# Steel Grating

## PRODUCT MANUAL | STEEL GRATING

Apex Metal Solutions | Global Supply Chain & Technical Support

**High-Performance Solutions for Industrial & Architectural Needs**

CORROSION-RESISTANT · EASY INSTALLATION · HIGH LOAD BEARING

Apex Metal Solutions Limited
whatsapp business account

EMAIL: LOU.EMILY@HOTMAIL.COM

Version: V1.0 | Date: [2026-01-01]

As a global leading high-quality steel grating supplier, offering welded, pressure-locked, press-locked, swage-locked grating, stair treads and custom products

Compliant with ANSI/NAAMM, EN 10045, ASTM A123, ISO 9001, we have advanced facilities, global service (Europe, N. America, SE Asia, Middle East), Fast delivery and 24/7 support—your trusted metal solution partner!

We are committed to being your trusted metal solution provider worldwide.
Contact us now!

# Table of Contents

# INTRODUCTION

## 1.1 What is Steel Grating?

Steel grating is a grid-structured product composed of load-bearing flat bars and cross bars, It is widely used in industrial, architectural, and infrastructure projects for its excellent mechanical performance and durability.

## 1.2 Core Advantages

1. ◆ High Load-Bearing Capacity: Meets international standards for heavy-duty applications
2. ◆ Superior Corrosion Resistance: Galvanized/stainless steel options for harsh environments
3. ◆ Easy Installation & Maintenance: Lightweight design with standard fixing accessories
4. ◆ Excellent Drainage/Ventilation: Open grid structure reduces water accumulation and improves air circulation
5. ◆ Low Maintenance Cost: The product itself requires very little maintenance, greatly reducing maintenance costs.
6. ◆ Highly customizable: Production are customized based on drawings, ensuring the finished product fully meets the installation needs of the construction site.

## 1.3 Global Application Scope

Industrial Plants · Bridges & Tunnels · Commercial Buildings · Public Infrastructure · Chemical & Food Industries · Maintenance cover · Drainage walkway

# PRODUCT RANGE

## 2.1 Product Classification

| Product Type | Manufacturing Process | Material | Key Feature | Application |
|---|---|---|---|---|
| Welded Steel Grating | Forge welding/ Manual welding | Carbon Steel /Stainless Steel | High stability, cost-effective | Industrial platforms, stair treads |
| Press-Locked Grating | Manual welding | Carbon Steel /Stainless Steel | High load capacity, anti-slip | Heavy-duty workshops, bridge flooring |
| Swage-Locked Grating | Swaging & locking | Carbon Steel /Stainless Steel | Corrosion-resistant, aesthetic | Food plants, chemical facilities |
| Grating Steps | Forge welding/ Manual welding | Carbon Steel /Stainless Steel el | Corrosion-resistant, aesthetic | Stair treads |
| Customized Grating | Tailored process | As per requirement | Flexible size/structure | Special-shaped projects, unique needs |

## 2.2 Product Pictures

Welded Steel Grating

Press-Locked Grating

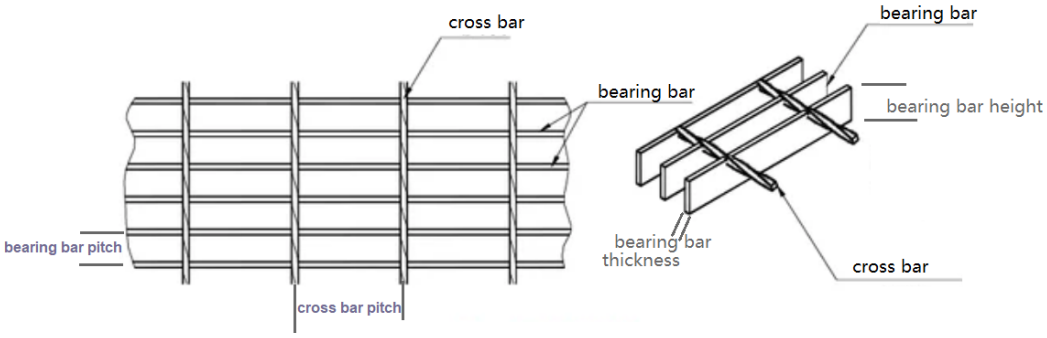
Swage-Locked Grating

Additional Notes：Surface Treatment Options（Hot-Dip Galvanizing / Electroplating / Painting/ Polishing）

