

# TGKX.303 – 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.

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## Roof Deck Constructions

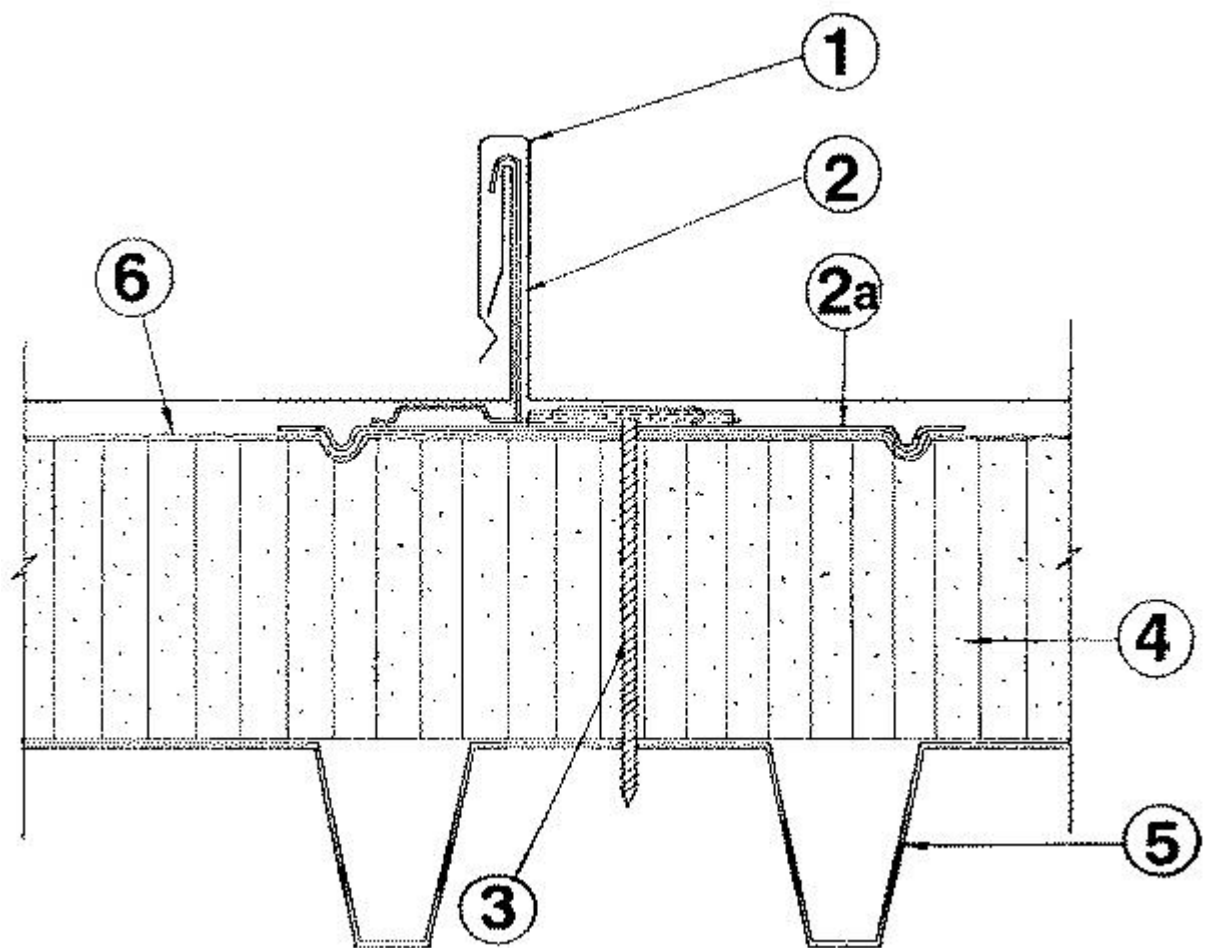
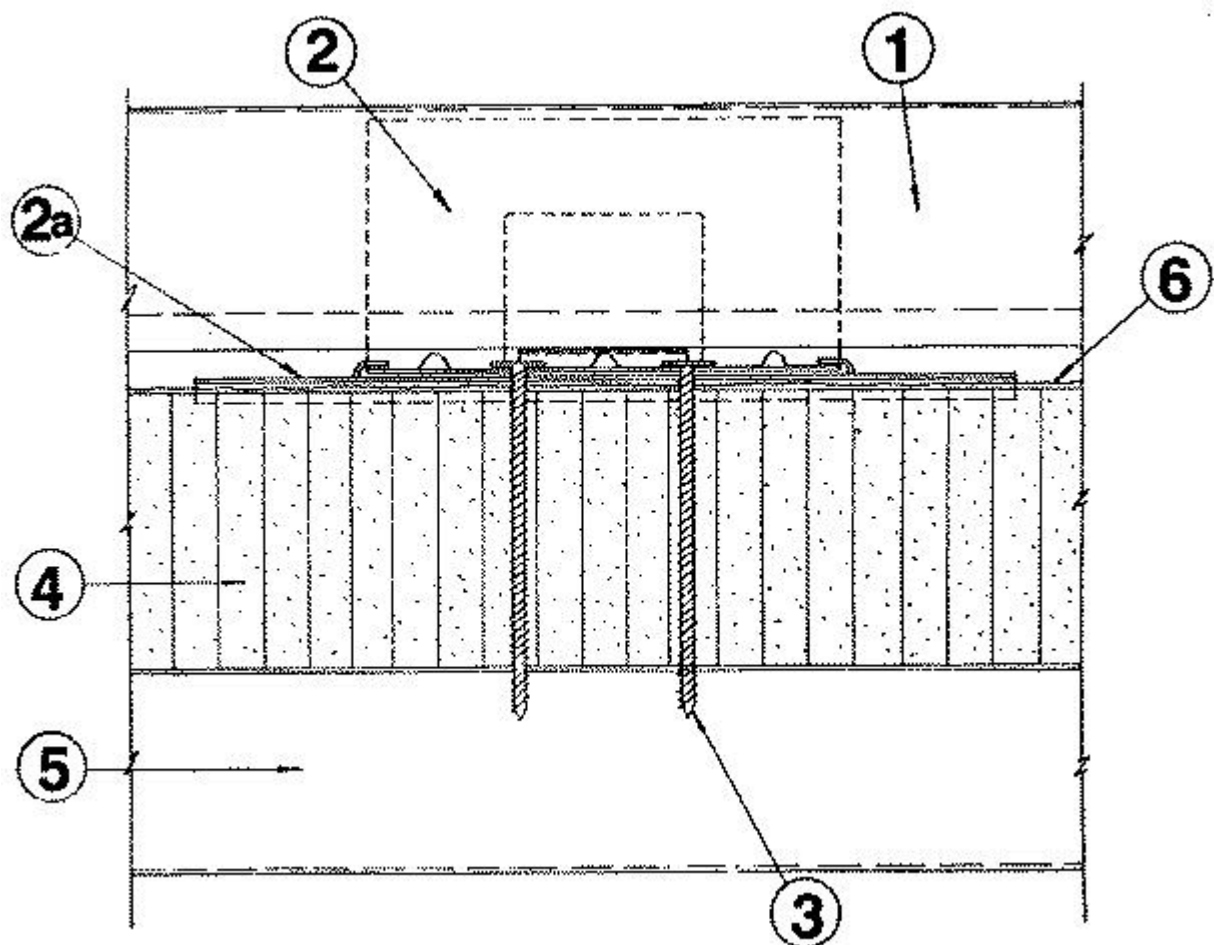
See General Information for Roof Deck Constructions

