



Section 05 31 23 - Steel Roof Deck
ASC Steel Deck - Roof Deck and DeltaGrip® Specs

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Steel roof deck and accessories.

1.2 RELATED SECTIONS

- A. Section 03 31 00 - Structural Concrete
- B. Section 03 34 00 - Low Density Concrete
- C. Section 03 50 00 - Cast Decks and Underlayment
- D. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing
- E. Section 05 50 00 - Metal Fabrications
- F. Section 09 90 00 - Painting and Coating

1.3 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI/SDI-RD - Standard for Steel Roof Deck
 - 2. ANSI/SDI-C - Standard for Composite Steel Floor Deck
- B. American Welding Society (AWS):
 - 1. AWS D1.3 - Structural Welding Code-Sheet Steel
- C. ASTM International (ASTM):
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - 2. ASTM A 1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
 - 3. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
 - 4. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
 - 5. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests
- D. FM Global (FM):
 - 1. FM - Approval Guide, Building Materials
 - 2. FM 4451 - Approval Standard for Class 1 Insulated Steel Roof Decks
- E. Underwriters Laboratories (UL)

1.4 DEFINITIONS

- A. ASD - Allowable Strength Design method
- B. LRFD - Load and Resistance Factor Design method
- C. TSW - Top Seam Welds
- D. DG – DeltaGrip®
- E. Fr – Smooth Series™ Rivet Attachment
- F. Cell Deck Pan – Flat bottom section of cell deck
- G. Cell Deck Beam – Top fluted section of cell deck
- H. AW – Acoustical Deck, Web Perforated
- I. AT – Acoustical Deck, Total Perforated

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements
- B. Product Data: For each type of decking specified, including dimensions, components, profiles, and finishes
- C. Shop Drawings: Layout of decks, anchoring, reinforcing, openings, joints, accessories, and attachments details
- D. Welding certificates
- E. Product certificates
- F. Product Test Reports: Tested by qualified testing agency, showing compliance with specified requirements for acoustical roof deck
- G. Field quality-control reports
- H. LEED Submittals: Provide product data to document recycled content

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member to be in good standing of Steel Deck Institute (SDI)
- B. Installer Qualifications: Minimum two year experience installing similar products
- C. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated
- D. Welding: Qualify procedures and personnel according to AWS D1.3, Structural Welding Code - Sheet Steel

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in compliance with SDI MOC3
- B. Separate sheets and store on dry wood sleepers; slope for positive drainage. Cut plastic wraps for ventilation. Protect with a waterproof covering and ventilate to avoid condensation.
- C. Handle materials to avoid damage.

1.8 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions, temperature, humidity, and ventilation within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: ASC Steel Deck, which is located at 2110 Enterprise Blvd., West Sacramento, CA 95691; Tel: 800.726.2727; Website: <https://ascsd.com/>
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements

2.2 DESIGN / PERFORMANCE REQUIREMENTS

- A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's North American Specification for the Design of Cold-Formed Steel Structural Members and SDI RDDM Roof Deck Design Manual.
- B. Roof Decking:
 - 1. Deck shall meet the minimum design gage and yield strength specified on the drawings
 - 2. Whenever possible, the deck shall be multi-span.
- C. Factory Mutual Guide Listing: Provide steel roof deck evaluated by FM and listed in its "Approval Guide, Building Materials" for Class 1 fire rating and Class 1-90 windstorm ratings
- D. Fire-Resistance Ratings per ASTM E 119 or UL 263
 - 1. Indicate design designations from UL's "Fire Resistance Directory." Indicate rating and design designation on the Drawings.
 - 2. Indicate UL design designations from a qualified testing agency. Indicate rating and design designation on the Drawings.

2.3 ROOF DECK

- A. B Panels
 - a. Depth: 1.5 in.
 - b. Width: 36 in.
 - c. Standard Lengths: 3'-6" to 45'
 - d. Thickness:
 - i. 22 gage: 0.0299 in.
 - ii. 20 gage: 0.0359 in.
 - iii. 18 gage: 0.0478 in.
 - iv. 16 gage: 0.0598 in.
 - e. Sidelaps:
 - i. DGB-36: DeltaGrip® Sidelap
 - ii. B-36: Standard standing seam sidelap interlock
 - iii. BS-36: Screwable Sidelap
 - iv. BN-36: Nestable Sidelap
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653

1. Grade Options: Gr50
2. Metallic Coating Weight: G60, G90
3. Primer Color: Gray, White
- ii. Prime Shield® - Primer coated steel conforming to ASTM 1008
 1. Grade Options: Gr50
 2. Primer Color: Gray, White

