

SECTION 05 51 19
METAL GRATING STAIR

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide industrial type aluminum stair structural framing, grating treads and risers as shown on the drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related Work:
 - 1. Section 05 50 00- Metal Fabrications
 - 2. Section 05 52 00- Metal Railings
 - 3. Section 05 53 00- Metal Gratings
 - 4. Section 09 90 00- Painting and Coating

1.2 SUBMITTALS

- A. Submit shop drawings, including:
 - 1. Manufacturer's specification and other data needed to prove compliance with the specified requirements.
 - 2. Fabrication, layout, installation, anchorage, and interface of the work of this section with the work of adjacent trades.
 - 3. Manufacture's recommended installation procedures.

1.3 QUANLITY ASSURANCE

- A. Comply with OSHA and local building codes.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with no less than three years of experience.
- C. Comply with recommendations of AWS, Structural Welding Code on Aluminum, D1.2 latest edition.
- D. Stair shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Uniform Load: 100 lbf/sq. (4.79kN/Sq. m)
 - 2. Concentrated Load: 300 lbf (1.33kN) applied on an area of 4 sq in. (2580 sq. mm.)
 - 3. Uniform and concentrated loads need not be assumed to act concurrently
 - 4. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
 - 5. Limit deflection of treads, platforms, and framing members to L/360 or ¼-inch (6.4mm), whichever is less.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials to job site properly marked to identify the structure for which they are intended and at such intervals to insure uninterrupted progress of the work. Marking shall correspond to markings indicated on the shop drawings.
- C. Store all members off the ground using pallets, platforms, or other supports.
- D. Do not store materials on the structure in a manner that might cause distortion or damage to the members of the supporting structure.

Part 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Aluminum Grate Stair by Breuer Metal Craftsmen Inc.
phone: (920) 885-2828 or toll free 1-800-266-1091
email: craftsmen@breuermetal.com
website: <http://breuermetal.com/>

2.2 GENERAL REQUIREMENTS

- A. Fit and shop assemble stair in the largest practical sections for delivery to the job site.
- B. Miter the stringers at changes in direction with joints tightly fitted and secured by continuous welds and grind with #3 NOMMA Finish. Make exposed joints butt tight. Ease exposed edges to a small uniform radius.
- C. Close and fit the ends of stringers at the floor or landing to the floor surface. On the landings and platforms where they are part of the stair framing, carry the wall stringers around and above the finished level of the platform to form a base of the height as shown.
- D. Provide standard prefabricated aluminum grating treads and aluminum nosings with extruded re-enforced profile with non-slip ribs.
 - 1. Mechanically fasten grating treads with aluminum bearing angle to stringers.
 - 2. Grating bearing bars shall be spaced 1-3/16-inches on center and cross bars shall be spaced at 4-inches on center. Cross bars shall be flush at top with bearing bars
 - 3. All Grating edges shall be banded
 - 4. Unless noted other, all grating at treads and landings will not be welded to supports, provided saddle clips as required for attachment. Limit weight of each section to no more that 50-pounds.
 - 5. Provide aluminum riser plates welded to grating tread, unless drawings indicate other.

2.3 MATERIALS

- A. Aluminum

1. Plate: Alloy 6061-T6, Mill Finish, Heat Treatable.
 2. Structural Shapes: Alloy 6061-T6, ASTM B 308
 3. Sheet Aluminum: ASTM B209 (ASTM B209M), Alloy 5052, H32 or H22 Temper.
 4. Round Pipe: Alloy 6061-T6, ASTM B429
 5. Square Tubing: Alloy 6063-T52, Extruded
 6. Rectangular Tubing: Alloy 6063-T52, Extruded
 7. Aluminum- Alloy Bars: ASTM B211 (ASTM B211M), Alloy 6061-T6
- B. Grating- Aluminum
1. Material: ASTM B 211, Alloy 6061-T6 or 6063-T6
 2. Construction Type: Swage-Locked , Standard Rectangular Bar
 3. Surface: Serrated
- C. Fasteners- Stainless Steel
1. Interior: Bolts, Nuts, Washers and Anchors: 304 Stainless Steel
 2. Exterior: Bolts, Nuts, Washers and Anchors: 316 Stainless Steel

2.4 ALUMINUM FINISHES

- A. Grind weld joints smooth with adjacent finish surface.
- B. Coat aluminum in contact with dissimilar metals, masonry or lime products with one-coat of bituminous paint.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install metal stair in accordance with the manufacture's recommendations and approved shop drawings.
- B. Install components plumb and level, accurately fitted, free from distortion or defects.
- C. Securely bolt or anchors, plates, angles, hangers, and struts required for connecting stairs to structure.
- D. Provide welded field joints where specifically indicated or shop drawings. Perform field welding in accordance with the appropriate AWS Specification.
- E. Obtain approval prior to site cutting or creating adjustments not schedules.

END OF SECTION