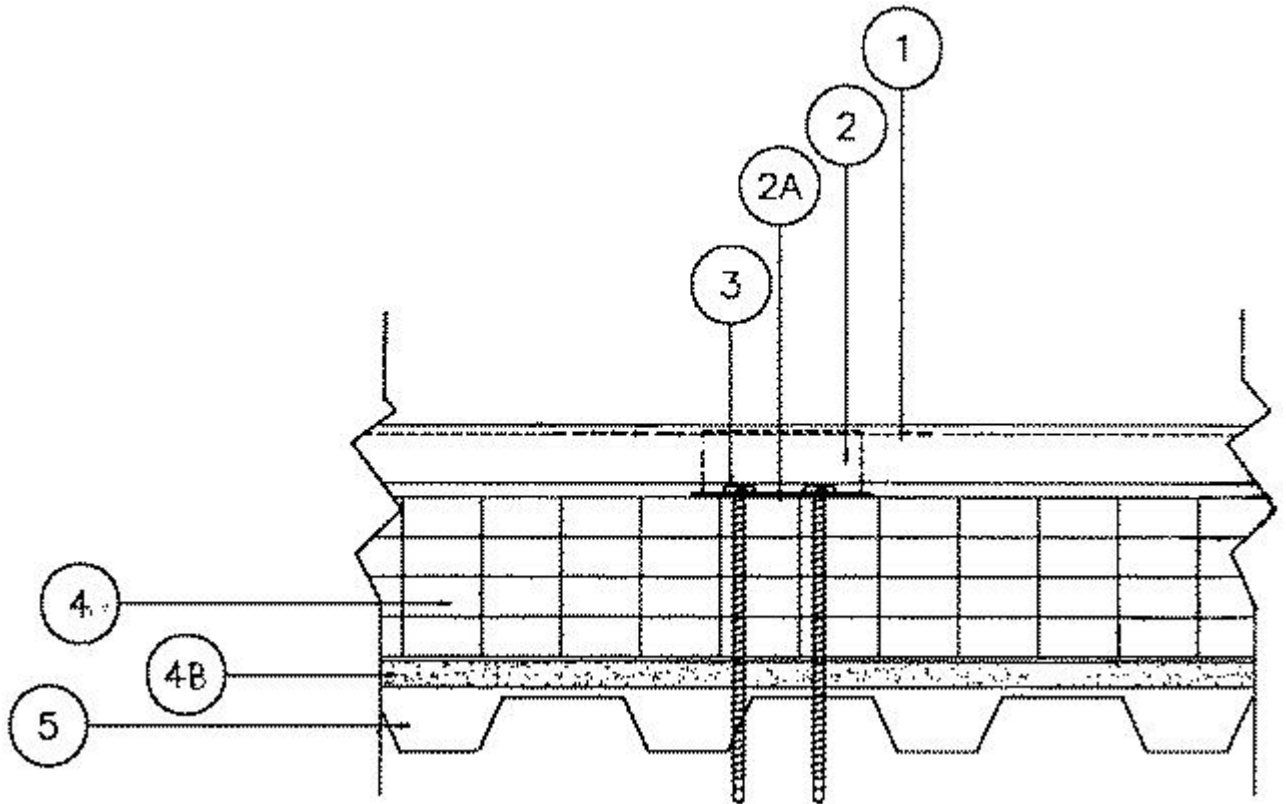