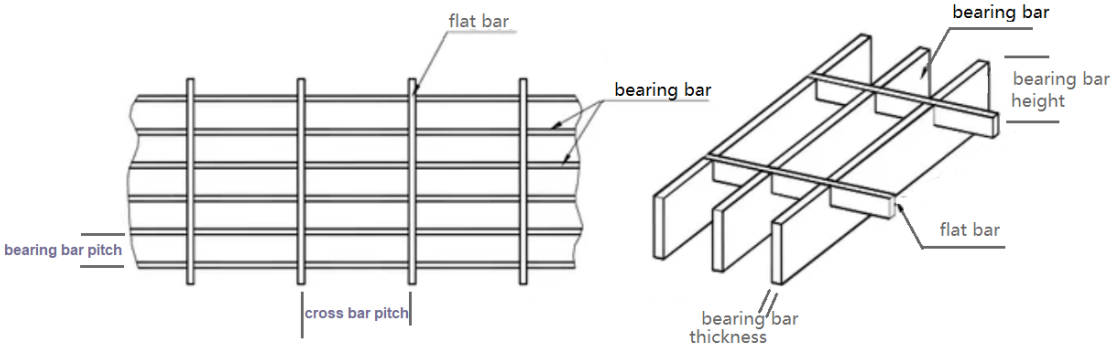
# TECHNICAL SPECIFICATIONS

## 3.1 Basic Parameters

| Parameter | Unit | Range | Standard |
|---|---|---|---|
| Flat Bar Size | mm | 20x2 ~ 100x12 | YB/T 4001-2019<br>ISO 14122-3:2021<br>ISO 10044:2019<br>ANSI/NAAMM MBG 531-2020<br>EN 124:2019<br>EN ISO 14122-3<br>BS 4592-1:2006<br>AS 3996-2019 |
| Cross Bar Size | mm | 5x5 ~ 16x16 | |
| Bar Pitch (Load-Bearing) | mm | 20 / 30 / 50 / 100 | |
| Bar Pitch (Cross) | mm | 20 / 30 / 50 / 100/ 150/ 200 | |
| Weight per Square Meter | kg/㎡ | 15 ~ 150 | |




