

Steel Grating Technical Glossary



This glossary compiles commonly used technical terms in the steel grating industry, covering product specifications, materials, surface treatments, installation and inspection. All dimensions are shown in imperial units with metric equivalents in parentheses for reference.

1. Product Types

Term	Abbreviation	Description
Pressure Welded Grating	PWG	Grating manufactured by resistance welding bearing bars to cross bars under pressure and heat
Press-Locked Grating	PLG	Grating where cross bars are mechanically pressed into notched bearing bars for a tight interlock
Inserted / Riveted Grating	—	Grating made by inserting notched bearing bars into each other and welding at intersections
Composite Grating	—	Combined structure with a steel grating base and a checker plate or perforated top surface
Serrated Grating	—	Grating with serrated (grooved) bearing bars for enhanced slip resistance
Bar Grating / Grid Plate	—	General term for steel grating products; also called steel grid plate
Trench Cover / Drain Grating	—	Grating panels used to cover drainage trenches or floor drains
Stair Tread / Step Grating	—	Grating panels used as stair steps, typically with an anti-slip nosing
Platform / Floor Grating	—	Grating used for industrial platforms, walkways and floor applications
Ceiling Grating	—	Lightweight grating used for architectural ceiling decoration

2. Structural Parameters

Term	Unit (Imperial [Metric])	Description
Bearing Bar	in [mm]	Longitudinal steel bars that carry the load; determine load capacity of the grating
Cross Bar / Twisted Bar	in [mm]	Transverse bars (usually twisted square steel) that connect bearing bars
Bearing Bar Pitch / Spacing	in [mm]	Center-to-center distance between adjacent bearing bars
Cross Bar Pitch / Spacing	in [mm]	Center-to-center distance between adjacent cross bars
Bearing Bar Depth	in [mm]	Height dimension of the bearing bar cross-section
Bearing Bar Thickness	in [mm]	Thickness dimension of the bearing bar cross-section
Twisted Square Bar	in [mm]	Twisted square steel bar used as cross bar; common size 1/4"×1/4" [6×6mm]

Term	Unit (Imperial [Metric])	Description
Mesh / Opening Size	in [mm]	Clear opening formed by bearing bars and cross bars
Load Bearing Bar	—	Bars running perpendicular to the span direction, carrying the primary load
End Bar / Trim Bar	in [mm]	Flat bar used to finish and close off the ends of grating panels

3. Material Grades

Material Type	ASTM (US)	EN / ISO (EU)	JIS (Japan)	Notes
Mild Carbon Steel	A36 / SS400	S235JR	SS400	Most common structural steel, suitable for general industrial environments
High Strength Low Alloy	A572 Gr.50	S355JR / S355J0	SM490A	Higher strength for heavy load applications
Stainless Steel 304	TP304 / 304	1.4301 / X5CrNi18-10	SUS304	Good corrosion resistance; wet/food environments
Stainless Steel 316	TP316 / 316	1.4401 / X2CrNiMo17-12-2	SUS316	Molybdenum-alloyed; resistant to seawater and chlorides
Aluminum Alloy	6061-T6 / 6063-T5	EN AW-6061	A6061	Lightweight; applications where weight is critical
Zinc Coating / HDG	ASTM A123 / A153	EN ISO 1461	JIS H 8641	Hot-dip galvanized corrosion protection

4. Surface Treatments

Treatment	Abbreviation	Typical Service Life (Reference)
Hot-Dip Galvanized	HDG	20-50 years (environment dependent)
Electro-Galvanized	EG	3-8 years
Paint Coated	—	3-10 years (depends on paint type)
Powder Coated	—	8-15 years
Polished	—	For stainless steel; bright finish
Pickling & Passivation	—	Corrosion resistance treatment for stainless steel
Mill Finish / Black	—	No surface treatment; requires on-site painting

5. Inspection & Specifications

Term	Unit	Description
Load Capacity / Rating	psf / kN/m²	Uniform or concentrated load a grating panel can support at a given span
Deflection	in [mm]	Bending deformation under load; typically limited to L/200–L/300 of span
Safety Factor	—	Ratio of failure load to design load; typically 1.5–3.0

Term	Unit	Description
Zinc Coating Thickness	mil [μm]	Average zinc layer thickness after HDG; typically ≥3.4 mil [85μm]
Adhesion	—	Bond strength of zinc or paint coating to the base metal
Flatness	in/ft [mm/m]	Surface flatness deviation; generally ≤1/16 in/ft [5mm/m]
Weld Strength	lbs / kN	Shear strength at the bearing bar / cross bar joint
Dimensional Tolerance	in [mm]	Permissible deviation for length, width and thickness
Salt Spray Test	hrs	Accelerated corrosion test to evaluate coating durability