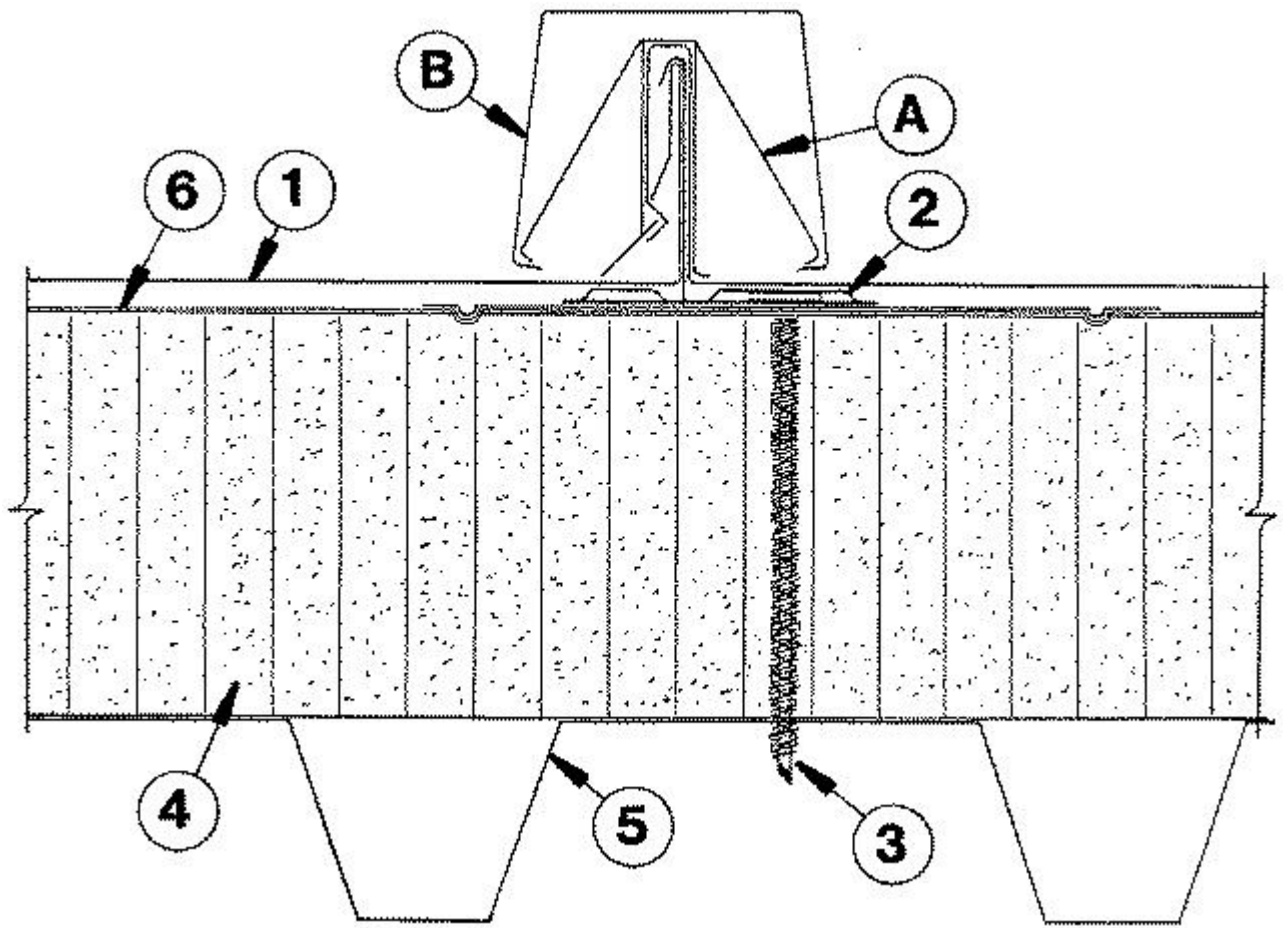
### **Construction No. 303**