B. N Panels

- a. Depth: 3 in.
- b. Width: 32 in.
- c. Standard Lengths: 3'-6" to 45'
- d. Thickness:
 - i. 22 gage: 0.0299 in.
 - ii. 20 gage: 0.0359 in.
 - iii. 18 gage: 0.0478 in.
 - iv. 16 gage: 0.0598 in.
- e. Sidelaps:
 - i. DGN-32: DeltaGrip® Sidelap
 - ii. N-32: Standard standing seam sidelap interlock
 - iii. NN-32: Nestable Sidelap
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 1. Grade Options: Gr50
 2. Metallic Coating Weight: G60, G90
 3. Primer Color: Gray, White
 - ii. Prime Shield® - Primer coated steel conforming to ASTM 1008
 1. Grade Options: Gr50
 2. Primer Color: Gray, White

C. 2WH Panels

- a. Depth: 2.125 in.
- b. Width: 36 in.
- c. Standard Lengths: 3'-6" to 45'
- d. Thickness:
 - i. 22 gage: 0.0290 in.
 - ii. 21 gage: 0.0330 in.
 - iii. 20 gage: 0.0359 in.
 - iv. 19 gage: 0.0420 in.
 - v. 18 gage: 0.0474 in.
 - vi. 16 gage: 0.0598 in.
- e. Sidelaps:
 - i. DG2WH-36: DeltaGrip® Sidelap
 - ii. 2WH-36: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 1. Grade Options: Gr50

2. Metallic Coating Weight: G60, G90
 3. Primer Color: Gray, White
 - ii. Prime Shield® - Primer coated steel conforming to ASTM 1008
 1. Grade Options: Gr50
 2. Primer Color: Gray, White
- D. 3WxH Panels
 - a. Depth: 3 in.
 - b. Width: 36 in.
 - c. Standard Lengths: 3'-6" to 45'
 - d. Thickness:
 - i. 22 gage: 0.0290 in.
 - ii. 21 gage: 0.0330 in.
 - iii. 20 gage: 0.0359 in.
 - iv. 19 gage: 0.0420 in.
 - v. 18 gage: 0.0478 in.
 - vi. 16 gage: 0.0598 in.
 - e. Sidelaps:
 - i. DG3WxH-36: DeltaGrip® Sidelap
 - ii. 3WxH-36: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 1. Grade Options: Gr50
 2. Metallic Coating Weight: G60, G90
 3. Primer Color: Gray, White
 - ii. Prime Shield® - Primer coated steel conforming to ASTM 1008
 1. Grade Options: Gr50
 2. Primer Color: Gray, White
- E. C1.4/CP-32 Panels
 - a. Depth: 1- 3/8 in.
 - b. Width: 32 in.
 - c. Standard Lengths: 4' to 45'
 - d. Thickness:
 - i. 26 gage: 0.0195 in.
 - ii. 24 gage: 0.0254 in.
 - iii. 22 gage: 0.0314 in.
 - iv. 20 gage: 0.0374 in.
 - v. 18 gage: 0.0480 in.
 - e. Sidelaps:
 - i. C1.4/CP-32: Nestable Sidelap
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 1. Grade Options: Gr80, Gr40 (only 18 gage)
 2. Metallic Coating Weight: G60, G90
- F. C0.9-32 Panels

- a. Depth: 7/8 in.
- b. Width: 32 in.
- c. Standard Lengths: 4' to 45'
- d. Thickness:
 - i. 26 gage: 0.0195 in.
 - ii. 24 gage: 0.0254 in.
 - iii. 22 gage: 0.0314 in.
 - iv. 20 gage: 0.0374 in.
- e. Sidelaps:
 - i. C0.9-32: Nestable Sidelap
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr80
 - 2. Metallic Coating Weight: G60, G90

2.4 ACOUSTICAL ROOF DECK

A. BA Panels

- a. Depth: 1.5 in.
- b. Width: 36 in.
- c. Standard Lengths: 3'-6" to 45'
- d. Thickness:
 - i. 22 gage: 0.0299 in.
 - ii. 20 gage: 0.0359 in.
 - iii. 18 gage: 0.0478 in.
 - iv. 16 gage: 0.0598 in.
- e. Sidelaps:
 - i. DGB-36AW and DGB-36AT: DeltaGrip® Sidelap
 - ii. B-36AW and B-36AT: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Primer Color: Gray, White
 - ii. Noise Reduction Coefficient (NRC):
 - 1. DGB-36AW and B-36AW: Minimum NRC value of 0.80 when used with fiberglass insulation board. Minimum 0.55 when used with polyisocyanurate board.
 - 2. DGB-36AT and B-36AT: Minimum NRC value of 0.85 when used with fiberglass insulation board. Minimum 0.55 when used with polyisocyanurate board.

