

PART III – CSU FACILITIES PLANNING, DESIGN AND CONSTRUCTION STANDARDS

DIVISION 05 – METALS

Housing and Dining Facilities (HDS) has adopted amendments for all HDS facilities. Confirm applicable standards with Project Representative on a per Project basis. Refer to HDS amendments here – <https://housing.colostate.edu/about/construction/>.

DIVISION 05 – METALS

05 00 00 – GENERAL INFORMATION

A. Architectural Metals:

1. Architectural metals including, but not limited to handrails and fascia shall be prefinished with coatings that do not require maintenance painting.
 - a. Includes interior and exterior architectural metals.
2. Exterior steel and iron architectural elements such as stairs, handrails, railings, gates, etc. shall be hot-dip galvanized whether or not a painted surface is the final finish.

B. Welding:

1. Contractor shall ensure that all welders are currently certified by the American Welding Society (AWS) for type and position of welds.
2. All structural field welds shall be inspected per applicable adopted codes and AWS Standards prior to covering or painting.
3. All shop welds shall be inspected per applicable adopted codes and AWS Standards prior to delivery to the job site.

05 10 00 – STRUCTURAL METAL FRAMING

A. Comply with these standards unless more stringent requirements are required by the Project and Construction Documents:

1. American Institute of Steel Construction (AISC) "Code of Standard Practice for Steel Buildings and Bridges"
2. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings" including "commentary"
3. AWS "Structural Welding Code – Steel"
4. American Society for Testing and Materials (ASTM) Standards:
 - a. Steel Plates, Shapes and Bars – ASTM A 36
 - b. Cold Formed Steel Tubing – ASTM A 500, Grade B
 - c. Fasteners – ASTM A 325 or A 490
 - d. Steel Pipe – ASTM A53, Grade B

05 20 00 – METAL JOISTS

A. Comply with these standards unless more stringent requirements are required by the Project and Construction Documents:

1. Steel Joist Institute (SJI), "Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders" for types of joists indicate

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2. ASTM Standards:
 - a. Steel – ASTM A 36
 - b. Fasteners – ASTM A 325 or A 490

05 30 00 – METAL DECKING

- A. Comply with these standards unless more stringent requirements are required by the Project and Construction Documents:
 1. AISI "North American Specification for the Design of Cold-Formed Steel Structural Members"
 2. AWS "Structural Welding Code"
 3. Steel Door Institute (SDI) "Design Manual for Floor Decks and Roof Decks"
 4. ASTM Standards:
 - a. Steel for Painted Units – ASTM A1008
 - b. Galvanized Units – ASTM A653
 - c. Steel Shapes – ASTM A 36
 - d. Steel Metal Accessories – ASTM A653, galvanized

05 41 00 – STRUCTURAL METAL STUD FRAMING

- A. Metal Studs – Structural:
 1. 16 gauge and heavier units shall be fabricated of structural quality sheet steel with a minimum yield point of 50,000 psi.
 - a. ASTM A653, A1003 and C955
 2. 18 gauge and lighter units shall be fabricated of structural quality sheet steel with a minimum yield point of 33,000 psi.
 - a. ASTM A653, A1003 and C955

05 51 33 – METAL LADDERS

- A. Ladders:
 1. Fixed roof access ladders shall be provided for all buildings unless otherwise approved by the Project Representative.
 2. A cage or well is required around all ladders over 20'-0" high not having other ladder safety devices such as lifebelts, friction brakes, sliding attachments.
 - a. Refer to OSHA Standard 1910.27(d)(5) for additional safety device exemptions.
 3. The maximum length for unprotected straight ladders is 20'-0".
 - a. Caged ladders shall run in 30'-0" sections.
 - b. Offset ladder sections and landings are required for total lengths greater than the maximum allowed.
 4. Ladders or steps are required on roofs with an 18" or higher elevation change.
 5. Provide safety strip or paint with abrasive grits for roughened surface on ladder rungs to prevent slipping.

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6. For special applications, refer to OSHA Standards 1910.27(c)(7) for hatch covers and 1910.27(d)(5) for chimney ladders.
7. Top ladder rung shall be 1'-0" below the top of the roof deck or parapet.

END OF DIVISION