

**05 00 00. METALS****05 10 00. STRUCTURAL METAL FRAMING**

- .1 GENERAL PROVISIONS: Use of ink marking pens on surfaces of any kind of materials is prohibited. Experience has shown that such marks bleed through paint and other finishes. Also prohibited are any marking devices that would leave residual material on metal surfaces, such as ink, wax-based or felt markers.
- .2 POWER OR POWDER DRIVEN ANCHORS: Refer to Appendix V Section 01 35 23 Safety Health & Environment 1.6 USE OF POWER ACTUATED FASTENER TOOLS.

05 12 00. STRUCTURAL STEEL

- .1 Include a complete section in the specifications for this part of the work, in addition to the Structural Consultant notes on the drawings. The Architect/Engineer is responsible for complete coordination of statements in the specifications and the notes on drawings.
- .2 PROVISIONS FOR VERTICAL EXPANSION: In buildings designed for future vertical expansion, structural steel shall be erected within tolerances stipulated in the AISC Code of Standard practice.
- .3 AFFIDAVIT FROM ERECTOR: The General Contractor shall be required to provide an affidavit, at the completion of the job, to the effect that the structural steel frame is plumb and level within the normal tolerances specified in the applicable code.
- .4 RECORD OF ERECTION: The General Contractor shall provide a certified survey by a registered Civil Engineer showing the exact location of the centers and elevations of the columns at their topmost level, exactly as installed. This information shall be incorporated into the "record" drawings.
- .5 HANGER RODS: Support shall have a minimum of double nuts and with burr threads.
- .6 VIBRATION: Floor design shall include consideration of the relative perceptibility of floor vibrations based on the use of the space.
- .7 CAMBER: Verify that the design camber is accurate for the anticipated dead load deflection and that any residual camber does not significantly affect serviceability.
- .8 All steel members exposed to weather shall be hot-dipped galvanized.
- .9 Obtain written approval from structural engineer of record for any beam web penetrations that are not shown on the construction documents. All web penetrations shall be recorded in the record documents and as built.
- .10 Design in accordance with Applicable edition of the AISC Manual of Steel Construction

**05 20 00. METAL JOISTS**

- .1 MANUFACTURER'S CERTIFICATE of compliance with Steel Joist Institute (SJI) Specifications is required.
- .2 PRIME COAT AND TOUCH-UP PAINTING will be considered adequate for joists, except where subjected to moisture or where exposed to view. Asphalt coatings are not permitted on metal joists that are to remain exposed and receive painted finish.
- .3 Design in accordance with the SJI Standard Specification and Load Tables

05 30 00. METAL DECKING

- .1 MANUFACTURER'S CERTIFICATE of compliance with Steel Deck Institute Specifications is required as a submittal to the A/E for review and approval during the construction of the project.
- .2 PRIME COAT AND TOUCH-UP PAINTING will be considered adequate for metal deck, except where subjected to moisture or where exposed to view.
- .3 Design in accordance with the latest edition of the SDI Design Manual.
- .4 Design deck as diaphragm in accordance with the latest SDI Diaphragm Design Manual.

05 40 00. COLD-FORMED METAL FRAMING

- .1 A manufacturer's certificate of compliance with American Iron & Steel (AISI) specification SG02-1 North American Specification for the Design of Cold-Formed Steel Structural/Members and SG-973 Cold-Formed Steel Design Manual is required as a submittal to the A/E for review and approval during the construction of the project.
- .2 COLD-FORMED METAL STUD SYSTEM: Studs and furring strips shall be spaced 16 inches on center, maximum.
- .3 For projects over \$200,000 Engineering Responsibility: Prepare shop drawings, design calculations and data by a qualified professional engineer. A professional engineer who is registered in the state of Ohio.
- .4 Deflection Criteria: L/600 for exterior brick veneer, maximum 3/8 inch over full live and dead loads.
- .5 Interior loads: minimum 40 pounds per square foot on all horizontal surfaces.
- .6 CONNECTIONS: Welding is prohibited
- .7 BRIDGING: If only one face of the wall is sheathed then provide bridging at 48 inches on center, minimum.

**05 50 00. METAL FABRICATION**

- .1 GALVANIZING REQUIREMENTS: All ferrous metals in exterior assemblies or exterior walls to be hot dipped galvanized after fabrication.
- .2 MISCELLANEOUS METAL FRAMING FOR ELECTRICAL SUPPORT SYSTEMS: If electrical equipment is attached to support framing, the Electric Contractor shall provide in their bid the work associated with coordinating and installing adequate framing for all electrical equipment that is attached to and supported by the metal framing. _
- .3 LINTELS FOR PLUMBING, HVAC, AND ELECTRICAL INSTALLATIONS: Specify that the General Contractor furnish lintels for all openings through walls when openings are shown on the architectural or structural (General Contract) drawings. Note all such lintels and openings to require coordination of work and exact locations, by affected contractors. All such plumbing, HVAC, electrical, and sprinkler openings must be coordinated and shown on the Architectural and/or Structural Drawings.
- .4 FASTENERS: All fasteners in exterior assemblies or exterior walls to be stainless steel

05 51 00. METAL STAIRS

- .1 STAIR TREADS FOR PUBLIC-ACCESS STAIRWAYS shall be concrete with cast metal nosings. Nosings shall be shaped to a radius; square nosings are prohibited.
- .2 STAIR TREADS FOR ROOF ACCESS, EQUIPMENT ROOM ACCESS, AND LADDERS shall be metal with each tread to be the full width of the stair or ladder. Alternating treads are prohibited.
- .3 A MANUFACTURER'S CERTIFICATE of compliance with the Architectural Products Division of the National Association of Architectural Metal Manufacturer's AMP 510 Metal Stairs Manual materials, construction and installation specification is required as a submittal to the A/E for review and approval during the construction of the project
- .4 Metal pan stair treads and landings filled with concrete, terrazzo, etc. shall be prohibited for exterior stairs. Special permission from the University Engineer is required for use of metal pan stair treads and landings for interior main entry stairs.

05 52 00 METAL RAILINGS (PIPE AND TUBE)

- .1 Face mount handrails along ramps and elevated walking surface instead of core drilling mounts to prevent concrete blowouts of edge drilling mounts.



05 53 00. GRATINGS

- .1 Ferrous gratings shall be hot-dip galvanized and designed to support a minimum live load of 100 pounds per square foot. Galvanized hardware cloth shall be installed under all areaway gratings.
- .2 A MANUFACTURER'S CERTIFICATE of compliance with ANSI/NAAMM National Association of Architectural Metal Manufacturer's MGB531 Metal Bar Grating Manual materials, construction and installation specification is required.

END OF DIVISION 05 – METALS