B. NA Panels

- a. Depth: 3 in.
- b. Width: 32 in.
- c. Standard Lengths: 3'-6" to 45'
- d. Thickness:
 - i. 22 gage: 0.0299 in.
 - ii. 20 gage: 0.0359 in.

- iii. 18 gage: 0.0478 in.
- iv. 16 gage: 0.0598 in.
- e. Sidelaps:
 - i. DGN-32AW and DGN-32AT: DeltaGrip® Sidelap
 - ii. N-32AW and N-32AT: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Primer Color: Gray, White
 - ii. Noise Reduction Coefficient (NRC):
 - 1. DGN-32AW and N-32AW: Minimum NRC value of 0.95 when used with fiberglass insulation board. Minimum 0.70 when used with polyisocyanurate board.
 - 2. DGN-32AT and N-32AT: Minimum NRC value of 1.00 when used with fiberglass insulation board. Minimum 0.70 when used with polyisocyanurate board.

2.5 CELLULAR ROOF DECK

A. BF Panels

- a. Depth: 1.5 in.
- b. Width: 36 in.
- c. Standard Lengths: 5' to 40'
- d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
- e. Sidelaps:
 - i. DGBF-36 and DGBFr-36: DeltaGrip® Sidelap
 - ii. BF-36 and BFr-36: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 - 1. Welded attachments (F) with resistance welds in accordance with UL 209
 - 2. Smooth Series™ (Fr) with riveted attachment

B. NF Panels

- a. Depth: 3 in.
- b. Width: 32 in.

- c. Standard Lengths: 5' to 40'
 - d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
 - e. Sidelaps:
 - i. DGNF-32 and DGNFr-32: DeltaGrip® Sidelap
 - ii. NF-32 and NFr-32: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 - 1. Welded attachments (F) with resistance welds in accordance with UL 209
 - 2. Smooth Series™ (Fr) with riveted attachment
- C. 2WHF Panels
- a. Depth: 2.125 in.
 - b. Width: 36 in.
 - c. Standard Lengths: 5' to 40'
 - d. Thickness:
 - i. 20/20 gage: 0.035 in. / 0.036 in.
 - ii. 20/18 gage: 0.035 in. / 0.047 in.
 - iii. 20/16 gage: 0.035 in. / 0.059 in.
 - iv. 18/20 gage: 0.047 in. / 0.036 in.
 - v. 18/18 gage: 0.047 in. / 0.047 in.
 - vi. 18/16 gage: 0.047 in. / 0.059 in.
 - vii. 16/20 gage: 0.059 in. / 0.036 in.
 - viii. 16/18 gage: 0.059 in. / 0.047 in.
 - ix. 16/16 gage: 0.059 in. / 0.059 in.
 - e. Sidelaps:
 - i. DG2WHF-36 and DG2WHFr-36: DeltaGrip® Sidelap
 - ii. 2WHF-36 and 2WHFr-36: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White

- ii. Beam to Pan connection type:
 1. Welded attachments (F) with resistance welds in accordance with UL 209
 2. Smooth Series™ (Fr) with riveted attachment
- D. 3WxHF Panels
 - a. Depth: 3 in.
 - b. Width: 36 in.
 - c. Standard Lengths: 5' to 40'
 - d. Thickness:
 - i. 20/20 gage: 0.035 in. / 0.036 in.
 - ii. 20/18 gage: 0.035 in. / 0.047 in.
 - iii. 20/16 gage: 0.035 in. / 0.059 in.
 - iv. 18/20 gage: 0.047 in. / 0.036 in.
 - v. 18/18 gage: 0.047 in. / 0.047 in.
 - vi. 18/16 gage: 0.047 in. / 0.059 in.
 - vii. 16/20 gage: 0.059 in. / 0.036 in.
 - viii. 16/18 gage: 0.059 in. / 0.047 in.
 - ix. 16/16 gage: 0.059 in. / 0.059 in.
 - e. Sidelaps:
 - i. DG3WxHF-36 and DG3WxHFr-36: DeltaGrip® Sidelap
 - ii. 3WxHF-36 and 3WxHFr-36: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 1. Grade Options: Gr50
 2. Metallic Coating Weight: G60, G90
 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 1. Welded attachments (F) with resistance welds in accordance with UL 209
 2. Smooth Series™ (Fr) with riveted attachment

