

SECTION 05 53 00
ALUMINUM GRATING

PART 1 – GENERAL

1.1 SUMMARY

- A. Provide aluminum grating 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 51 19- Metal Grate Stairs
 - 3. Section 05 51 36- Metal Walkways

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. Manufacturer'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. Perform shop and/or field welding required in connection with the work of this Section in strict accordance with pertinent recommendations of the American Welding Society.
- D. Conform to Metal Bar Grating Manual and NAAMM requirements.
- E. Do not exceed a maximum clearance of one-half inch between the vertical legs of the bearing angle and the edge of the grating, with the grating centered within the bearing angles.

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 Grating by Breuer Metal Craftsmen Inc. phone: (920) 885-2828, fax: (920) 885-2822, email: craftsmen@breuermetal.com, or equal.
- B. Aluminum Bearing Angles by Breuer Metal Craftsmen Inc. phone: (920) 885-2828, fax: (920) 885-2822, email: craftsmen@breuermetal.com, or equal.

2.2 GENERAL REQUIREMENTS

- A. Provide shop fabricated grating and accessories such as frames, support angles, fasteners and treads.
- B. Grating shall be designed and fabricated to meet the live load conditions of 100 lbs/sq. ft. with maximum deflection of 1/4” for the clear spans shown on drawings.
- C. Provide trim banding or load carrying banding on edges and cutouts welded to grating.
 - 1. Bearing bars not resting on supports shall have load carrying banding sized to span opening.
 - 2. Minimum banding thickness shall match bearing bar thickness.
 - 3. Banding shall be flush with top of grating.
 - 4. Banding depth shall be 1/4-inch less than banding bearing bar depth at supports to account for drainage.
- D. Provide hold-downs to firmly anchor grating and treads to supports. Section designated as removable shall not be attached to supports.
 - 1. Minimum of 4-units per panel
 - 2. Shall allow for repeated removal
 - 3. Saddle clip type
 - 4. “G” clip type
 - 5. Clamp type
 - 6. Min. 1/4-inch bolt or self tapping screws.
- E. Cross bars shall not extend more than 1/8-inch past bearing bars at panel edge.
- F. Panels shall bear on supports a min. length equal to bearing bar depth.
- G. Grating supports shall conform to requirements of Section 05 50 00- Metal Fabrications.

2.3 MATERIALS

- A. Grating- Aluminum

1. Material: ASTM B 211, Alloy 6061-T6 or 6063-T6
2. Bearing bars shall be spaced at 1-3/16-inches o.c. And cross bars spaced 4-inches
3. Construction Type: Swage-Locked , Standard Rectangular Bar
4. Surface: Smooth
5. Size bearing bars as follows:

<u>Maximum Clear Span</u>	<u>Bearing Bar Size</u>
3'-6"	1 X 3/16
4'-0"	1-1/4 X 3/16
4'-6"	1-1/2 X 3/16
5'-6"	1-3/4 X 3/16
6'-0"	2 X 3/16

- B. Aluminum Bearing Angle: 1/4-inch minimum thickness with 2-inch horizontal leg and vertical legs equal to the depth of grating bearing bars.
 1. Frame angles to be set in concrete.
 - a. Provide minimum of 4-inch embedded anchor at 45 degrees down from the horizontal.
 - b. Provide anchors that adjust horizontally to avoid rebar and other obstacles in concrete, space anchors a maximum of 18-inches o.c.
 - c. Provide air gap in horizontal leg of angle so concrete does not interfere with grating hold-downs.
 2. Frame angles to be set against vertical surface.
 - a. Provide 1/2-inch stainless steel anchor bolts.
 - b. Space anchor bars and anchor bolt holes at a maximum of 2'-0" on center with not less than 2 each on any frame side.
- 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. 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 FIELD VERIFICATION

- A. Take field measurements prior to preparation of final shop drawings and fabrication where required to ensure proper fitting of the work.

3.2 INSTALLATION

- A. Install aluminum grating in accordance with the manufacture's recommendations and approved shop drawings.

END OF SECTION