

SECTION 05 53 00

METAL GRATINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. General gratings.
- B. Requirements:
 - 1. Furnish all materials, labor, and equipment required to provide all gratings in accordance with the Contract Documents.
- C. Related Requirements:
 - 1. Section 05 05 00 – Anchor Systems.
 - 2. Section 05 50 00 – Metal Fabrications.
 - 3. Section 09 91 00 – Paint and Protective Coatings.

1.2 REFERENCE STANDARDS

- A. American Welding Society:
 - 1. AWS A2.4 – Standard Symbols for Welding, Brazing, and Nondestructive Examination.

1.3 SUBMITTALS

- A. Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit span and deflection tables and manufacturer's certificate.
- C. Shop Drawings: Indicate details of gratings, plates, component supports, anchorages, openings, perimeter construction details, and tolerances. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- D. Qualifications Statement:
 - 1. Submit qualifications for licensed professional.
 - 2. AWS certified welders.

1.4 EXISTING CONDITIONS

- A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General – Grating, including support frames, fastenings, and all necessary appurtenances for a complete installation, shall be furnished as indicated on the Drawings.
 - 1. All exposed bearing ends of grating shall be enclosed in a perimeter band of the same dimensions and material as the main bars, including ends at all cutouts.
 - 2. Grating shall be fabricated into easily removable sections and shall be fastened at each corner and as required with fasteners provided by the grating manufacturer. No fasteners shall be permitted to project above the walking surface.
 - 3. Grating shall be designed for a loading of 150 psf unless otherwise required by the Drawings. Grating deflection shall not exceed 1/4 inch under a uniform load of 100 psf. Minimum grating depth shall be 1-1/2 inches, unless structural requirements based on clear span require more depth.
- B. Aluminum Grating
 - 1. Aluminum grating shall be of I-bar type and shall consist of extruded bearing bars positioned and locked by crossbars. All supports, cross members, etc. shall be aluminum. Plank clips for grating hold-downs or other required attachments, shall be aluminum or stainless steel. Bolts shall be stainless steel.
 - 2. Grating shall be “19-SI-4 I-Bar Swage Locked” by Alabama Metal Industries Corporation (AMICO), “IB” by Harsco Industrial IKG, “I-Bar 19SGI4”, by Ohio Grating Inc., or “I-Bar” by Thompson Fabricating LLC.

2.2 FABRICATION

- A. All measurements and dimensions shall be based on field conditions and shall be verified by the Contractor prior to fabrication. Such verification shall include coordination with adjoining work.
- B. All fabricated work shall be shop fitted together as much as practicable, and delivered to the field, complete and ready for erection. All miscellaneous items such as stiffeners, fillets, connections, brackets, and other details necessary for a complete installation shall be provided.
- C. All work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent shearing of bolts, screws, and other fastenings, ensure rigidity, and provide a close fit of sections.
- D. Finished members shall conform to the lines, angles, and curves shown on the Drawings and shall be free from distortions of any kind.
- E. All shearings shall be neat and accurate, with parts exposed to view neatly finished. Flame cutting is allowed only when performed utilizing a machine.
- F. All shop connections shall be welded unless otherwise indicated on the Drawings or specified herein. Bolts and welds shall conform to Section 05 05 00 – Anchor Systems. All fastenings shall be concealed where practicable.
- G. Fabricated items shall be shop painted when specified in Section 09 91 00 – Painting and Protective Coatings.
- H. Fabricate gratings and plates to accommodate design loads to sizes indicated.

- I. Bolt or weld joints of intersecting metal sections.
- J. Removable Panels: With recessed handles.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 70 00 – Execution and Closeout Requirements.
- B. Verify that opening sizes and dimensional tolerances are acceptable.
- C. Verify that supports and anchors are correctly positioned.

3.2 INSTALLATION

- A. Place frames in correct position, plumb and level.
- B. Mechanically cut finish surfaces. Do not flame cut.
- C. Anchor by welding or bolting through flange blocks. Shall conform to Section 05 05 00 – Anchor Systems.
- D. Set perimeter closure flush with top of grating and surrounding construction.
- E. Secure to prevent movement.

3.3 CLEANING

- A. Section 01 70 00 – Execution and Closeout Requirements.
- B. Clean welds and damaged coatings and apply two coats of touchup primer.

END OF SECTION