Normal steel grating




Press locked grating

# 3.2 Performance Parameters

## Load-Bearing Capacity

**Safe Working Loads & Deflection Tables for 30mm pitch**

| Bearing bar mm | Units | MAXIMUN UNIFORMLY DISTRIBUTED LOAD IN KN/M² AND MAXIMUN DEFLECTION IN MM @ INDIVIDUAL CLEAR SPANS SHOWN IN MM | | | | | |
|---|---|---|---|---|---|---|---|
| | | 300 | 600 | 1000 | 1200 | 1500 | 1800 |
| | kn/m² | 108.67 | 24.90 | 4.57 | | | |
| 20X3 | D (mm) | 0.80 | 2.95 | 5.25 | | | |
| | kn/m² | 181.13 | 41.55 | 7.86 | 5.28 | | |
| 20x5 | D (mm) | 0.80 | 2.95 | 5.25 | 6.00 | | |
| | kn/m² | 172.52 | 38.95 | 9.25 | 6.19 | 3.17 | |
| 25X3 | D (mm) | 0.65 | 2.36 | 5.25 | 6.00 | 7.50 | |
| | kn/m² | 287.56 | 64.93 | 15.41 | 10.32 | 5.28 | |
| 25x5 | D (mm) | 0.65 | 2.36 | 5.25 | 6.00 | 7.50 | |
| | kn/m² | 306.27 | 68.00 | 19.22 | 12.78 | 6.41 | 3.59 |
| 32X3 | D (mm) | 0.55 | 1.96 | 5.25 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 510.46 | 113.34 | 32.05 | 21.32 | 10.70 | 6.00 |
| 32x5 | D (mm) | 0.55 | 1.96 | 5.25 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 378.91 | 76.35 | 24.93 | 17.00 | 8.70 | 5.03 |
| 35X3 | D (mm) | 0.52 | 1.68 | 6.16 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 631.54 | 127.26 | 41.55 | 28.34 | 14.51 | 8.39 |
| 35x5 | D (mm) | 0.52 | 1.68 | 6.16 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 543.95 | 99.73 | 32.56 | 24.93 | 12.99 | 7.52 |
| 40X3 | D (mm) | 0.50 | 1.47 | 4.51 | 5.89 | 7.50 | 9.00 |
| | kn/m² | 815.88 | 166.22 | 54.27 | 41.55 | 21.66 | 12.53 |
| 40x5 | D (mm) | 0.50 | 1.47 | 4.51 | 5.89 | 7.50 | 9.00 |
| | kn/m² | 1084.35 | 210.37 | 68.69 | 52.59 | 30.84 | 17.85 |
| 45X5 | D (mm) | 0.42 | 1.31 | 5.24 | 6.63 | 8.25 | 9.75 |
| | kn/m² | 1416.74 | 259.72 | 84.80 | 64.93 | 41.55 | 24.48 |
| 50x5 | D (mm) | 0.40 | 1.18 | 3.61 | 4.71 | 7.37 | 9.00 |
| | kn/m² | 1791.52 | 314.26 | 102.61 | 78.56 | 50.28 | 32.59 |
| 55X5 | D (mm) | 0.38 | 1.07 | 3.28 | 4.29 | 6.70 | 9.00 |
| | kn/m² | 2142.34 | 374.00 | 122.12 | 93.50 | 59.84 | 41.55 |
| 60x5 | D (mm) | 0.35 | 0.98 | 3.01 | 3.93 | 6.14 | 8.84 |

# Load-Bearing Capacity

## Safe Working Loads & Deflection Tables for 40mm pitch

| Bearing bar mm | Units | MAXIMUN UNIFORMLY DISTRIBUTED LOAD IN KN/M² AND MAXIMUN DEFLECTION IN MM @ INDIVIDUAL CLEAR SPANS SHOWN IN MM | | | | | |
|---|---|---|---|---|---|---|---|
| | | 300. | 600 | 1000 | 1200 | 1500 | 1800 |
| | kn/m² | 126.95 | 31.74 | 7.88 | 4.56 | 2.33 | 1.35 |
| 25X3 | D (mm) | 0.65 | 2.61 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 211.59 | 52.90 | 13.13 | 7.60 | 3.89 | 2.25 |
| 25x5 | D (mm) | 0.65 | 2.61 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 182.81 | 45.70 | 13.61 | 7.88 | 4.03 | 2.33 |
| 30X3 | D (mm) | 0.54 | 2.18 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 304.68 | 76.17 | 22.69 | 13.13 | 6.72 | 3.89 |
| 30x5 | D (mm) | 0.54 | 2.18 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 414.71 | 103.68 | 36.03 | 20.85 | 10.67 | 6.18 |
| 35x5 | D (mm) | 0.47 | 1.86 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 541.66 | 135.41 | 48.75 | 31.12 | 15.93 | 9.22 |
| 40x5 | D (mm) | 0.41 | 1.86 | 5.00 | 6.00 | 7.50 | 9.00 |
| | kn/m² | 846.34 | 211.59 | 76.17 | 52.90 | 31.12 | 18.01 |
| 50X5 | D (mm) | 0.33 | 1.31 | 3.63 | 5.22 | 7.50 | 9.00 |
| | kn/m² | 1100.00 | 275.00 | 90.00 | 68.75 | 44.00 | 30.64 |
| 60x5 | D (mm) | 0.25 | 1.00 | 3.05 | 3.99 | 6.23 | 9.00 |

