

SECTION 05311 - STEEL FLOOR AND ROOF DECKING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Steel roof deck and accessories.
- B. Framed openings up to 18 inches (450 mm).
- C. Bearing plates and angles.

1.02 RELATED WORK

- A. Section 05120 - Structural Steel: 05210 - Steel Joists.

1.03 REFERENCES

- A. AISI - Specification for the Design of Cold-Formed Steel Structural Members.
- B. ASTM A36 - Structural Steel.
- C. ASTM A446 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot- Dip Process, Structural (Physical) Quality.
- D. ASTM A525 - Steel Sheet, Zinc-Coated, Galvanized by the Hot- Dip Process.
- E. ASTM A611 - Steel, Cold-Rolled Sheet, Carbon, Structural.
- F. AWS D1.1 - Structural Welding Code.
- G. SDI - Design Manual for Composite Decks, Form Decks, Roof Decks.

1.04 SHOP DRAWINGS

- A. Submit shop drawings under provisions of General Requirements.
- B. Indicate decking plan, deck profile dimensions, supports, projections, openings, and reinforcement, finishes, pertinent details, and accessories.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store decking on wood sleepers with slope for positive drainage.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Sheet Steel: ASTM A446, Grade B structural quality; with G60 coating; unfinished.
- B. Bearing Plates: Angles: ASTM A36 steel.
- C. Welding Materials: AWS D1.1.
- D. Cell Closures: Closed cell foam rubber, profiled to decking.
- E. Metal Closure Strips, Wet Concrete Stops, Cover Plates, and Related Accessories: 22 gage sheet steel; of required profiles and size.
- F. Primer: Red oxide type.
- G. Touch-up Primer: Red oxide.

2.02 FABRICATION

- A. Metal Decking: Minimum gage as noted on plans, sheet steel, high fluted profile to SDI 24 inch sheets; multiple span; lapped joints.
- B. Fluted Floor Decking: Minimum gage as noted on plans, sheet steel, 1-1/2 inch fluted profile; 24 inch wide sheets, multiple span, lock seam joints, to SDI.
- C. Fabricate metal decking in accordance with SDI Design Manual for Composite Decks, Form Decks, Roof Decks to accommodate maximum working stress of 20,000 psi and maximum span deflection of 1/240.
- D. Fabricate roof sump pan of 14 gage sheet steel, flat bottom, sloped sides, recessed 1-1/2 inches (38 mm) below roof deck surface, bearing flange 3 inches (75 mm) wide, watertight.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Erect metal decking in accordance with SDI Design Manual for Composite Decks, Form Decks, and Roof Decks. Provide welding in accordance with AWS D1.1.
- B. On steel support members provide 3 inch minimum bearing. Align and level on supports.
- C. Weld male/female side lap at 18 inches oc maximum.
- D. Fasten deck to steel support members at ends and intermediate supports with 3/4 inch fusing welds at 12 inches oc maximum.
- E. Reinforce deck openings from 6 to 18 inches (150 to 450 mm) in size with 2 x 2 x 1/4 inch (50 x 50 x 6 mm) steel angles. Place angles perpendicular to flutes; extend minimum two flutes each side of opening and weld to deck.
- F. Install 6 inch (150 mm) wide sheet steel cover plates where deck changes direction. Spot weld in place 12 inches oc maximum.
- G. Install sheet steel strip closures at roof edge and floor edge upturned to thickness of slab, to contain wet concrete. Provide closures of sufficient strength to remain in place without distortion.
- H. Install sheet steel closures and angle flashings to close openings between deck and walls, columns, and openings.
- I. Install foam cell closures in locations above walls and partitions.
- J. Position roof sump pans with flange bearing on top surface of deck. Weld at each deck flute.
- K. Immediately after welding deck in place, touch-up welds, burned areas, and surface coating damage with prime paint.
 - 1. Metal floor deck shall be 1-1/2 inches deep, galvanized, Composite Type, equal to United State Steel Deck 1-1/2 inch "B-Lok" or Bowman 1-1/2 inch "Vgrip".
 - 2. Metal roof deck shall be 1-1/2 inches deep, galvanized, wide rib, equal to United Steel Roof Deck "Type B" or Bowman Roof Deck "Type B".

3. Weld to supports and screw side laps, per manufacturer's recommendations and specifications.
4. Deck units shall be in lengths to span over three or more supports where possible.
5. Stone concrete topping shall have 28 day, 3000 psi. Closures shall be provided at edges, at perimeter and at openings to serve as concrete stop.
6. Conform to steel deck institute recommendations.

PROPOSED FIREHOUSE PROJECTS
TAPPAN FIRE DISTRICT
TAPPAN, NY

STEEL FLOOR AND ROOF DECKING
DIVISION 5 – METALS
SECTION 05311