2.6 CELLULAR ACOUSTICAL ROOF DECK

- A. BFA Panels
 - a. Depth: 1.5 in.
 - b. Width: 36 in.
 - c. Standard Lengths: 5' to 40'
 - d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
 - e. Sidelaps:

- i. DGBF-36A and DGBFr-36A: DeltaGrip® Sidelap
 - ii. BF-36A and BFr-36A: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 - 1. Welded attachments (F) with resistance welds in accordance with UL 209
 - 2. Smooth Series™ (Fr) with riveted attachment
 - iii. Noise Reduction Coefficient (NRC):
 - 1. DGBF-36A, DGBFr-36A, BF-36A, and BFr-36A: Minimum NRC value of 0.85 when used with polyisocyanurate insulation board.
- B. NFA Panels
 - a. Depth: 3 in.
 - b. Width: 32 in.
 - c. Standard Lengths: 5' to 40'
 - d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
 - e. Sidelaps:
 - i. DGNF-32A and DGNFr-32A: DeltaGrip® Sidelap
 - ii. NF-32A and NFr-32A: Standard standing seam sidelap interlock
 - f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 - 1. Welded attachments (F) with resistance welds in accordance with UL 209
 - 2. Smooth Series™ (Fr) with riveted attachment
 - iii. Noise Reduction Coefficient (NRC):
 - 1. DGNF-32A, DGNFr-32A, NF-32A, and NFr-32A: Minimum NRC value of 0.85 when used with Poly-Iso insulation board
- C. 2WHFA Panels
 - a. Depth: 2.125 in.
 - b. Width: 36 in.

- c. Standard Lengths: 5' to 40'
- d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
- e. Sidelaps:
 - i. DG2WHF-36A and DG2WHFr-36A: DeltaGrip® Sidelap
 - ii. 2WHF-36A and 2WHFr-36A: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653
 - 1. Grade Options: Gr50
 - 2. Metallic Coating Weight: G60, G90
 - 3. Bottom Pan Primer Color: Gray, White
 - ii. Beam to Pan connection type:
 - 1. Welded attachments (F) with resistance welds in accordance with UL 209
 - 2. Smooth Series™ (Fr) with riveted attachment
 - iii. Noise Reduction Coefficient (NRC):
 - 1. DG2WHF-36A, DG2WHFr-36A, 2WHF-36A, and 2WHFr-36A: Minimum NRC value of 0.75 when used with polyisocyanurate insulation board.

D. 3WxHFA Panels

- a. Depth: 3 in.
- b. Width: 36 in.
- c. Standard Lengths: 5' to 40'
- d. Thickness:
 - i. 20/20 gage: 0.0359 in. / 0.036 in.
 - ii. 20/18 gage: 0.0359 in. / 0.047 in.
 - iii. 20/16 gage: 0.0359 in. / 0.059 in.
 - iv. 18/20 gage: 0.0478 in. / 0.036 in.
 - v. 18/18 gage: 0.0478 in. / 0.047 in.
 - vi. 18/16 gage: 0.0478 in. / 0.059 in.
 - vii. 16/20 gage: 0.0598 in. / 0.036 in.
 - viii. 16/18 gage: 0.0598 in. / 0.047 in.
 - ix. 16/16 gage: 0.0598 in. / 0.059 in.
- e. Sidelaps:
 - i. DG3WxHF-36A and DG3WxHFr-36A: DeltaGrip® Sidelap
 - ii. 3WxHF-36A and 3WxHFr-36A: Standard standing seam sidelap interlock
- f. Material:
 - i. Galvanized steel conforming to ASTM A653

1. Grade Options: Gr50
2. Metallic Coating Weight: G60, G90
3. Bottom Pan Primer Color: Gray, White
 - i. Beam to Pan connection type:
 1. Welded attachments (F) with resistance welds in accordance with UL 209
 2. Smooth Series™ (Fr) with riveted attachment
 - ii. Noise Reduction Coefficient (NRC):
 1. DG3WxHF-36A, DG3WxHFr-36A, 3WxHF-36A, and 3WxHFr-36A: Minimum NRC value of 0.80 when used with polyisocyanurate insulation board.