## Safe Working Loads & Deflection Tables for 60mm pitch

| Bearing bar mm | Units | MAXIMUN UNIFORMLY DISTRIBUTED LOAD IN KN/M² AND MAXIMUN DEFLECTION IN MM @ INDIVIDUAL CLEAR SPANS SHOWN IN MM | | | | | |
|---|---|---|---|---|---|---|---|
| | | 300 | 600 | 1000 | 1200 | 1500 | 1800 |
| | kn/m² | 126.89 | 31.56 | 10.16 | 7.72 | 4.86 | 3.31 |
| 25x5 | D (mm) | 0.54 | 2.57 | 7.88 | 10.29 | 16.08 | 23.16 |
| | kn/m² | 124.77 | 31.06 | 10.02 | 7.63 | 4.81 | 3.31 |
| 32x3 | D (mm) | 0.50 | 2.57 | 7.88 | 10.29 | 16.08 | 23.16 |
| | kn/m² | 207.99 | 51.80 | 16.74 | 12.75 | 8.06 | 5.52 |
| 32X5 | D (mm) | 0.50 | 2.01 | 6.15 | 8.04 | 12.56 | 18.09 |
| | kn/m² | 411.49 | 102.61 | 33.27 | 25.39 | 16.12 | 11.09 |
| 45X5 | D (mm) | 0.35 | 1.43 | 4.37 | 5.72 | 8.93 | 12.87 |
| | kn/m² | 614.80 | 153.39 | 49.81 | 38.04 | 24.20 | 16.68 |
| 55x5 | D (mm) | 0.29 | 1.17 | 3.58 | 4.68 | 7.31 | 10.53 |

# APPLICATIONS

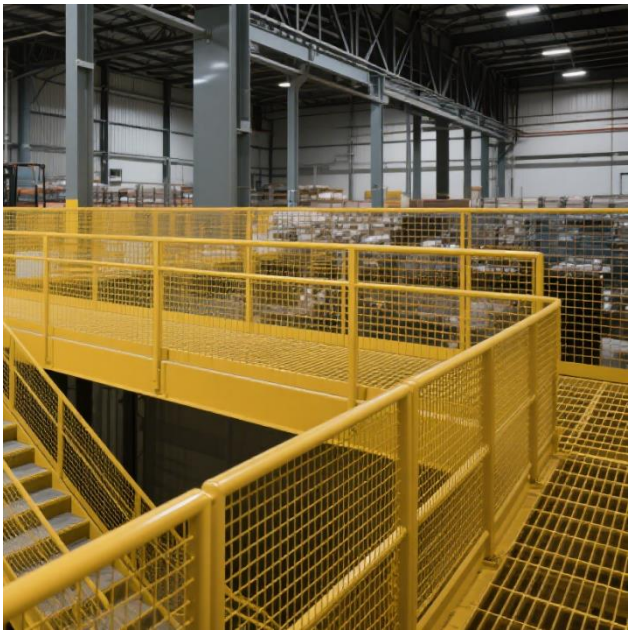
## 4.1 Industrial Applications

### Industrial Platforms

1. Specifically designed for factory work platforms, it features high load capacity and provides easy access to equipment, making maintenance operations more efficient and hassle-free.
2. An optimal choice for factory work platforms: it combines outstanding load-bearing capability with convenient access, simplifying equipment maintenance procedures significantly.

### Chemical Plants

1. Crafted from galvanized or stainless steel, our metal grating boasts exceptional chemical corrosion resistance, delivering an extended service life even in the harshest industrial environments.
2. Galvanized and stainless-steel grating excel in chemical erosion resistance, ensuring prolonged durability and reliable performance in severe operating conditions.



## 4.2 Architectural & Infrastructure

Stair Treads & Landings

3. The anti-slip surface design effectively minimizes accident risks, making it an ideal choice for both commercial and industrial building applications.
4. Featuring a specialized anti-slip surface, this product significantly reduces the potential for slips and falls, and is perfectly suited for use in commercial and industrial premises.
5. Our engineered anti-slip surface delivers reliable accident risk reduction, catering to the rigorous safety requirements of commercial and industrial buildings.

