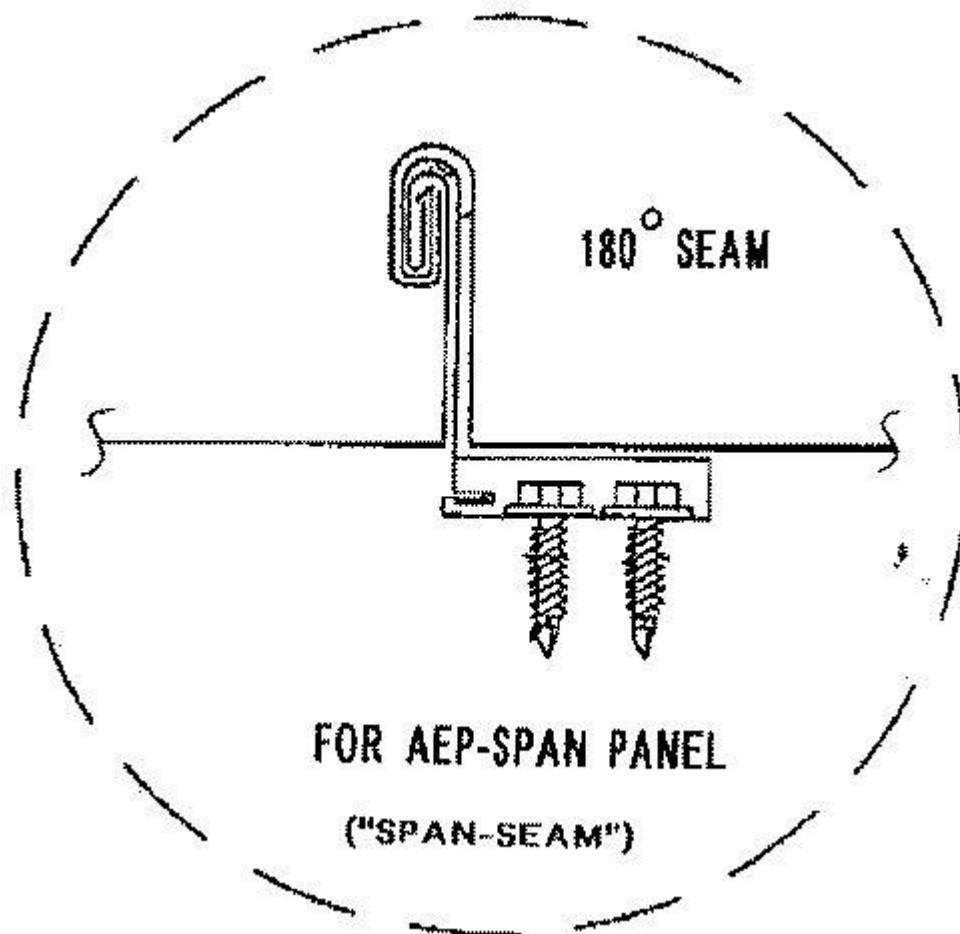
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1. **Metal Roof Deck Panels*** — No. 24 MSG minimum coated steel. Panels 16 in. wide, 2 in. high at side ribs. Panels continuous over two or more spans. End laps to occur near panel clip locations and to include end lap back-up plate (Item 2A). Ends of panels overlapped 6 in. Side laps to be tightened and crimped with a special motorized crimping machine at a maximum 45 degree angle unless indicated in the individual panels in this item. Crimping process to include tabs of panel clips (Item 2). A bead of sealing compound may be used at panel end laps and side joints.

A-LERT ROOF SYSTEMS ([View Classification](#)) — "A-Lert Loc"

ADVANCED ROOFING TECHNOLOGY INC ([View Classification](#)) — "ARTK 12" and "ARTK 16"

AEGIS ROOFING COMPANY ([View Classification](#)) — "Aegis 50 Architectural Profile"

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)

BAKER ROOFING INC ([View Classification](#)) — "2 in. Mechanical Seamed"

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

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CENTURION INDUSTRIES INC, DBA TFC CANOPY ([View Classification](#)) — "Centurion 1624M"

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CONSTRUCTION METAL PRODUCTS INC ([View Classification](#)) — "CMP Series 2500"

CUSTOM-BILT METALS ([View Classification](#)) — "CB-2000"

DREXEL METALS INC ([View Classification](#)) — "DMC 200S"

DREXEL METALS, INC. ([View Classification](#)) — "Met-Fab III"

EAST TEXAS ARCHITECTURAL SHEETMETAL L L C, DBA ETAS INC ([View Classification](#)) — "2" SPANLOCK"

ENCORE STEEL BUILDING COMPANY ([View Classification](#)) — "SSR-LOK 210"

ENGLERT INC ([View Classification](#)) — "Series 2400" and "Series 2500"

FABRAL INC ([View Classification](#)) — "PowerSeam"

H&H METAL PRODUCTS INC ([View Classification](#)) — "Uni-SeamLoc" (180° Seam)

HPM BUILDING SUPPLY ([View Classification](#)) — "Custom-Lock 2"

