

SECTION 05 36 00
COMPOSITE METAL FLOOR DECK

PART 1 - GENERAL

1.1 SCOPE

- A. Perform all work required to complete the composite metal deck work indicated by the Contract Documents and furnish all supplementary items necessary for its proper installation.
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- C. Alternate Bids: Refer to other Sections for description.

1.2 CODES AND STANDARDS

- A. The work described in this Section, unless otherwise noted on the Drawings, or herein specified, shall be governed by the latest editions of the following codes or specifications.
 - 1. "Specifications for the Design of Cold-Formed Steel Structural Members" - AISI.
 - 2. "Structural Welding Code - Sheet Steel" - AWS D1.3.
 - 3. "Specifications and Commentary for Composite Steel Floor Deck". Steel Deck Institute, Publication No. 29.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Qualifications of welders and welding operators, filler metal, welding techniques and procedures shall be in accordance with AISC Specification for the Design, Fabrications, and Erection of Structural Steel for Buildings, and the AWS Structural Welding Code.
- C. Certifications shall be no more than six (6) months old during the time of welding in the erection period.

1.4 DESIGN

- A. Composite metal deck is designed for unshored construction, unless noted otherwise on the Drawings.

1.5 SUBMITTALS

- A. Shop Drawings:
 - 1. Submit shop drawings in accordance with Specifications.
 - 2. Shop drawings shall indicate decking plan, deck profile dimensions, anchorage requirements, projections, openings and reinforcement, finishes, applicable details and accessories. Any fabrication of material before review of shop drawings will be at the risk of the Contractor.
- B. Manufacturer's Data: Submit two copies of manufacturer's specifications and installation instructions for Metal Composite Deck. Include manufacturer's certification as may be required to show compliance with these specifications.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.
- C. Architect may reject any material that has become damaged because of improper storage.

1.7 SEQUENCING/SCHEDULING

- A. Coordinate Work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Floor Deck:
 - a. Nucor Corp.: Vulcraft Div. or equal.

2.2 MATERIALS

- A. Composite Metal Deck: Deck type and gauge shall be as shown on the Drawings and shall conform to the requirements adopted by the Steel Deck Institute.
- B. Galvanized Steel Sheet: ASTM A 653/A653M, Structural Steel, Grade 33, G60 (Z180) zinc coating.
- C. Welding electrodes shall conform to AWS A5.1 and AWS A5.5.
- D. Accessories: Provide all accessories necessary to complete the entire installation, including cover plates required to cover all gaps where deck units abut or change direction, around columns, to cover access holes used for welding, and closures where required to prevent seepage of concrete.
- E. Concrete Admixtures: Concrete admixtures containing chloride or chloride salts shall not be used in concrete placed on metal deck. Use of calcium chloride is specifically prohibited.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Surfaces of structural steel members which are to receive shear connectors, and steel deck support surfaces which are to receive welding or shear connectors, shall be free of paint, ice, water, oil, dirt, rust or any other material detrimental to welding.
- B. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 29, manufacturer's written instructions, and requirements in this Section.
- C. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
- D. Locate decking bundles to prevent overloading of supporting members.
- E. 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. Each unit shall have a minimum of two inches of bearing on supporting beams.
 - 1. Align cellular deck panels for entire length of cell runs and align cells at ends of abutting panels.
- F. Place deck panels flat and square and fasten to supporting frame without warp or

deflection.

- G. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to decking.
- H. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.
- I. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.
- J. Composite Metal Deck Units shall be fastened to the steel framework at ends and at intermediate supports by puddle welds not less than 3/4" diameter, spaced not more than 12" apart. Where deck sections abut, a line of welds shall be made in each section. Where deck runs parallel to a beam without shear connectors, the deck shall be fastened to the beam by welds not less than 3/4" diameter and not less than 36" apart. Weld washers, type W2, 14 gage shall be used in connecting all steel material less than 22 gage in thickness.
- K. End closures of the deck units shall be fastened by tack welding or sheet metal screws not more than 48" apart.
- L. Side laps and closures of the deck unit shall be fastened by tack welding not more than 36" apart.
- M. Tack weld or sheet metal screw all accessory cover plates adequately into place.
- N. Weld metal shall penetrate all layers of deck material and shall have good fusion to the supporting members.

3.2 OPENINGS

- A. Openings: Shall be provided where shown on the Drawings, along with any reinforcing required to strengthen the metal deck.
- B. Other openings and reinforcing not shown on Drawings will be made and reinforced by other trades and are subject to Architect's review.
- C. The Architect shall be immediately notified of any openings where supplemental framing is required but is not provided.

3.3 REPAIRS AND TOUCH-UP PAINTING

- A. Galvanizing Repairs: Prepare and repair damage galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and

manufacturer's written instructions.

- B. 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 and ASTM A 780.

3.4 FIELD QUALITY CONTROL

- A. Testing Laboratory services shall be in accordance with Section 01 43 26. Provide all inspections and testing as required by the 2006 International Building Code.
- B. Testing Laboratory shall perform field inspection of metal deck for proper type, gage, finish, installation and attachment. Testing Laboratory shall provide a written report of their findings.
- C. Remove and replace work that does not comply with specified requirements.
- D. Additional testing and inspection, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

END OF SECTION

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