Bridge Flooring

6. Lightweight yet exceptionally durable, it effectively reduces structural load while guaranteeing absolute traffic safety.
7. Boasting an optimal balance of light weight and robust durability, this product minimizes structural burden without compromising traffic safety standards.

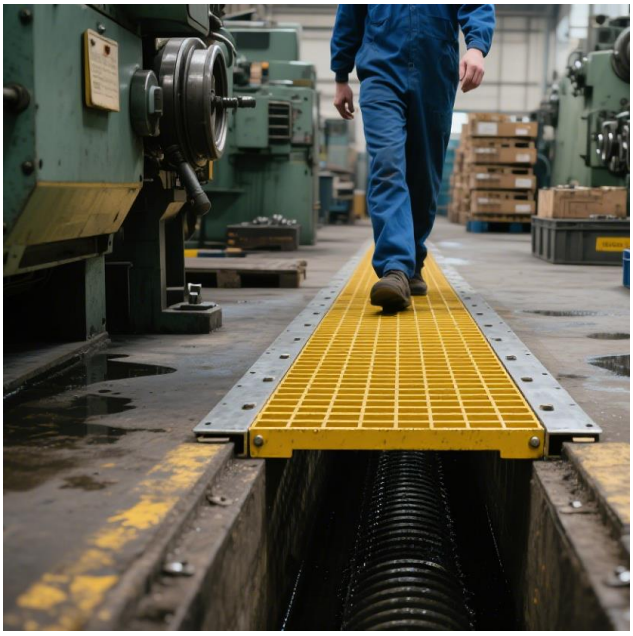
# 4.3 Special Applications

### Drainage Systems

1. The open grid structure ensures rapid and unobstructed water drainage, making it an ideal choice for parking garages, urban sewers, and other high-flow drainage scenarios.
2. Featuring an open grid design, this product delivers fast, efficient water runoff—a perfect solution for parking garages and urban sewer systems where quick drainage is critical.

### Food Processing Facilities

1. Crafted from premium stainless steel, this product fully complies with strict food hygiene standards, boasting effortless cleaning and exceptional corrosion resistance for long-lasting use.
2. Made of food-grade stainless steel that meets international hygiene requirements, it is not only easy to clean and maintain but also highly resistant to corrosion, ensuring safe and durable performance.

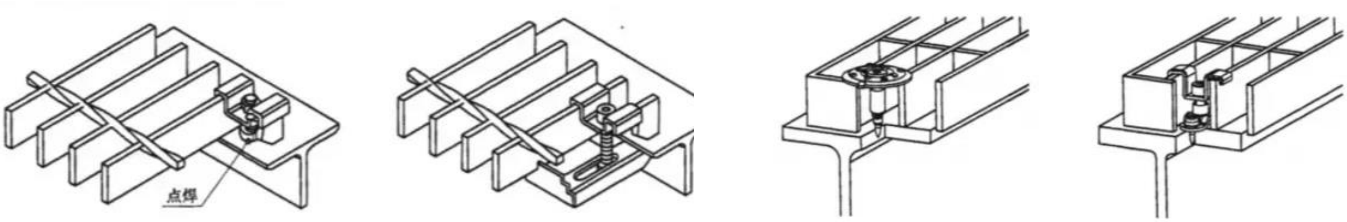


# INSTALLATION & MAINTENANCE

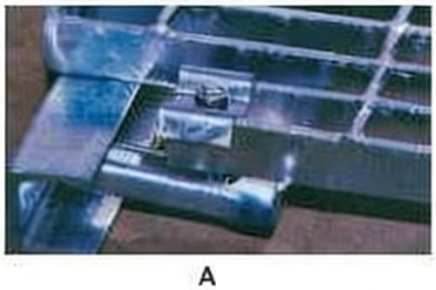
## 5.1 Installation Steps

1. Prepare the support structure (ensure flatness ≤ 3mm/m)
2. Lay the steel grating on the support beam (leave 5-10mm expansion gap)
3. Fix with clips/bolts (1 clip per 500mm length for safety)
4. Check levelness and load-bearing stability