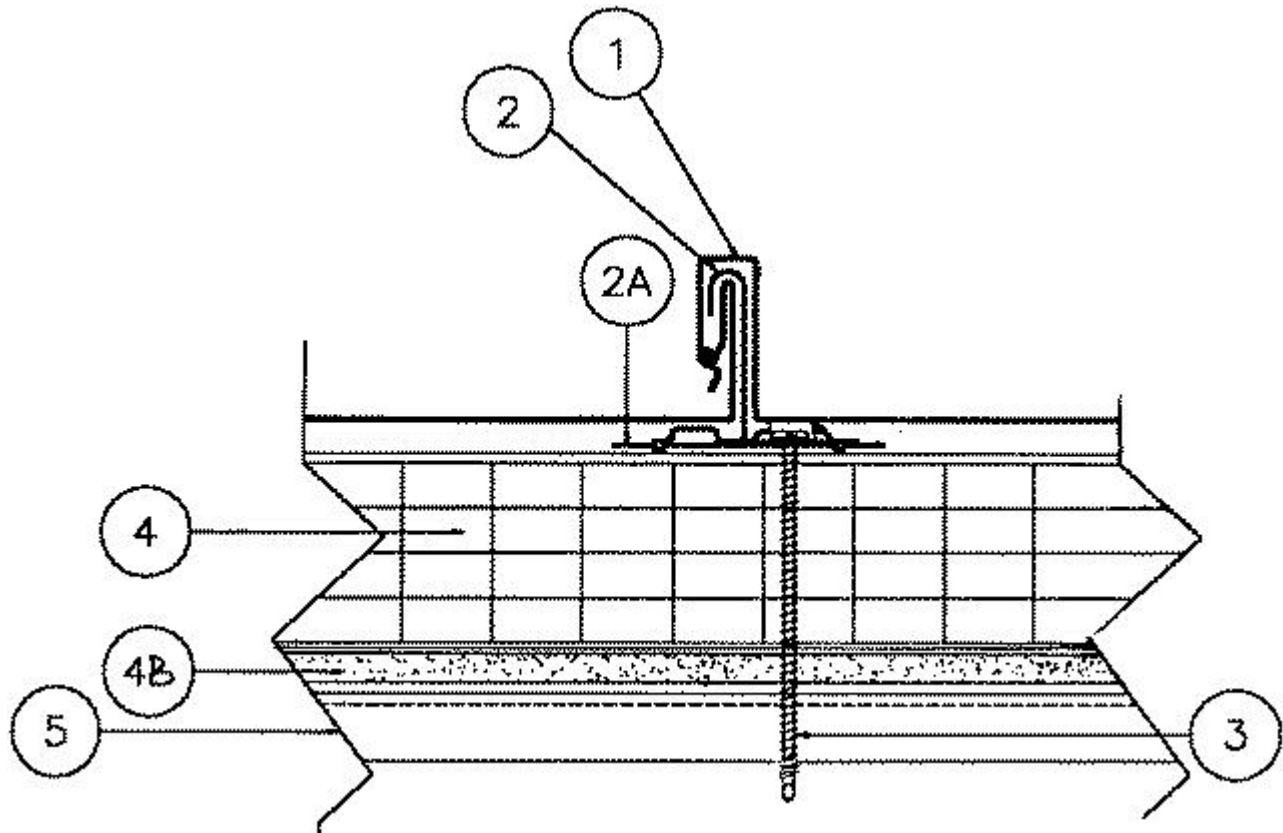
April 02, 2019

### **Uplift — Class 90**

**Fire Not Investigated (except when 4B is used)**







**1. Metal Roof Deck Panels\*** — No. 24 MSG min thickness coated steel. Panel width 18 in. max., 10 in. min. ribs height 1-3/4 in. at female side. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints.  
**A & S BUILDING SYSTEMS L P** (View Classification) — "LokSeam 10, 12 or 18"

**ACI BUILDING SYSTEMS INC** (View Classification) — "SnapLok"

**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "18 in. Snap-Seam", "12 in. Snap-Seam", "10 in. Snap-Seam"

**ALLIANCE STEEL INC** (View Classification) — "NFS16"

**AMERICAN BUILDINGS CO** (View Classification) — "Seam-Loc -12, -16, -18"

**AMERICAN BUILDING COMPONENTS** (View Classification) — "LokSeam"

**ARCHITECTURAL METAL SOLUTIONS** (View Classification) — "Snap-Lock"

**ATAS INTERNATIONAL INC** (View Classification) — "MRS Panel"

**BAKER ROOFING INC** — "Snap Seam"

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "EZ Loc"