KIRBY BUILDING SYSTEMS INC ([View Classification](#)) — "Roof Lok 90" (90° Seam), or "Roof Lok 360" (180° Seam)

LAWMAN HEATING & COOLING INC ([View Classification](#)) — "SS210A"

MCELROY METAL MILL INC ([View Classification](#)) — "ABC JSM 200"

METAL PANELS INC ([View Classification](#)) — "SSLF2A"

METAL PANEL SYSTEMS INC ([View Classification](#)) — "MP-200" or "UC6"

METAL ROOFING SYSTEMS INC ([View Classification](#)) — "MRS System 2500"

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

MORIN CORP ([View Classification](#)) — "SLR-12", "SLR-14", "SLR-16" (90° or 180° Seam)

NEW TECH MACHINERY CORP ([View Classification](#)) — "SS210A"

NEXT PHASE ROOFING ([View Classification](#)) — "NP 210A"

NUCOR CORP. (NUCOR BUILDINGS GROUP) ([View Classification](#)) — "VR16 II-90" or "VR16 II-360"

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PMRS ([View Classification](#)) — "200MS"

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RPR INC, DBA RAIN PROOF ROOFING ([View Classification](#)) — "RP210"

partners. [Learn more](#)

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

- ROOF WORKS FABRICATING L L C** ([View Classification](#)) — "SS210"
- ROOFMASTERS ROOFING & SHEET METAL CO INC** ([View Classification](#)) — " Loc Master"
- SAN ANTONIO QUALITY METALS** ([View Classification](#)) — "ML-200"
- SHEFFIELD METALS INTERNATIONAL** ([View Classification](#)) — "SMI 2" A Mechanical Seam"
- STORAGE STRUCTURES INC.** ([View Classification](#)) — "SS210A"
- STREAMLINE ROOFING & CONSTRUCTION INC** ([View Classification](#)) — "200MS"
- SUPERIOR METAL SYSTEMS INC** ([View Classification](#)) — "SMS 416"
- TAYLOR METAL INC, DBA TAYLOR METAL PRODUCTS** ([View Classification](#)) — "Mechanical Seam 200"
- THE BRYER CO** ([View Classification](#)) — "TBC-SUPERSEAM"
- THREE DIAMOND FAB LLC** ([View Classification](#)) — "TDF-SSC200"
- UNION CORRUGATING CO** ([View Classification](#)) — "ML200"
- U S METALS L L C** ([View Classification](#)) — "US-210A"
- VARCO PRUDEN BUILDINGS, DIV OF BLUESCOPE BUILDINGS NORTH AMERICA INC** ([View Classification](#)) — "SLR II"
- WESTERN STATES METAL ROOFING** ([View Classification](#)) — "MS2 ®"
- ZIMMERMAN METALS INC** ([View Classification](#)) — "SS2000"
- 2. Roof Deck Fasteners* (Panel Clips)** — Two part assembly: Base, 1 in. wide approximately 1-1/4 in. long with upper segment folded over lower end of tab. Fabricated from 0.050 in. thick coated or stainless steel. Upper tab 3 in. wide, maximum tab height 3-1/2 in. with lower end formed to engage base. Fabricated from 0.023 in. thick coated or stainless steel. Clips spaced 30 in. OC.
- BUILDING PRODUCTS DEVELOPMENT INC** ([View Classification](#)) — "NC3300", "NCF-3300", "NCF-3300-SS" Series Clip
- HPM BUILDING SUPPLY** ([View Classification](#)) — "CL2 Clip"
- MCELROY METAL MILL INC** ([View Classification](#)) — "ABC JSM 200 Utility"

2A. Roof Deck Fasteners* (End Lap Back-Up Plate) — No. 18 MSG minimum gauge coated steel. Maximum length 48 in., width 6-
2B. Roof Deck Fasteners* (Panel Clips) — (Not Shown) — Two part assembly. A base fabricated from No. 16 MSG minimum thick coated steel and a tab fabricated from No. 22 MSG minimum thick coated steel. Clips spaced 30 in. OC maximum. Clips fastened to liner panel (Item 5). Two screws used per clip. (See Item 4 for description of screws).

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As an alternate the following described clip may be used: Two part assembly consisting of a base with a vertical leg 5 in. long and either 2 in. or 3 in. high and a tapered upper tab maximum 3 in. long formed to interlock with the base. Base fabricated from No. 18 MSC coated steel and to have two 1/4 in. guide holes. Upper tab fabricated from No. 25 MSC coated steel.

AEP SPAN, DIV OF ASC PROFILES ([View Classification](#)) — "SL-2.5 in. Standard Clip", "SL-2 in. Profile Clip"

BUTLER MANUFACTURING, DIV OF BLUESCOPE BUILDINGS NORTH AMERICA INC ([View Classification](#)) — "VSR11 2.5 Clip"

FABRAL INC ([View Classification](#)) — "AMP-Loc High Fixed", "AMP-Loc Low Fixed", "AMP-Loc High Floating", "AMP-Loc Low Floating", "PowerSeam Low Floating", "PowerSeam High Floating".