2.7 SIDELAP ATTACHMENTS

- A. DeltaGrip® attachment made on interlocking deck sidelaps with ASC Steel Deck and DeltaGrip® Tool at spacing designated on the approved installation drawings.
- B. Button Punch connection made on standing seam sidelaps with Button Punch Tool at spacing designated on the approval drawings.
- C. Self-Drilling Screws used on screwable and nestable sidelaps. Minimum edge distances for screws are to be 1.5 times the shank diameter of the screws and spaced as designated on the drawings.
 - a. No. 10 screws
 - b. No. 12 screws
- D. Top Seam Welds connect the standing seam deck sidelaps by welding the three layers of steel deck together. 3/8" x 1" welds are spaced as designated on the drawings.

2.8 DECK ATTACHMENTS

- E. Deck attachment pattern will be as indicated on drawings. Attachment pattern to provide sufficient strength to resist shear due to lateral loading and wind uplift.
- F. Welds
 - a. Arc Spot Welds
 - i. Steel deck welded at supports with minimum of 1/2" effective arc spot welds.
 - ii. Minimum substrate thickness of 0.135 in.
 - b. Arc Seam Welds
 - i. Required at support locations adjacent to sidelaps with minimum 3/8" x 1" effective arc seam welds.
 - ii. Minimum substrate thickness of 0.135 in.
- G. Self Drilling Screws
 - a. No. 12 screws
 - i. Minimum substrate thickness of 0.0385 in.
 - ii. Maximum substrate thickness of 0.210 in.
 - b. No. 14 screws
 - i. Minimum substrate thickness of 0.125 in.
 - ii. Maximum substrate thickness of 0.500 in.
- H. Hilti Fasteners
 - a. Hilti X-HSN-24
 - i. Minimum substrate thickness of 0.125 in.
 - ii. Maximum substrate thickness of 0.375 in.

- b. Hilti ENP19 L15
 - i. Minimum substrate thickness of 0.250 in.
- E. Pneutek Fasteners
 - a. Pneutek fasteners to be driven with the Pneutek fastening system to ensure tight contact between fastener and steel deck.
 - b. Pneutek SDK61
 - i. Minimum substrate thickness of 0.113 in.
 - ii. Maximum substrate thickness of 0.155 in.
 - c. Pneutek SDK63
 - i. Minimum substrate thickness of 0.155 in.
 - ii. Maximum substrate thickness of 0.250 in.
 - d. Pneutek SDK64
 - i. Minimum substrate thickness of 0.187in.
 - ii. Maximum substrate thickness of 0.312 in.
 - e. Pneutek SDK66
 - i. Minimum substrate thickness of 0.312 in.

2.9 ACCESSORIES

- A. Profile Closures:
 - a. Profile Cut Neoprene Closures
 - b. Profile Cut Metal Closures
- B. Flashings:
 - a. Galvanized steel flashings formed from ASTM A653 CS Type A galvanized steel sheets.
- C. Acoustical Fiberglass Batts

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Do not install roof deck until supporting construction is in place.
- B. Examine support framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting the performance of work of this section.
- C. If supporting construction is the responsibility of another installer, notify the architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installing steel deck.
- B. Locate steel deck bundles to prevent overloading of support members.
- C. Place steel deck in accordance with approved installation drawings.

3.3 INSTALLATION

- A. Install and fasten deck and accessories in accordance with the Contract Documents, approved installation drawings, manufacturer's documented instructions and requirements of ANSI/SDI-RD.
 - a. Welds shall comply with AWS D1.3.

- B. Place deck panels on structural supports and adjust to final position with ends aligned. Attach firmly to the supports immediately after placement to form a safe working platform.
- C. Cut and neatly fit deck units and accessories around openings and other work projecting through or adjacent to the decking.
- D. Trades that subsequently cut unscheduled openings through the deck are responsible for reinforcing the openings.
- E. Reinforce steel deck openings per contract documents and approved shop drawings.
- F. End Bearing: Install deck ends over supports with a minimum end bearing of 1.5 in. unless otherwise shown on approved installation drawings.
- G. Side Closures: Fasten to supporting structure and deck in accordance with the Contract Documents, approved installation drawings and requirements of ANSI/SDI RD.
- H. Acoustical Batt Insulation: Supplied by the deck manufacturer and installed by the roofing contractor prior to installation of roof insulation.

3.4 FIELD QUALITY CONTROL

- A. Steel deck is not to be used as a working platform or storage area until units are in position and permanently attached to the structure.
- B. Construction loads are not to exceed load carrying capacity of the steel deck.

3.5 INSPECTION AND REPAIR

- A. Before roof insulation placement, the deck shall be inspected for tears, dents, or other damages that will affect the structural performance of the deck.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before substantial completion.

END OF SECTION