**BERRIDGE MFG CO** (View Classification) — "Snaplock Panel"

**BOBBY JAMES INC** (View Classification) — "BJI675"

**BORGA STEEL INC** (View Classification) — "Vertical Lock"

**CENTRAL TEXAS METAL ROLLFORMING INC** (View Classification) — "Shurloc 175"

**CENTRIA, A DIVISION OF NCI GROUP, INC** (View Classification) — "SDP 175-12, -16, -18"

**CONSTRUCTION METAL PRODUCTS INC** (View Classification) — "CMP Series 2000"

**CREGO METAL SYSTEMS** (View Classification) — "CregoLock"

**DREXEL METALS INC** (View Classification) — "DMC 175S"

**DREXEL METALS, INC.** (View Classification) — "MetFab Snap-On 675"

**EAST TEXAS ARCHITECTURAL SHEETMETAL L L C, DBA ETAS INC** (View Classification) — "STRUCTURAL SNAP LOCK"

**ENGLERT INC** (View Classification) — "Series 2000"

**FABRAL INC** (View Classification) — "Thin Seam"

**FIRESTONE METAL PRODUCTS, A DIV OF FIRESTONE BUILDING PRODUCTS CO LLC** (View Classification) — "UC-14"

**GIDEON STEEL PANEL CO L L C** (View Classification) — "G175s"

**H&H METAL PRODUCTS INC** (View Classification) — "Uni-SnapLoc"

**HPM BUILDING SUPPLY** (View Classification) — "Sur-Lock"

**INTEGRIS METALS INC** (View Classification) — "Integris System 4"

**LAWMAN HEATING & COOLING INC** (View Classification) — "SS675"

**MADDOX ROOFING & CONSTRUCTION INC** (View Classification) — "SS675 SNAP-LOK"

**MASTERPIECE METALS** (View Classification) — "SS675"

**MBCI** (View Classification) — "LokSeam 10, -12 or -18"

**MCELROY METAL MILL INC** (View Classification) — "ABC Permaseam Panel"

**METAL FORMING INC** (View Classification) — "1.75 Snap Lock Steel Panel"

**METAL PANEL SYSTEMS INC** (View Classification) — "MP-175" or "UC14"

**METAL ROOFING SYSTEMS INC** (View Classification) — "MRS System 2000"

**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "Vertical Seam"

**METALLION INDUSTRIES INC** (View Classification) — "Clip Lock"

**MID-SOUTH METAL PRODUCTS** (View Classification) — "MSMP Structural Snap Lock"

**MORIN CORP** (View Classification) — "SWL-12", "SWL-16", "SWL-18"

**NCI BUILDING SYSTEMS L P** (View Classification) — "LokSeam"

**NEW TECH MACHINERY CORP** (View Classification) — "SS675"

**NORTHWEST ROOF TILE & METAL L L C** (View Classification) — "LT175"

**P S M L V INC DOING BUSINESS AS PENN SHEET METAL** (View Classification) — "PSM175SL"

**PETERSEN ALUMINUM CORP** (View Classification) — "Snap-Clad"

**PREMIUM PANELS INC** (View Classification) — "SS675"

**REEDS METALS OF BENTON** (View Classification) — "Secure-Seam"

**RLS METAL SYSTEMS INC** (View Classification) — "RLS 175S"

**ROLLFAB METAL BUILDING PRODUCTS** (View Classification) — "SL-175" or "1.75 Snap Lock Steel Panel"

**ROOF WORKS FABRICATING L L C** (View Classification) — "Snap Lock 675"

**RPR INC, DBA RAIN PROOF ROOFING** (View Classification) — "RP175"

**SHEET METAL WORKS OF ARIZONA** (View Classification) — "SL175"

**SHEFFIELD METALS INTERNATIONAL** (View Classification) — "SMI 1 3/4" SnapLock"

**SOUTHEASTERN METALS MANUFACTURING CO INC** (View Classification) — "Verti-Lok"

**STANDARD STRUCTURES INC** (View Classification) — "SnapSeam"

**STREAMLINE ROOFING & CONSTRUCTION INC** (View Classification) — "175SL"

**T T & L SHEET METAL INC** (View Classification) — "Earl 300"

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

**TREMCO INC** (View Classification) — "Tremlock SL Series II"

**UNION CORRUGATING CO** (View Classification) — "SL175"

**U S METALS L L C** (View Classification) — "US-175LS"

**V & R SHEET METAL LLC** (View Classification) — "SS675 Panel"

**VOGLER SHEET METAL COMPANY** (View Classification) — "VSM Snap-Tite"

**WESTAR ROOFING CORP** (View Classification) — "SL175"

**WHIRLWIND STEEL BUILDINGS INC** (View Classification) — "Weather Snap-12" or "Weather Snap-16"

1A. **Metal Roof Deck Panels\*** — (Not Shown) — To be used with Roof Deck Fastener (2E). 0.032 in. min thick aluminum, 16 in. wide, 1-3/4 in. high at the rib. Panels continuous over three or more clips with no end laps. A bead of sealant may be used at panel side joints.

**PETERSEN ALUMINUM CORP** (View Classification) — "Snap-Clad"

2. **Roof Deck Fasteners\* (Panel Clips)** — One piece assembly, No. 24 MSG min thickness, 3-1/2 in. wide, 1-15/16 in. high. Clip spacing to be 48 in. OC. Clips to interface with Item 2A (bearing plate).

**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "Snap-Seam Clip"

**AMERICAN BUILDING COMPONENTS** (View Classification) — "Lock-Seam UL 90 Clip"

**ARCHITECTURAL METAL SPECIALTIES INC** (View Classification) — "178-SLU-18-G(S)", "178-SLUP-18-G(S)" and "175-SLUZ-18-G(S)".

