

SECTION 05 31 00 - STEEL DECKING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. **KROGER DIRECT BUY PROGRAM:** Owner supplied/Contractor installed.
 - a. The Kroger Company will supply the steel roof deck for the project including:
 - 1) Steel roof deck complying with ASTM A 1008, Grade C, with acrylic primer for:
 - a) Main building roof
 - b. Comply with requirements in Division 00 Section "General Conditions."
2. Contractor supplied items:
 - a. Deck fasteners, including self-tapping sidelap screws necessary for a complete and structurally sound installation.
3. Contractor installed items:
 - a. Roof deck and noncomposite form deck.

1.2 SUBMITTALS

- A. The Owner will provide the following submittals for the Contractor's review. The Contractor shall review and return submittals as specified in Division 00 Section "General Conditions."
1. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.
 2. Product Data: For each type of deck, accessory, and product indicated.
 3. Research/Evaluation Reports: For steel deck.

1.3 QUALITY ASSURANCE

- 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."
- B. Provide erection of steel deck conforming to the requirements of the latest edition of the specifications of the Steel Deck Institute (SDI).

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel decking off ground and spaced by using pallets, dunnage, or other supports and spacers to prevent mud and debris accumulation on installed material and to protect steel decking and packaged materials from corrosion and deterioration.
- B. Slope stored steel decking to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 STEEL DECKING

- A. Refer to Division 01 Section "Vendor Contact List" for additional information, Drawings, and vendor provided shop drawings for sizes and locations.

2.2 ACCESSORIES

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.
- D. Flexible Closure Strips: ASTM D1056, Grade 2A1, vulcanized, closed-cell, synthetic rubber specified and premolded to the configuration required to provide tight-fitting closures at open ends and sides of steel roof decking.
 - 1. Brittleness temperature: ASTM D746, minus 40 degrees F.
 - 2. Flame Spread Rating: ASTM E84, less than 25.
 - 3. Provide an elastomeric type adhesive as recommended by the manufacturer of the flexible closure strips.
- E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 20 gage, 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- F. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

2.3 FINISHES

- A. Prime Painted: Manufacturer's standard gray baked-on lead and chromate free rust-inhibitive primer.

- B. Galvanized: ASTM 653 G60 zinc coating on exterior only where indicated.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Cleaning of Steel Decking: All installed material (especially materials used for exposed structure/ceiling as the final product) must be free of mud, dirt, oil, grease, or other debris. When possible, clean steel decking prior to or during erection.

3.2 INSTALLATION

- A. Contractor's Responsibilities for Owner Furnished Product: As specified in Division 00 Section "General Conditions."
- B. Install deck panels and accessories according to applicable specifications and commentary in ANSI/SDI RD-2010 for roof deck and ANSI/SDI C-2011 for composite floor deck, manufacturer's written instructions, requirements in this Section, and as indicated.
- C. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
- D. Lap ends of roof deck and concrete form deck 2-inch minimum.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
 - 1. Openings up to 6-inches square may be cut through metal deck without reinforcing.
 - 2. Openings between 6-inches and 18-inches shall be reinforced with 2 x 2x 1/4 steel angles puddle welded to the metal deck flutes and oriented perpendicular to the flutes.
 - 3. Steel reinforcing angle shall extend a minimum of 2 flutes each side of the opening
- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
- H. Connect metal deck to structural members, including perimeter angles as follows:
 - a. See deck schedule in structural drawings.
- I. Side-Lap and Perimeter Edge Fastening: See deck schedule in structural drawings.
- J. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches.
- K. Roof Sump Pans and Sump Plates: Install over openings provided in roof deck and fasten flanges to top of deck.

1. Install reinforcing channels or zeos in ribs to span between supports and fasten.
- L. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.
- M. Miscellaneous Roof-Deck Accessories: Install accessories according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing agency will report inspection results promptly and in writing to Contractor and Architect.
- C. Remove and replace work that does not comply with specified requirements.
- D. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.4 CLEANING, REPAIRS AND PROTECTION

- A. Clean any remaining contaminates from installed material (especially areas with exposed structure/ceiling as the final product) to satisfaction of Owner so that no mud, dirt, oil, grease, or other debris is visible from the finish floor.
- B. Touch up rusted and abraded areas with prime paint after erection. Apply same type paint as used in shop.
- C. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

END OF SECTION 05 31 00