

Steel Roof 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 23 - STEEL ROOF 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 52 16: Lightweight Insulating Concrete.
 2. Section 05 10 00: Structural Metal Framing.
 3. Section 05 20 00: Metal Joist.
 4. Section 07 22 16: Roof Board Insulation.
 5. Section 07 60 00: Flashing and Sheet Metal.
 6. Section 09 91 00: Painting

1.2 REFERENCE STANDARDS 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-1414.
 5. IAPMO Research Report No. IAPMO ES-0161

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

6. ASTM A653, "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process".
7. Steel Deck Institute (SDI) – Metal roof deck profiles shall be in conformance with ANSI/SDI standard RD1.0 "Standard for Steel Roof Deck".
8. Factory Mutual (FM) – Metal roof deck profiles shall be in conformance with FM where applicable.

1.3 SUBMITTALS

- A. Product Data for each type of decking specified, including dimensions of individual components, profiles, and finishes.
- B. Shop drawings:
Prior to fabrication, prepare shop drawings for work under this section and submit to Architect. Shop drawings are to include deck layout, deck type and gauge, framing and support of openings, dimensions and sections, details of accessories and type and location of welds. Manufacturer's product literature and relevant approvals are to be submitted with the shop drawings.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Metal Deck:
Transport, store and erect metal deck and 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.

Include the following when Acustadek® is specified:

- B. Acustadek Sound Absorption Batts:
Store batts in an enclosed area, protected from the elements.

PART 2 - PRODUCTS

2.1 MATERIAL AND FINISHES

- A. Metal roof 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-32® **[22], [20], [18], [16]** gauge; 3 inches deep by 32 inches wide.
 3. N-24 **[22], [20], [18], [16]** gauge; 3 inches deep by 24 inches wide.
 4. 2W-36 **[22], [20], [18], [16]** gauge; 2 inches deep x 36 inches wide.
 5. 3W-36 **[22], [20], [18], [16]** gauge; 3 inches deep by 36 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.

Deck units are to be fabricated from sheet steel conforming to ASTM A653 SS Grade 40 with a galvanized coating.

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

When specifying CP-32, use the following, for CP-32 18 gauge; replace ASTM A653 SS Grade 80 with ASTM A653 Grade 33.

- 7. CP-32 **[26], [24], [22], [20], [18]** gauge; 1 3/8 inches deep by 32 inches wide.

Deck units are to be fabricated from sheet steel conforming to ASTM A653 SS Grade 80, with a G-40 galvanized coating.

When specifying Deep Deck and Deep Cellular, using the following:

1. Deep Deck **[20], [18], [16], [14]** gauge; 4 1/2, 6, or 7 1/2 inches deep by 12 inches wide.
2. Deep Deck Cellular **[20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16]** gauge; 4 1/2, 6, or 7 1/2 inches deep by 24 inches wide.

Deck units are to be fabricated from sheet steel confirming to ASTM A653, Fy = 33ksi with a galvanized coating.

When specifying acoustical deck use the following:

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Guide Specification

STEEL ROOF DECK PANELS
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- A. Metal roof deck to be ASC Steel Deck **[select appropriate profile(s) and gauge(s).]**
1. B-36 Acustadek **[22], [20], [18], [16]** gauge, 1 1/2 inches deep by 36 inches wide.
 2. N-32 Acustadek **[22], [20], [18], [16]** gauge, 3 inches deep by 32 inches wide.
 3. N-24 Acustadek **[22], [20], [18], [16]** gauge, 3 inches deep by 24 inches wide.
 4. BF-36 Acustadek **[20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16]** gauge; 1 1/2 inches deep by 36 inches wide.
 5. NF-24 Acustadek **[20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16]** gauge; 3 inches deep by 24 inches wide.
 6. Deep Deck Acustadek **[20], [18], [16], [14]** gauge; 4 1/2, 6, or 7 1/2 inches deep by 12 inches wide.
 7. Deep Deck Cellular Acustadek **[20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16]** gauge; 4 1/2, 6, or 7 1/2 inches deep by 24 inches wide.
 8. 2WF-36 Acustadek **[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 Acustadek **[20/20], [20/18], [20/16], [18/20], [18/18], [18/16], [16/16]** gauge; 3 inches deep by 36 inches wide.
- B. Acustadek perforations are 1/8" or 5/32" diameter holes on staggered centers. The noise reduction Coefficient is to be **[select from chart on pages 23 and 24]**. The NRC values were developed in accordance with ANSI C423, as performed by Riverbank Laboratory.

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. **[Or C. for acoustical deck]** 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 the 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 panels be of U.S.A. origin, use the following:

C. **[Or D. for acoustical deck]** 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. **[Or D. for acoustical deck]** 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 or end-lapped, 2" minimum. Sidelaps are to be male/female interlocking type allowing connection with DeltaGrip® tool. Sidelaps are to be nestable or interlocking when using screw-type fasteners.

When specifying CP-32 delete the last two sentences and insert: Sidelaps are to be overlapping type.

B. Accessories

Fabricate steel deck accessories (not including cell closures) from the same gauge and materials as adjacent steel deck.

PART 3 – EXECUTION

3.1 INSPECTION

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'.

3.2 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.
**** OR ****
 2. Secure with Pneutek fasteners.
**** OR ****
 3. Secure with Hilti fasteners.
- 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 CP-32 delete the second paragraph and insert:

Attach metal deck units to supporting member 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, as required for diaphragm shear capacity. Welds to supporting members and the method of sidelap attachment are to be as per the structural drawing.

3.3 PROTECTION

- A. Do not use deck units for storage or working platforms until permanently secured in position.
- B. Construction loads must not exceed carrying capacity of deck.

END OF SECTION

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