**ATAS INTERNATIONAL INC** (View Classification) — "MRS Clip"

**BEACON SALES ACQUISITION INC, DBA COASTAL METAL SERVICE** (View Classification) — "EZ Loc Panel Clip"

**CENTRIA, A DIVISION OF NCI GROUP, INC** (View Classification) — "C175"

**EXCEL STAMPING & MFG INC** (View Classification) — "LS-178-18 Clip"

**FIRESTONE METAL PRODUCTS, A DIV OF FIRESTONE BUILDING PRODUCTS CO LLC** (View Classification) — "UC-14 Clip"

**LOGAN STAMPINGS INC** (View Classification) — "Snap Lock Clip No. 675"

**MCELROY METAL MILL INC** (View Classification) — "ABC Permaseam Clip"

**METAL PANEL SYSTEMS INC** (View Classification) — "MP-175 Clip"

**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "Vertical Seam Clip"

**NCI BUILDING SYSTEMS L P** (View Classification) — "Lock-Seam UL 90 Clip"

**PETERSEN ALUMINUM CORP** (View Classification) — "Snap-Clad Clip"

2A. **Roof Deck Fasteners\* — (Bearing Plate)** — One piece assembly, No. 24 MSG min thickness steel, 4-1/2 in. wide, 6 in. long or No. 24 MSG minimum thickness, 5 in. wide, 3-7/8 in. long.

2B. **Bearing Plate** — (Not Shown) — To be used with "Lock-Seam UL 90 Clip", "Permaseam Clip", "K-Lok Structural Clips" or "MP-175 Clip" only, (Item 2). Bearing plates to be 16 MSG min coated steel, 3-7/8 wide by 5 in long (50,000 psi min yield strength).

2C. **Bearing Plate\*** — (Not Shown) — To be used with "Snap-Clad Clips" only (Item 2). To be 24 MSG thick coated steel, nom 4-5/8 in. wide by 6 in. long.

**PETERSEN ALUMINUM CORP** (View Classification) — "Snap-Clad Bearing Plate"

2D. **Bearing Plate** — (Not Shown) — To be used with "Vertical Seam Clip" only (Item 2) — Flat plate, 4 in. wide, 5 in. long fabricated from No. 20 MSG coated steel. Two 1/4 in. diam guide holes located to accommodate panel clip screw fasteners. (50,000 psi min yield strength).

2E. **Roof Deck Fasteners\* (Panel Clips)** — (Not Shown) — One piece assembly, 3-1/2 in. wide, 1-7/8 in high with a 1-3/8 in. wide horizontal leg. No. 18 MSG min thick coated steel. Two 1/4 in. guide holes located in horizontal leg. Clips spaced 18 in. OC.  
**PETERSEN ALUMINUM CORP** (View Classification) — "Snap-Clad Clip"

2F. **Roof Deck Fasteners\*** — (Bearing Plates) — Plates to be 4 in by 4 in. by No. 26 MSG min galvanized steel. Two 1/4 in. guide holes located in line with panel clip (Item 2) guide holes.

**FIRESTONE METAL PRODUCTS, A DIV OF FIRESTONE BUILDING PRODUCTS CO LLC** (View Classification) — "UC Bearing Plate"

3. **Panel Fasteners — (Screws)** — Fasteners used to attach panel clips and bearing plates (Items 2 & 2A) through rigid insulation and optional Cover Board (Item 7) into light gauge steel deck (Item No. 5) to be No. 14 truss head type with No. 3 Phillips drive, self-drilling steel screws. Two screws per clip to be used, inserted through 1/4 in. diam guide holes. Fasteners to penetrate liner panel 3/4 in. min.

3A. **Panel Fasteners — (Screws)** — (Not Shown) — When no Rigid Insulation (Item 4) is used, No. 10-16 by min 1 in. long TEK 3 Carbon pancake head, self-drilling, self-tapping screws to be used. When rigid insulation is used, No. 14-13 by varying lengths, DP1, carbon, pancake-head, Square/Phillips Head screws to be used. Two fasteners per clip to be used for either type.

4. **Foamed Plastic — (Rigid Insulation)** — Min thickness 1 in., max thickness 4-1/2 in. Density to be a min of 1.8 pcf. or see products Classified under TJBX Category.

4A. **Foamed Plastic\*** — (Rigid Insulation) — In lieu of Item 4, applied flat or tapered to maximum 10 in. thick combination of Item 4B. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used.

**FIRESTONE BUILDING PRODUCTS CO L L C** (View Classification) — "ISO 95+ GL" or "Resista"

4B. **Foamed Plastic** — (Rigid Insulation — Optional — Not Shown) — Placed on top of Item 4A. Maximum 10 in. thick combination of Item 4A. Bearing plates required under panel attachment points. Optional if Cover Board (Item 7) is used.

**FIRESTONE BUILDING PRODUCTS CO L L C** (View Classification) — "ISOGARD HD"

4C. **Foamed Plastic\*** — (Optional) — (Not Shown) — Rigid Foamed Plastic Insulation, "Foamular Thermapink 18" or "Foamular Thermapink 25", loose laid or mechanically fastened in one or more layers. Total thickness of insulation not to exceed 8 in.

