

# Steel Floor Deck Guide Specifications

MANUFACTURER • ASC Steel Deck

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This Guide Specification is used to develop an office master specification or specifications for a project. In either case, this Guide Specification must be edited to fit the conditions of use. Particular attention should be given to the deletion of inapplicable provisions. Include necessary items related to a particular project. Include appropriate requirements where blank spaces have been provided.

## SECTION 05 31 13 - STEEL FLOOR DECKING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Furnish all materials and labor necessary to complete metal decking installation per the Contract Documents.

Edit list of related sections for project requirements. Section numbers and titles are those recommended in CSI MasterFormat; revise numbers and titles to reflect actual sections in Project Manual.

B. Related Requirements:

1. Section 03 30 00: Cast-In-Place Concrete
2. Section 03 52 16: Lightweight Insulating Concrete.
3. Section 05 10 00: Structural Metal Framing.
4. Section 05 20 00: Steel Joist.
5. Section 07 60 00: Flashing and Sheet Metal.
6. Section 09 91 00: Painting.

#### 1.2 REFERENCE STANDARD FOR QUALITY ASSURANCE

- A. Codes/Standards- The work and materials of this section shall comply with:
1. ASCE 7: Minimum Design Loads for Building and Other Structures.
  2. Section properties shall be derived in accordance with AISI "North American Specification for the Design of Cold-Formed Steel Structural Members," latest edition.
  3. Metal Decking is to be attached to the structural frame in conformance with AWS D1.1 "Structural Welding Code – Steel" and D1.3 "Structural Welding Code – Sheet Steel."
  4. ICC Research Report No. ESR-2408.

Insert the appropriate L.A. City Research Report No. when applicable, 23783, 23784, 23803.

5. ASTM A653, "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process."
6. Steel Deck Institute (SDI)-Metal floor deck profiles shall be in conformance with ANSI/SDI standard C1.0 "Standard for Composite Steel Floor Deck."

### 1.3 SUBMITTALS

- A. Product Data for each type of decking specified, including dimensions of individual components, profiles, and finishes.
- B. Shop Drawings
  1. Prior to fabrication; prepare shop drawings for work under this section and submit to Architect. Shop drawings are to include deck layout, framing and support of openings, layout and quality of studs on beams, dimensions and sections, details of accessories and type and location of welds.
  2. Manufacturer's product literature and relevant approvals are to be submitted with the shop where metal decking is part of a fire rated assembly, the metal deck manufacturer shall provide all data to insure compliance with the UL design number and with ICC.

### 1.4 PRODUCT HANDLING

- A. Metal deck
  1. Transport, store, and erect metal deck and its accessories in a manner that will prevent corrosion, deformation, or other damage. Store deck clear of the ground with one end elevated to promote drainage; protect metal deck from water and the elements with a water resistant material. Do not use as a storage platform.

## PART 2 - PRODUCTS

### 2.1 MATERIALS AND FINISHES

- A. Metal floor deck to be ASC Steel Deck [select appropriate profile(s) and gauge(s)].
  1. B-36 [22], [20], [18], [16] gauge, 1 1/2 inches deep by 36 inches wide.
  2. N-24 [22], [20], [18], [16] gauge, 3 inches deep by 24 inches wide.
  3. 2W-36 [22], [21], [20], [19], [18], [16] gauge, 2 inches deep by 36 inches wide.
  4. 3W-36 [22], [21], [20], [19], [18], [16] gauge, 3 inches deep by 36 inches wide.
  5. ASC2 or ASC3 [20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16] gauge, 3 inches deep by 24 inches wide.
  6. BF-36 [20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16] gauge; 1 1/2 inches deep by 36 inches wide.
  7. NF-24 [20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16] gauge; 3 inches deep by 24 inches wide.
  8. 2WF-36 [20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16] gauge; 2 inches deep by 36 inches wide.
  9. 3WF-36 [20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16] gauge; 3 inches deep by 36 inches wide.
  10. Deck units are to be fabricated from sheet steel conforming to ASTM A653, Fy = 40 KSI with a galvanized coating, (select appropriate coating) G60, G90.

2W-36, 3W-36, 2WF-36 and 3WF-36 are available in 24" wide panels; when specified, the designations are 2W-24, 3W-24, 2WF-24 and 3WF-24.

When specifying CF-7/8 or CF-1 3/8, use the following:

1. CF-7/8 [26], [24], [22], [20] gauge, 7/8 inches deep.
2. CF-1 3/8 [26], [24], [22], [20], [18] gauge, 1 3/8 inches deep.

