



11-W-4 Carbon Steel Welded Bar Grating

Section 05 53 00 — Three-Part Guide Specification

Document	Value
Document code	QY-SG-3PS-11W4-01
Revision / date	Rev. 1.0 / 24 Jul 2026
Intended use	Editable project specification for QY welded steel bar grating
Status	Controlled customer reference; project data remains subject to approved submittals

Evidence boundary. This original QY guide does not certify a particular product or project. The responsible design professional must confirm loads, spans, deflection, openings, slip criteria, support and fasteners.

Use rule: Never release a quotation, fabrication drawing, installation instruction or compliance statement from this guide without a project-specific technical review.

Engineering clarity • RFQ completeness • traceable evidence



PART 1 — GENERAL

1.1 Summary

This Section includes shop-fabricated light-duty carbon steel welded bar grating, bearing bars, cross bars, banding, anchors, clips, fasteners and accessories required for a complete installation.

1.2 References

- ANSI/NAAMM MBG 531-24 — Metal Bar Grating Manual.
- ASTM A1011/A1011M-25 — Hot-rolled steel sheet and strip, when applicable to bearing-bar material.
- ASTM A510/A510M-25 — General requirements for wire rods and coarse round wire, when applicable to cross-bar input.
- ASTM A123/A123M-24 — Zinc coatings on iron and steel products, when after-fabrication galvanizing is specified.
- ASTM A153/A153M-23 — Zinc coating on iron and steel hardware, when applicable to accessories.
- 2010 ADA Standards, Sections 302.1 and 302.3, where an accessible route is required.
- Project structural accessibility, slip-resistance, fire/life-safety and owner standards.

Use the edition adopted by the contract documents or authority having jurisdiction. Do not combine unit systems or editions without review.

1.3 Design and performance requirements

- Design load: uniform load [____ psf / ____ kPa] and concentrated load [____ lb / ____ kN] at the stated location.
- Clear span: [____ in / ____ mm]; support width: [____ in / ____ mm].
- Maximum service deflection: lesser of $[L/____]$ or [____ in / ____ mm], unless project criteria state otherwise.
- Select bearing-bar depth from exact product load/deflection evidence, not nominal designation alone.
- Where accessibility applies, openings shall not pass a sphere greater than 1/2 in (13 mm), and elongated openings shall be oriented with the long dimension perpendicular to dominant travel.
- Slip-resistance performance: [test method, condition and acceptance value]. No compliance statement without an exact surface test report accepted by the project team.

1.4 Submittals

- Product data identifying grating designation, bearing-bar size/spacing, cross-bar spacing, material, surface and finish.
- Load table or calculation matching the exact product, span, support condition and stated loads.
- Shop drawings with panel layout, bearing-bar direction, supports, penetrations, cutouts, banding, joints, anchors and removable sections.
- Material certificates, coating report, fastener certificates and dimensional inspection report.
- Slip and other test reports only when specified; each report shall identify the exact tested product and condition.



1.5 Quality assurance

- Maintain traceability from raw material through fabrication, finish, inspection and packing.
- Welding and fabrication personnel/procedures shall comply with project requirements.
- Resolve conflicts among specification, drawing, approved submittal and field conditions before fabrication.
- Do not claim ADA, slip, load or coating compliance by product name alone.

1.6 Delivery, storage and handling

- Bundle and mark panels by area or panel ID; protect edges and finished surfaces.
- Store dry, ventilated and above ground; avoid wet, unventilated stacking of galvanized work.
- Do not lift bundles in a manner that permanently distorts panels.

PART 2 — PRODUCTS

2.1 Manufacturer

Basis-of-design supplier: QY Metal Tech, qymetaltech.com. Substitutions must provide the same technical, dimensional, load, finish and evidence package.

2.2 Welded bar grating

Parameter	Specified requirement
Designation	11-W-4 welded steel bar grating, subject to project confirmation
Bearing-bar spacing	11/16 in nominal on center; state metric manufacturing control and tolerance
Bearing-bar thickness	3/16 in nominal or project-approved equivalent
Bearing-bar depth	[____ in / ____ mm], selected from approved load/deflection evidence
Cross-bar spacing	4 in nominal on center
Surface	Plain / serrated / project-verified slip-resistant option
Panel size	[____ x ____] with bearing-bar direction shown on shop drawings
Banding	Flush / load-carrying / trim banding as detailed
Finish	Bare / after-fabrication hot-dip galvanized / project coating system

The 11-W-4 designation is a geometric/product description, not proof of load capacity, slip value, accessibility result or coating compliance.



2.3 Materials

- Bearing bars: carbon steel conforming to the approved grade and standard; ASTM A1011/A1011M is one possible project basis where applicable.
- Cross bars: carbon steel wire/rod conforming to the approved input specification; ASTM A510/A510M provides general requirements when applicable.
- Banding and welded attachments: compatible carbon steel with documented grade.
- Fasteners and clips: material, grade and coating suitable for substrate, environment and maintenance.

2.4 Fabrication

- Fabricate panels to the approved layout; bearing bars shall span between supports.
- Provide openings, cutouts and banding at locations shown; use an approved repair procedure for any finished-panel modification.
- Maintain adopted ANSI/NAAMM tolerances and tighter project tolerances where stated.
- Identify removable panels and match-mark adjacent panels where required.
- Remove sharp projections and debris without reducing required section.

2.5 Finishes

- After-fabrication hot-dip galvanizing: ASTM A123/A123M, when specified and applicable.
- Hardware galvanizing: ASTM A153/A153M, when specified and applicable.
- Repair coating damage only by the method permitted by the governing standard and approved project documents.
- Provide coating inspection results linked to panel or batch identity.

2.6 Accessories

- Provide clips, anchors, fasteners, washers and support seats shown on the approved drawings.
- Use a minimum of [] positive attachments per panel or the engineered quantity on the approved drawing.
- Coordinate captive or tamper-resistant hardware where removable access is required.



PART 3 — EXECUTION

3.1 Examination

- Verify support locations, elevations, bearing width, openings and adjacent construction.
- Confirm supports are complete, aligned and capable of receiving specified fasteners.
- Do not install over unapproved field conditions; document and obtain disposition.

3.2 Installation

- Install bearing bars in the span direction shown on approved shop drawings.
- Provide full, even bearing and required edge clearance; do not use loose, unapproved shims.
- Orient elongated openings perpendicular to dominant travel where accessibility applies.
- Align adjacent surfaces to avoid trip edges; maintain specified joint and perimeter gaps.
- Attach with the approved clip/anchor pattern without crushing or distorting bearing bars.
- Restore damaged finish by the approved method and record repairs.

3.3 Field quality control

Inspection	Acceptance record
Panel identity / drawing	Correct panel ID, revision and location
Bearing direction / support	Correct span direction, bearing width and support contact
Openings / joints	Approved size, orientation and trip-edge control
Fasteners	Correct type, quantity, location and security
Finish	Damage repaired and no unacceptable sharp edges
Removable access	Operates, is restrained in service and is identified

3.4 Cleaning and protection

- Remove debris, labels and foreign material without damaging finish.
- Protect installed grating from overload, welding spatter, concrete contamination and traffic until handover.
- Replace damaged panels that cannot be restored within approved acceptance criteria.

3.5 Closeout

- Submit as-built layout, material/coating records, deviations, repair record and maintenance instructions.
- Record final product designation, panel IDs and evidence package revision used for release.

END OF SECTION