

## **18-R-3.5 Light Duty Riveted Steel Bar Gratings**

Model Specification for type 18-R-3.5 Riveted Steel Bar Gratings as Manufactured by Direct Metals, 3775 Cobb International Blvd. Kennesaw, GA 30152-4390 or approved equal.

NOTE: The specifier will need to edit this specification to reflect the options in this document shown in **Red**. Some editing can be accomplished by deleting unnecessary requirements.

### **SECTION 05 53 00 Metal Fabrications – Metal Gratings**

#### **Part 1: General**

##### **1.1 Section Includes**

- A. Prefabricated custom-designed light duty steel bar gratings.
- B. Miscellaneous installation hardware and accessories.

##### **1.2 References**

- A. ASTM A-1011 CS Type B Steel Strip Hot-Rolled Carbon
- B. ASTM A-510 Carbon Steel Wire Rods
- C. ANSI/NAAMM- MBG-531-09 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 531-09 Metal Bar Grating Manual.

#### **Part 2: Products**

##### **2.1 Source Requirements:**

Design is based upon use of gratings as manufactured by Direct Metals 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 to be used under this Section and shall not, in any way, be construed as limiting competition.

## **2.2 Manufacturers:**

Acceptable Manufacturers include Direct Metals, 3775 Cobb International Blvd. Kennesaw, GA 30152-4390, 800-711-4939, www.directmetals.com, or approved equal.

## **2.3 Manufactured Units:**

- A. Description:** Steel Riveted Rectangular Bar Grating type **18-R-3.5**: Straight bearing bars and bent connecting bars joined at their contact points by hydraulically compressed rivets **3-1/2"** inches on center.
1. Bearing Bar Spacing: **1-1/8"** face to face.
  2. Bearing Bar Depth: based on loading requirements and clear span.
  3. Bearing Bar Thickness: **3/16"** to provide 1-1/8" space between bearing bars.
  4. Top Surface of Bearing Bars: **Plain or Slip Resistant**
  5. Top Surface of Connecting Bars: **Plain or Serrated & raised 1/8"**
- B. Fabrication:** Fabricate cutouts in grating sections for penetrations indicated. Arrange cutouts to permit grating removal without disturbing items penetrating gratings. Band ends and cuts in grating with bars of same size and material as bearing bars.
- C. Design Criteria:**
1. **Loading:** Grating Products shall be designed and manufactured to meet the live load conditions of 100 lbs/Sq Ft with maximum deflection of 1/4" for the clear spans shown on the drawings. Bearing bar depth shall be as shown on the contract drawings or as recommended by the manufacturer to meet the loading requirements, clear span conditions and maximum deflections specified.
- D. Materials:** Bearing bars, connecting bars and banding are Carbon Steel Type ASTM A-1011 CS Type B. Rivets are Carbon Steel type ASTM A-510.
- E.** Fabrication Tolerances shall be in accordance with ANSI/NAAMM MBG 531-09 Metal Bar Grating Manual.
- F. Finish:** Gratings shall be **Mill finish or Galvanized or Powder Coat Painted (choose color)**

## **2.4 Accessories:**

Provide appropriate fasteners for type, grade, and class required for the 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. Any inconsistencies between contract drawings and supporting structure deemed detrimental to grating placement shall be reported in writing to the 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-531-09 Metal Bar Grating Manual.

**3.3 Grating Attachment:** Use approved attachment system and fasteners to secure grating to supporting members as shown on plans.