**OWENS CORNING SPECIALTY & FOAM PRODUCTS** (View Classification)

5. **Liner Panel** — Min thickness No. 22 MSG. Coated steel (33000 psi) min yield strength min depth 1-1/2 in., max pitch 6 in. fabricated to various profiles.

6. **Underlayment** — (Not Shown) — One ply of 30 lb roofing felt or one layer of bituminous resin type water proofing membrane or self-adhering underlayment, installed per manufacturer's instructions.

7. **Cover Board** — (Optional — Not Shown) — Min 1/2 in. thick (15/32 in. actual) plywood, DOC PS-1 rated (square edged may be used) or min 7/16 in thick OSB, DOC PS-2 rated, 1/2 in. thick gypsum board, 1/2 in. wood fiberboard, 1/4 in. min thickness G-P Gypsum "DensDeck", 1/4 in. min thick USG "SECUROCK Glass Mat Board" or "SECUROCK Roof Board" applied over the liner panel (Item 5) in lieu of Foamed Plastic (Item 4) or over Foamed Plastic (Items 4, 4A and/or 4B and 4C). When used or used over Foamed Plastic bearing plate not required.

8. **Supports** — (Not Shown) — Used to support liner panels, spaced per deck manufacturer's specifications for uplift. The following items may be used in conjunction with the "AEP SPAN" Metal Roof Deck Panels (Item 1). When used, the panel system is identified as "SNAP-SEAM (SBS)".



A. **Batten Clips\*** — Slipped over ribs formed by roof deck panels. One piece assembly, 1-3/4 in. high, 1-3/4 in. max width, with four legs and two arms. Formed to engage ribs of AEP SPAN Panels and Batten Cap (Item B). Clips spaced 48 in. OC.  
**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "SNAP-SEAM (SBS) Clip"

B. **Batten Cap\*** — Slipped over batten clip. Two inches high 1-1/2 in. wide at top with sides formed to engage batten clip. Snapped over batten clips.  
**AEP SPAN, DIV OF ASC PROFILES** (View Classification) — "SNAP-SEAM (SBS) Batten"

The following items may be used in conjunction with the "K-Lok Structural Panel" (Item 1).

A. **Batten Clips\*** — Slipped over ribs formed by roof deck panels. One piece assembly formed to engage ribs of "K-Lok Structural Panels (Item 1) and Batten Cap (Item B). Spaced 48 in. OC.  
**ATAS INTERNATIONAL INC** (View Classification) — "MRS Batten Clip"

B. **Batten Cap\*** — Slipped over batten clip (Item A) and formed to snap and engage batten clip.  
**ATAS INTERNATIONAL INC** (View Classification) — "MRS Batten"

The following items may be used in conjunction with the "Design-Lok" panel (Item 1).

A. **Batten Clips\*** — Slipped over ribs formed by roof deck panels. One piece assembly formed to engage ribs of "Design-Lok" panels (Item 1) and "Design-Lok Batten Cap" (Item B) spaced 48 in. OC.  
**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "Vertical Seam Batten Clip".

B. **Batten Cap\*** — Slipped over batten clip (Item A), formed to snap over and engage batten clip.  
**METAL SALES MANUFACTURING CORPORATION** (View Classification) — "Vertical Seam Batten Cap".

The following items may be used in conjunction with the "Structural Standing Seam" panel and a Classified Batten Clip as described in this construction.

A. **Snap-on-Batten** — Slipped over a Classified Batten Clip, formed to snap over and engage batten clip.  
The following items may be used in conjunction with the "SDP 175-12, -16, -18" panels. (Item 1).

A. **Batten Clips\*** — Slipped over ribs formed by roof deck panels. One piece assembly formed to engage ribs of "SDP 175-12, -16, -18" panels. (Item 1) and "SDP 175B" battens (Item B). Spaced 48 in. OC.  
**CENTRIA, A DIVISION OF NCI GROUP, INC** (View Classification) — "175B"

B. **Batten Cap\*** — Slipped over batten clip (Item A) and formed to snap and engage batten clip.  
**CENTRIA, A DIVISION OF NCI GROUP, INC** (View Classification) — "SDP 175B".

Refer to General information, Roof Deck Constructions 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.**

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