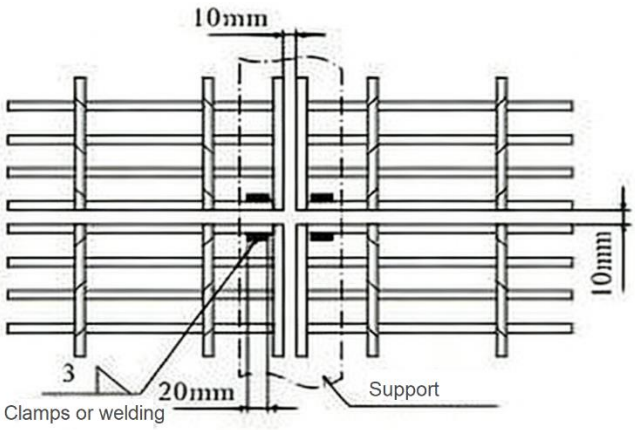
## 5.2 Installation Diagram

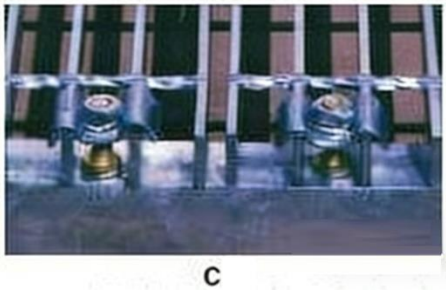










# 5.3 Maintenance Guidelines

### Maintenance Guidelines for Steel Grating

1. Regular Inspection

   Perform a full-scale inspection of the steel grating assembly on a biannual basis. Focus on verifying the integrity of fasteners for signs of loosening or disengagement, and examine the grating surface, weld joints, and perimeter edges for evidence of corrosion, structural deformation, or weld failure. All identified irregularities shall be rectified promptly with appropriate remedial actions.

2. Cleaning Protocol

   Remove surface contaminants including dust, oil residues, and particulate debris by thoroughly rinsing the grating with high-pressure water. Critical Notice: Acidic cleaning agents are strictly prohibited for use on galvanized steel grating. Such substances will compromise the integrity of the galvanized protective layer, thereby inducing secondary corrosion of the substrate material.

3. Corrosion Remediation

   In the event of galvanized coating damage, peeling, or base metal exposure, first abrade and clean the affected area to eliminate all rust and foreign contaminants. Subsequently, apply a uniform coat of anti-rust paint to restore the protective barrier, ensuring that no section of the metal substrate is left exposed to atmospheric conditions.

4. Service Life Expectancy

   - Normal Operating Environment: Designed for a minimum service life of 10 years, applicable to dry settings free from corrosive mediums.
   - Severe Operating Environment: Guarantees a minimum service life of 5 years, suitable for high-humidity regions, coastal salt-spray zones, and industrial environments with corrosive elements.

# ORDERING GUIDE & CONTACT

## 6.1 Information, Packaging, Delivery, Payment for Order

1. Product Type (Welded/Pressure-Locked/Customized)
2. Material & Surface Treatment
3. Dimensions (Length × Width × Thickness)
4. Bar Size & Pitch
5. Quantity (Square Meters/Pieces)
6. Delivery Address & Port (for international orders)
7. Packaging: In pallet
8. Delivery Cycle: 15-20 working days (standard products) / 25-30 working days (customized products)
9. Shipping Terms: FOB / CIF / EXW (as per customer request)
10. T/T: 30% Advance Payment, 70% Balance Before Shipment
11. L/C: Acceptable for Large Orders (≥ 1000 ㎡)
12. Company Name: Apex Metal Solutions Limited
13. Address: 16-3, Ruidin International, Yuhua District, Shijiazhuang, Hebei, China
14. Tel: +86 18032206802
15. Email: lou.emily@hotmail.com
16. Website: Home - Apex Metal Solutions Limited

## Thanks for choosing us! We're looking forward to your success!

Apex Metal Solutions Limited
Your Trusted Supplier for Steel Grating
https://apexmetal.net/