Deck units are to be fabricated from sheet steel conforming to ASTM A653, Structural Grade E [26], [24], [22], [20] gauge with a galvanized coating, G-90. CF 1 3/8 inches [18] gauge is to be fabricated from sheet steel conforming to ASTM A653,  $F_y = 38$  KSI with a galvanized coating, G-90.

When specifying Deep Deck, use the following:

1. Deep Deck [20], [18], [16], [14] gauge; 4 1/2 inches, 6 inches or 7 1/2 inches deep by 12 inches wide.
2. Deck units are to be fabricated from sheet steel conforming to ASTM A653,  $F_y = 33$  KSI with a galvanized coating.

ASC Steel Deck panels, in their standard sheet steel, contain approximately 24.3 percent post-consumer recycled content and 9.4 percent pre-consumer recycled content, for a total 29 percent recycled content as calculated for this LEED credit. Higher percentages are available if specified.

B. Sustainability Characteristics:

1. Recycled Content: [29], [50], [75] percent post-consumer recycled content, **[calculated according to LEED credit MR4]**.
2. Shipping Distance: Provide panels manufactured at the following factory:

If locally manufactured materials are a project requirement, select factory closer to Project site.

- a. Fontana, California 92335
- b. West Sacramento, California 95691

If project is subject to Federal Buy American provisions, which requires that panels be manufactured in the USA and that 50 percent of the cost of the panel be of U.S.A. origin, use the following:

C. Manufacturing Characteristics: Provide panels complying with provisions of Buy American Act 41 U.S. C 10a – 10d.

If the project is subject to Buy America Act (STAA) or American Recovery & Reinvestment Act (ARRA) 2009 (which requires that steel used in the manufacturing process be poured and melted in the USA, use the following:

C. Manufacturing Characteristics: Provide panels complying with provisions of the Buy America Act (STAA) or the American Recovery & Reinvestment Act (ARRA) 2009.

## **2.2 FABRICATION**

### **A. Metal Deck**

Manufacture deck units to lengths as indicated on shop drawings. Panel end conditions are to be butted. Sidelaps are to be male/female interlocking type, suitable for button punching.

When specifying CF-7/8 or CF-1 3/8 delete the last sentence and insert: Sidelaps are to be overlapping type.

### **B. Accessories**

Fabricate steel deck accessories from the same gauge and material as adjacent steel deck.

## **PART 3 - EXECUTION**

### **3.1 INSPECTION**

A. Examine the areas and conditions under which the work of this Section is to be performed. Correct any conditions which are detrimental to the timely and proper completion of the work of this Section. Do not proceed with work until unsatisfactory conditions are corrected. The General Contractor shall be responsible for obtaining coupons, randomly selected from the steel deck delivered to the job site. These coupons shall be tested by an independent lab to verify that the base metal thickness is within 95% of the deck manufacturer's published design "t."

### **3.02 INSTALLATION**

#### **A. General**

Install the metal deck and accessories in compliance with the manufacturer's written recommendations and approved shop drawings.

#### **B. Placing Metal Deck Units**

Place metal deck units on supporting members and adjust to proper position. Ensure proper bearing on supporting members and accurate alignment of endlaps and sidelaps prior to permanently attaching units.

#### **C. Attachment of Metal Deck Units to Supports**

1. Welded attachment of metal deck units to the supporting members shall conform to AWS D1.1 and D1.3. Welders shall be certified prior to commencing work. Attach metal deck units to supporting members with 1/2" effective diameter puddle welds.

#### **D. Connecting Sidelaps:**

1. Use ASC Steel Deck DeltaGrip® tool to create interlocking connection at spacing designated on the shop/erection drawings.

\*\* OR \*\*

2. Connect sidelap as shown on approved shop/erection drawings.

When specifying CF-7/8 or CF-1 3/8 (24 and 26 gauges only) delete the second paragraph and insert:

Attach metal deck units to supporting members with plug welds using a 14-gauge weld washer having a 3/8" diameter hole and (when attachment method requires) a 16-gauge anchor washer having a 7/16" diameter hole.

Welds to supporting members and the method of sidelap attachment are to be as per the structural drawings.

### **3.03 Repairs**

- A. Before concrete placement, inspect deck for tears, dents, or other damages that may prevent the deck from acting as a tight and substantial form. The need for repair of the damaged deck shall be determined by the Architect or Engineer of Record.