

BuildingName  
The Description of the Project  
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**SPECIFICATION DIVISION 5**

NUMBER            SECTION DESCRIPTION

**DIVISION 05 METALS**

SECTION 053100 - STEEL DECKING

**END OF CONTENTS TABLE**



**DIVISION 05 METALS**  
**SECTION 053100 - STEEL DECKING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes steel deck units for roof repair.

**1.2 SUBMITTALS**

- A. Product data including manufacturer's specifications and installation instructions for each type of decking and accessories.
1. Provide test data for mechanical fasteners used in lieu of welding for fastening deck to supporting structures.
- B. Shop drawings showing layout of deck units, anchorage details, and sump pans, cut openings, special jointing, and other accessories.
- C. Submit the following to Factory Mutual for plan review at least three weeks prior to commencing installation: completed FM application, shop drawings and product data complying with the requirements listed under "Quality Assurance" article in this section. Include sufficient information on drawings to ensure compliance with FM fastening requirements for both field areas and perimeter areas.

**1.3 QUALITY ASSURANCE**

- A. Codes and Standards: Comply with provisions of the following codes and standards, except as otherwise indicated:
1. American Iron and Steel Institute (AISI), "Specification for the Design of Cold-Formed Steel Structural Members."
  2. American Welding Society (AWS), D1.3 "Structural Welding Code - Sheet Steel."
  3. Steel Deck Institute (SDI), "Design Manual for Composite Decks, Form Decks and Roof Decks."
- B. Qualification of Field Welding: Use qualified welding processes and welding operators in accordance with "Welder Qualification" procedures of AWS.
- C. Underwriters' Label: Provide metal floor deck units listed in Underwriters' Laboratories "Fire Resistance Directory", with each deck unit bearing the UL label and marking for specific system detailed.
- D. FM Listing: Provide steel roof deck units that have been evaluated by Factory Mutual System and are listed in "Factory Mutual Approval Guide" for "Class 1" fire-rated construction.

**SELECT THE APPROPRIATE FM CLASS FOR ROOF CONSTRUCTION IN THE FOLLOWING PARAGRAPH**

- E. FM Standards: Comply with FM Global Standards, the FM Research Approval Guide and all applicable FM data sheets, including but not limited to, Property Loss Prevention Data Sheets 1-28, 1-29, 1-49, and 1-54. Roof assembly shall meet the requirements of FM Class 1-60 1-90 1-120.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

Bowman Metal Deck Div., Cyclops Corp.  
Consolidated Systems, Inc.  
Roll Form Products, Inc.  
Roof Deck, Inc.  
United Steel Deck, Inc.  
Vulcraft Div., Nucor Corp.  
Wheeling Corrugating Co.

**2.2 MATERIALS**

- A. Steel for Galvanized Metal Deck Units: ASTM A 446, grade as required to comply with SDI specifications.
- B. Sheet Metal Accessories: ASTM A 526, commercial quality, galvanized.

*REVISE BELOW IF HEAVIER GALVANIZING (G90) REQUIRED.*

- C. Galvanizing: ASTM A 525, G60.
- D. Galvanizing Repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A 780.

**2.3 FABRICATION**

- A. General: Form deck units in lengths to span three or more supports, with flush, telescoped, or nested 2-inch laps at ends and interlocking or nested side laps, of metal thickness, depth, and width as indicated.
- B. Roof Deck Units: Provide deck configurations that comply with SDI "Specifications and Commentary for Steel Roof Deck."
- C. Roof Sump Pans: Fabricate from single piece of 0.071-inch min. (14 gage) galvanized sheet steel with level bottoms and sloping sides to direct water flow to drain. Provide sump pans of adequate size to receive roof drains and with bearing flanges not less than 3 inches wide. Recess pans not less than 1-1/2 inches below roof deck surface unless otherwise shown or required by deck configuration. Holes for drains will be cut in the field by others.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. General: Install deck units and accessories in strict accordance with manufacturer's recommendations, shop drawings, Factory Mutual standards and as specified herein.
- B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or compress side lap interlocks.
- C. Place deck units flat and square, secured to adjacent framing without warp or deflection.
- D. Coordinate and cooperate with structural steel erector in locating decking bundles to prevent overloading of structural members.
- E. Fastening Deck Units:
  - 1. Fasten roof deck units to steel supporting members by not less than 1/2-inch-diameter puddle welds or elongated welds of equal strength, spaced not more than 12 inches at every support, and at closer spacing where indicated. In addition, secure deck to each supporting member in ribs where side laps occur.
  - 2. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.
    - a. Use welding washers where recommended by deck manufacturer.
  - 3. Mechanical fasteners, either powder-actuated or pneumatically driven, may be used in lieu of welding. Locate mechanical fasteners and install in accordance with deck manufacturer's instructions.
  - 4. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36 inches o.c., using self-tapping No. 8 or larger machine screws.
  - 5. Uplift Loading: Install and anchor roof deck units to resist gross uplift loading of 45 lbs. psf at eave overhang and 30 lbs. psf for other roof areas.
- F. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.
- G. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking, and support of other work shown.
- H. Roof Sump Pans: Place over openings provided in roof decking and weld to top decking surface. Space welds not more than 12 inches o.c. with at least one weld at each corner.
- I. Touch-Up Painting: After decking installation, wire brush, clean, and paint scarred areas, welds, and rust spots on top and bottom surfaces of decking units and supporting steel members.
  - 1. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

END OF SECTION 053100