VARCO PRUDEN BUILDINGS, DIV OF BLUESCOPE BUILDINGS NORTH AMERICA INC ([View Classification](#)) — "SLR11 2.5 Clip"

2C. Roof Deck Fasteners* (Back-Up Plates) — (Not Shown) — Used with AEP-Span "SL-216" panels. No. 16 MSG coated steel length 10-1/2 in., width 15-3/4 in. slipped under lower panel at end-lap. Panels fastened together at end-lap using four No. 1/4 - 14 by 1-1/8 in. long self-drilling self-tapping, hex-washer-head, plated steel screws with a 5/8 OD steel washer and a sealing washer. Screws spaced 4 in. OC beginning 2 in. from ribs.

AEP SPAN, DIV OF ASC PROFILES ([View Classification](#)) — "SL-216 End-Lap Back-Up Plate"

2D. Roof Deck Fasteners* (Panel Clip) — (Not Shown) — Two part assembly; A base fabricated from No. 16 MSG minimum coated steel and an upper tab fabricated from No. 22 MSG minimum coated steel. Clips fastened to purlins using two fasteners per clip. See Item No. 4 for description of fasteners.

METAL SALES MANUFACTURING CORPORATION ([View Classification](#)) — "T-Span Clip"

2E Roof Deck Fasteners* — (Panel Clips) — (Not Shown) — No. 22 MSG minimum coated steel. Clips located at panel sides. Guide Holes in bottom clip to accommodate two screw fasteners (Item 4).

FABRAL INC ([View Classification](#)) — "AMP-Loc Low Fixed", "AMP-Loc High Fixed".

2F. Roof Deck Fasteners (Panel Clips) — (Not Shown) — No. 24 MSG minimum gauge coated steel with a separately formed base fabricated of No. 18 MSG min 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"

KIRBY BUILDING SYSTEMS INC ([View Classification](#)) — "LSBC-1" or "Roof Lok Clip"

SUPERIOR METAL SYSTEMS INC ([View Classification](#)) — SMS-24SSC

3. Roof Deck Fastener* (Bearing Clip) — No. 18 MSG minimum gauge coated steel; 3 in. wide by 3-1/4 in. long with 3/8 in. legs. Used under Panel Clips (Item 2, 2D, 2E and 2F) over purlins and rigid insulation. Three 1/4 in. diameter guide holes located in base.

3A. Roof Deck Fasteners* (Bearing Plate) — (Not Shown) — No. 24 MSG minimum gauge coated steel. 4-5/8 in. wide, 6 in. long used under each panel clip (Item 2B).

AEP SPAN, DIV OF ASC PROFILES ([View Classification](#)) — "SL Bearing Plate"

4. Fasteners (Screws) — Fasteners used to attach panel clips (Item No. 2) to the liner panels (Item No. 5) to be No. 11 by minimum 3-3/4 in. long self-drilling, plated steel flat Phillips head screws. One screw used for each panel clip. Fasteners used to be No. 12-14 by 1-1/4 in. self-drilling, self-tapping, hex-head, plated steel screws with a separate 5/8 in. diameter steel washer and a neoprene sealing washer. Two fasteners to be used at each support with fasteners located in every valley. Fasteners used at liner panel side laps to be

the same type as liner panel screws and spaced 20 in. OC. Fasteners used at metal roof deck panel end laps to be 1/4-10 by 1 in. long self-drilling, self-tapping, hex-head, plated steel screws with 1/2 in. OD metal backed sealing washers, 1/4-14 x 1 1/4" minimum Self-Drilling, Self-Tapping Plated Steel Screw with EPDM Sealing Washer or 17-14 x 1 1/4" Min Type AB SDST plated steel screw with EPDM Sealing Washer. Spacing to be in a 1 3 3-1/2 3-1/2 2-1 in. pattern.

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5. Liner Panel — The liner panel to be minimum 1-1/2 in. deep Type A, B, F, or N Deck fabricated from No. 22 MSG minimum gauge steel. Yield strength to be minimum 33,000 psi. Liner panel to be fastened to supports with screws indicated under Item 4, 1/4-14 x 1 1/4" minimum Self-Drilling, Self-Tapping Plated Steel Screw for Purlins or 12-24 x 1 1/2" minimum for Joists, or with welds and weld washers of type indicated by manufacturer of liner panel. Welds to be located in every valley.

6. **Fastener Reinforcement (Bearing Plate)** — The reinforcements used with the screws attaching the liner panels to the purlins to be 0.125 in. thick and to have an area of approximately 2-in².

7. **Foamed Plastic (Rigid Insulation)** — Supplied in 4 ft wide sheets. Minimum thickness to be 1 in. Density to be minimum of 2.0-lb/ft³ or see products Classified under Foamed Plastic (TJBX).

8. **Vapor Barrier** — Used between the liner panel and the foamed plastic to be a 6 mil thick plastic sheeting.

9. **Purlins** — No. 12 MSG minimum gauge steel (minimum yield strength 40,000 psi) or minimum Type H Open web joists. Refer to General Information, Roof Deck Construction, (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 2023-10-03

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