

DIVISION 5 - METALS

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05 40 00 COLD-FORMED METAL FRAMING

05 41 00 Structural Metal Stud Framing

Part 1 - General

Owner requires all new construction to follow the requirements of the 2009 ICC International Building Code, Chapter 22, STEEL.

In addition, all wall framing to follow the following:

Walls up to 10' cold rolled studs to be 25 gauge.

Walls over 10' to 14' cold rolled studs to be 20 gauge.

Walls over 14' cold rolled studs to be 16 gauge.

All wall studs to be minimum 16" on center.

Additional standards for cold formed stud walls as cited in the IBC are: AISI S211 or AISI S100.

Part 2 – Products

N/A

Part 3 – Execution

N/A

05 50 00 METAL FABRICATIONS

Part 1 - General

This section applies to all metal fabrications that have a visual aesthetic impact both interior and exterior.

Part 2 – Products

Metal used for interior railings should be tube stock, not solid stock, and conform to ASTM A 500.

Part 3 – Execution

Welds should be smoothly ground to match surface texture of parent metal. All gaps, holes and gouges should be filled with a permanent material (solder or brazing). Design limitations of grinders, files etc., dictate that adjoining metal tubing pieces at angles less than 125° generally need a minimum of 1/4" radius butt weld in order to grind smooth.

Fully conceal adjoining railing splices in runs that appear constant. At elbow bends, utilize mitered joints.

Limiting unsupported length should not exceed 6' for diameters 2" or less. Cable used as railing intermediates is not allowable.

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The use of expansion bolts to secure railing assemblies to vertical or horizontal surfaces is not allowable. Anchorage systems should consist of direct imbeds (sleeved or plates) and/or welding.

Exterior exposed metal fabrications shall have a spray applied epoxy-polyimide type primer paint and spray applied finish paint-epoxy based and/or electrostatically applied. A color should be chosen that does not easily fade when exposed to sunlight and hides hand prints. Ladders shall be a minimum width of 18", 3/4" diameter rungs spaced 12" o.c., braced a minimum of 5' o.c. Rungs should have a non-slip type finish.

All stair nosings shall have a permanently applied non-slip surface, either integral or imbedded, 2" wide minimum the width of the tread.

Where metal stair risers are exposed (not covered), they shall have spray applied epoxy-polyimide type primer paint and spray applied finish paint-epoxy based and/or electrostatically applied. A color should be chosen that does not easily fade when exposed to sunlight and hides the shoe-scuff marks.

At the top and bottom of stair landings, a contrasting color and texture to the normal stair treads shall be used to facilitate the blind and visually impaired.

Expansion joints should be provided in continuous runs at a minimum interval of 40 feet.

All exposed to public fabrications with right angles corners shall be radiused a minimum of 1/8".

Metal trim in continuous runs shall have concealed splices and be of sufficient gauge that natural distortions are not visually apparent. All exposed edges to the public shall be radiused or sharp edges eased.

Shop Drawings:

1. Submit shop drawings for custom fabricated items, including:
 - a. Profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories.
 - b. Erection drawings, elevations and details.
 - c. Welded connections using standard AWS welding symbols.

Product Data:

Submit product data for manufacturer's stock items.

Certifications:

1. Submit current welder's certification qualified in accordance
2. Submit certification by fabricators that handrails and stairs have been designed by a

NORTHERN ARIZONA UNIVERSITY – Technical Standards

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structural engineer licensed in the State of Arizona.

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Metal Stairs

Metal Pan Stairs

Part 1 - General

Metal pan stairways are the preferred product for interior locations. Alternatives require prior approval by Owner. Open risers are not permitted. Provide colored safety edge at the top and bottom steps, color as selected by the Owner. All stair nosings shall have a permanently applied non-slip surface, either integral or imbedded, 2" wide minimum the width of the tread.

Metal pan stairways shall not be specified for unprotected exterior locations.

Part 2 – Products

N/A

Part 3 – Execution

N/A

05 52 00
05 52 13

Metal Railings

Pipe and Tube Railings

Part 1 - General

In general, handrails are required for both sides of all stairs, ramps, etc.

Exterior handrails must conform to the Landscape Master Plan.

Part 2 – Products

N/A

Part 3 – Execution

N/A

05 58 00

Formed Metal Fabrications

Part 1 – General

N/A

Part 2 – Materials

Metal bollards for protection (i.e. fire hydrants, generators, transformers, trash enclosures, etc.) shall be a minimum of 6" diameter round, schedule 40 steel, filled with 4,000 PSI concrete.

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Traffic control bollards see Division 32.

Part 3 - Execution

Exterior metal bollards for protection shall be directly set in concrete slab and shall be a minimum of 1/3 the exposed height below the finished adjacent surface.

Interior metal bollards may be directly set or surface bolted to an embedded plate.

*** * * END OF SECTION * * ***