

11-SGCS-4 Carbon Steel Rectangular Bar Gratings

Model Specification for type 11-SGCS-4 Carbon Steel Swage Lock Gratings as Manufactured by Ohio Gratings, Inc. 5299 Southway St. SW, Canton, Ohio 44706 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-513 Carbon Steel Mechanical Tubing
- C. ANSI/NAAMM- MBG-531-09 Metal Bar Grating Manual
- D. US Dept. of Justice Americans with Disabilities Act- 2010 Design Standards Section 302 for bar spacing and slip resistance.
- E. ANSI-NFSI B101.3-2012 Test Method for Measuring Wet Dynamic Coefficient of Friction (Wet DCOF) of Common Hard-Surface Floor Materials.

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 Ohio Gratings, 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 to be used under this Section and shall not, in any way, be construed as limiting competition.

2.2 Manufacturers:

Acceptable Manufacturers include Ohio Gratings, Inc. 5299 Southway St. SW, Canton, Ohio 44706, 800-321-9800 www.ohiogratings.com , or approved equal.

2.3 Manufactured Units:

- A. Description:** Carbon Steel Swage Lock Rectangular Bar Grating type **11-SGCS-4** with OnGrip™ Spray Traction Surface. Fabricated by assembling tubular steel cross bars through round shaped holes in rectangular bearing bars that are then permanently locked in place by swaging.
1. Bearing Bar Spacing: **11/16"** on center.
 2. Bearing Bar Depth: based on loading requirements and clear span.
 3. Bearing Bar Thickness: **3/16" to provide 1/2"** space between bars.
 4. Cross Bar Spacing: 4" on center.
 5. The top surface of the gratings shall have OnGrip™ Spray Traction Surface.
- 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.
 2. **Traction / Slip Resistance:** When tested per ANSI-NFSI B101.3-2012, the top surface shall provide a minimum Wet Dynamic Coefficient of Friction (Wet DCOF) of 0.45 to meet High Traction classification. Also, per ADA section 302.1, walking surfaces shall provide a slip-resistant surface with sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation.
 3. **Bearing Bar Orientation:** Per ADA section 302.3, the gratings shall be oriented with the top surface bearing bars perpendicular to the predominate direction of pedestrian travel.
- D. Materials:** Bearing bars and banding are Carbon Steel Type ASTM A-1011 CS Type B, and Steel Tube Cross Bars are type ASTM A-513.

- E. Fabrication Tolerances** shall be in accordance with ANSI/NAAMM MBG 531-09 Metal Bar Grating Manual.
- F. Top Surface:** OnGrip™ Spray Traction Surface shall be supplied in order to meet or exceed the Wet Dynamic COF requirements of paragraph 2.3 C.2 above.
- G. Finish:** Gratings shall be **Mill finish or Hot-Dip Galvanized per ASTM A123 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.