

## Model Specification: 19-SI-4 Aluminum I-Bar Gratings

September 15, 2022

Specifier Notes: Architect or engineer should carefully review and edit this section to meet the requirements of the project and local building codes. Coordinate this section with other specification sections and the drawings and delete any unused "Specifier Notes" and options shown in "red" after editing.

This section covers Pleasant Mount Welding, Inc.'s "19-SI-4 Aluminum I-Bar Swage Lock Grating." This model specification may also be edited and revised for 19-SI-2, 15-SI-4 or 15-SI-2 I-Bar Swage Lock Gratings. Consult PMWI ([www.pmwi.net](http://www.pmwi.net)) for assistance in editing this section for specific applications. Call 570.282.6164 or email [sales@pmwi.net](mailto:sales@pmwi.net) with any questions.

### SECTION 055300 - Metal Fabrications: Metal Gratings

#### Part 1: General

##### 1.1 Section Includes

- A. Prefabricated, light-duty aluminum bar gratings.
- B. Miscellaneous installation hardware and accessories.

##### 1.2 Reference Standards

- A. ANSI A326.3-2017: American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials.
- B. ASTM B221: Aluminum Extruded Bars and Shapes.
- C. ANSI/NAAMM MBG 531-17: Metal Bar Grating Manual.

##### 1.3 Action Submittals

- A. Product Data: The contractor shall submit the manufacturer's catalog pages including load tables, anchor details and standard installation details.
- B. Shop Drawings: The contractor shall submit for approval shop drawings for the fabrication and erection of all gratings, based on construction drawings of current issue. Include plans, elevations, and details of sections and connections as required. Show type and location of all fasteners.
- C. Samples of grating and anchorage system shall be submitted for approval.

##### 1.4 Quality Assurance

- A. Manufacturer Qualification: A company specializing in the manufacture of metal bar gratings with not less than 10 years of documented experience.
- B. Fabrication tolerances shall be in accordance with applicable provisions and recommendations of ANSI/NAAMM MBG 531-17: Metal Bar Grating Manual.

## Part 2: Products

### 2.1 Source Requirements:

Design is based upon use of gratings as manufactured by Pleasant Mount Welding, Inc. and terminology used herein may include reference to the specific performance or product of this manufacturer. Such reference shall be construed only as establishing the quality of materials, operational features and workmanship used under this section and shall not, in any way, be construed as limiting competition.

### 2.2 Manufacturers:

Acceptable manufacturers include Pleasant Mount Welding, Inc. (45 Dundaff Street, Carbondale, PA 18407, 570-282-6164, [www.pmwi.net](http://www.pmwi.net)) or approved equal.

### 2.3 Manufactured Units:

A. **Description:** Aluminum I-Bar Swage Lock Grating type **19-SI-4**. Square cross bars are assembled through diamond shaped holes in I-shaped bearing bars, which are then permanently locked in place by a swaging process.

1. Bearing Bar Spacing: **1-3/16"** on center.
2. Bearing Bar Depth: based on loading requirements and clear span as shown on drawings.
3. Bearing Bar Thickness: **1/4" at top to provide 15/16"** space between bars.
4. Cross Bar Spacing: **4"** on center.
5. Top Surface of Bearing Bars: **Striated or SlipNOT® Slip Resistance Coating**

B. **Fabrication:** Fabricate cutouts in grating sections for penetrations as indicated. Arrange cutouts to permit grating removal without disturbing items penetrating gratings. Trim band ends (and cuts in grating) with bars of the same thickness and nominal depth and material as bearing bars (as shown on drawings). Weld banding flush with the top surface of grating. Include fabrication required for attachment system shown on drawing plans, or as recommended by manufacturer.

#### C. Design Criteria:

1. **Loading:** Grating products shall be designed and manufactured to meet live load conditions of **100 lbs / SQFT with a maximum deflection of 1/4"** for the clear spans shown on the drawings. Bearing bar depth shall be as shown on contract drawings, or as recommended by the manufacturer to meet loading requirements, clear span conditions and maximum deflections specified.
2. **Traction / Slip-Resistance:** When a traction surface is required, it is to be tested per ANSI A326.3-2017. Top surface shall provide a minimum Wet Dynamic Coefficient of Friction (Wet DCOF) of 0.45 to meet high traction classification.

- D. **Materials:** Bearing bars and banding are aluminum 6063-T6 and aluminum cross bars are type 6063-T1.
- E. **Fabrication Tolerances** shall be in accordance with ANSI/NAAMM MBG 531-17: Metal Bar Grating Manual.
- F. **Top Surface:** When required, **SlipNOT® Slip Resistance Coating** will be included in order to meet or exceed Wet Dynamic COF requirements of paragraph 2.3 C.2 above.
- G. **Finish:** Gratings shall be **Mill finish or A-41 Clear Anodized.**

#### **2.4 Accessories:**

Provide appropriate fasteners for type, grade, and class required for approved anchorage system.

### **Part 3: Execution**

#### **3.1 Field Verification:**

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. Prior to grating installation, contractor shall inspect supports for correct alignment and conditions for proper attachment and support of the gratings. Metal shall be used for all grating supports and provide the minimum bearing surface for the depth of grating per ANSI/NAAMM MBG 531-17: Metal Bar Grating Manual. Ends of all bearing bars at cutouts for penetrations are to be supported in like manner. Any inconsistencies between contract drawings and supporting structure deemed detrimental to grating placement shall be reported in writing to the engineer, architect or owner's agent prior to placement.
- B. Install grating in accordance with shop drawings and standard installation clearances as recommended by ANSI/NAAMM MBG 531-17: Metal Bar Grating Manual.
- C. Protection of Aluminum from Dissimilar Materials:
  - 1. Where aluminum surfaces come into contact with dissimilar metals, surfaces shall be kept from direct contact by painting the dissimilar metal with one coat of bituminous paint, powder coat paint, or other approved insulating material.
  - 2. Where aluminum surfaces come into contact with dissimilar materials such as concrete, masonry or lime mortar, exposed aluminum surfaces shall be painted with one coat of bituminous paint, powder coat paint, or other approved insulating material.

#### **3.3 Grating Attachment:**

Use approved attachment system and fasteners to secure grating to supporting members as shown on plans.