

SECTION 05512

ALTERNATING TREAD METAL STAIRS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Prefabricated steel stairs with integral handrails.
- B. Prefabricated steel platforms with integral handrails.
- C. Prefabricated stainless steel stairs with integral handrails.
- D. Prefabricated stainless steel platforms with integral handrails.
- E. Prefabricated aluminum stairs with integral handrails.
- F. Prefabricated aluminum platforms with integral handrails.

1.2 RELATED SECTIONS

- A. Section 05500 - Metal Fabrications: Miscellaneous bracing and anchorage.
- B. Section 05510 - Metal Stairs: Conventional prefabricated metal stairs.
- C. Section 09900 - Paints and Coatings.

1.3 REFERENCES

- A. ASTM A 123 - Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- B. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- C. ASTM A 513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
- D. ASTM A 563 - Standard Specification for Carbon and Alloy Steel Nuts.

- E. ASTM A 569/A 569M - Standard Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality.
- F. ASTM A 780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide manufacturer's installation instructions.
- C. Shop Drawings: Submit dimensioned prints showing critical dimensions, jointing and connections, and fasteners provided by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Provide pre-engineered alternating tread metal stairs fabricated by Lapeyre Stair, Inc., 220-R Laitram Lane, Harahan, LA 70123. Telephone 1-800-535-7631 or 1-504-733-6009. FAX 1-504-733-4393.
- B. Substitutions will not be acceptable.

2.2 MANUFACTURED UNITS

- A. Alternating Tread Stairs: Alternating treads with center stringer.
 - 1. Material: Galvanized steel.
 - 2. Material: Aluminum, natural finish.
 - 3. Material: Stainless steel, natural finish.
 - 4. Finish: Manufacturer's standard safety yellow powder coating.
 - 5. Stair treads: Capable of withstanding a concentrated 1,000 pound load without deformation.
 - 6. Risers spaced equally to within 3/16 inch for adjacent risers and to within 3/8 inch for any two non-adjacent risers.
 - 7. Handrail: Capable of withstanding a load of 200 pounds applied in any direction at any point on the rail.

8. Handrails contoured for body guidance and underarm support.
 9. Steel stair angle: 56 degrees from horizontal.
 10. Steel stair angle: 68 degrees from horizontal.
 11. Aluminum stair angle: 68 degrees from horizontal.
 12. Vertical Drop: Distance between upper finished floor surface where top landing will be attached and lower finished floor surface as indicated on Drawings.
 13. Vertical Drop: Distance between upper finished floor surface where top landing will be attached and lower finished floor surface of _____.
- B. Structural Steel Components: 1010/15, per ASTM A 569/A 569M, size and gage to meet performance requirements and project dimensions.
1. Treads: 13 gage HRPO.
 2. Stair Landings and Foot Stampings: 11 gage.
 3. Stringers: 2 inch by 1-3/4 inch by 11 gage.
 4. Stringers: 3 inch by 1-3/4 inch by 11 gage.
 5. Platforms: CS, 3/16 inch diamond safety plate.
- C. Steel Handrails: 1010/15 CS per ASTM A 569/A 569M, cold drawn, fully annealed tube per ASTM A 513, 1-1/2 inches OD by 0.083 inch.
- D. Stainless Steel Structural Components: Type 304 SS, size and gage to meet performance requirements.
1. Treads: 13 gage.
 2. Landings and Foot Stampings: 11 gage.
 3. Stringers: 2 inch by 1-3/4 inch by 11 gage.
 4. Stringers: 3 inch by 1-3/4 inch by 11 gage.
 5. Platforms: 3/16 inch diamond safety plate.
- E. Stainless Steel Handrails: Type 304 SS cold drawn, fully annealed tube per ASTM A 513, 1-1/2 inches OD by 0.065 inch.
- F. Aluminum Landings, Treads, and Foot Castings: Aluminum Alloy F356F.
- G. Aluminum Stringer: Aluminum Alloy 6063-T52, box shape, 1-3/4 inch by 4 inch by 1/8 inch.
- H. Aluminum Handrails: Aluminum Alloy 6063-T4 Tube, 1-1/2 inches OD by 1/8 inch.
- I. Aluminum Platforms: Aluminum Alloy 5086 (H112 or equivalent), 1/4 inch diamond safety plate.

- J. Aluminum Platform Handrail Clamps: Cast aluminum (F356F).
- K. Miscellaneous Materials:
 - 1. Rubber spine: Hollow neoprene.
 - 2. Rubber foot divider: Santoprene (Type 101-73).
 - 3. Bolts: ASTM A 307.
 - 4. Nuts: ASTM A 563.

2.3 FABRICATION

- A. Fabricate components to comply with performance and design requirements specified and in accordance with approved shop drawings. Fabricate to minimize field assembly.
- B. Steel Stairs: Fabricate by gas metal arc welding, with stamped steel treads spot-welded to stringers.
 - 1. Provide custom-fabricated steel handrails for field bolting to prefabricated stair unit.
 - 2. Provide handrail design to accommodate field conditions indicated on Drawings.
- C. Stainless Steel Stairs: Fabricate by gas tungsten arc welding or gas metal arc welding, with stamped steel treads spot-welded to stringers.
 - 1. Provide custom-fabricated stainless steel handrails for field bolting to prefabricated stair unit.
 - 2. Provide handrail design to accommodate field conditions indicated on Drawings.
- D. Aluminum Stairs: Provide all welded construction, using gas metal arc welding or gas tungsten arc welding. Fabricate using cast aluminum treads and cast aluminum mounting plates; shop weld handrails to stair assembly.
- E. Platforms: Provide cut, formed, and punched platforms with mounting brackets and kickplates, configured and sized as indicated on Drawings.
 - 1. Steel construction: Fabricate using gas metal arc welding.
 - 2. Stainless steel construction: Fabricate using gas tungsten arc welding or gas metal arc welding.
 - 3. Aluminum construction: Fabricate using gas tungsten arc welding or gas metal arc welding.

- 4. Handrails: Provide bolt-on handrails of same material as platform construction.
- F. Galvanizing: Hot-dip galvanize steel components in accordance with ASTM A 123.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that dimensions are correct and substrate is in proper condition for installation of metal stair components. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Install handrails to stair unit, using bolts furnished with stair unit by manufacturer.
- B. Prepare mounting holes, using drawings supplied by stair manufacturer.

3.3 INSTALLATION

- A. Position stair units with top tread at same elevation as finished floor or roof surface.
- B. Verify that stairs are properly aligned with building construction, at correct angle, and free from distortion. Secure in position using not fewer than two bolts or studs at top and two at bottom.
- C. Install crossover or landing platform with stair, securing with two bolts and handrail clamps. Bolt handrails in place.
- D. Do not field cut or alter members.

3.4 ADJUST AND CLEAN

- A. Touch up damage to galvanized surfaces using galvanizing repair paint in accordance with ASTM A 780.
- B. Touch up abraded areas on shop paint immediately after erection, using matching paint.

- C. Clean work area of debris associated with installation of alternating tread metal stairs.

END OF SECTION