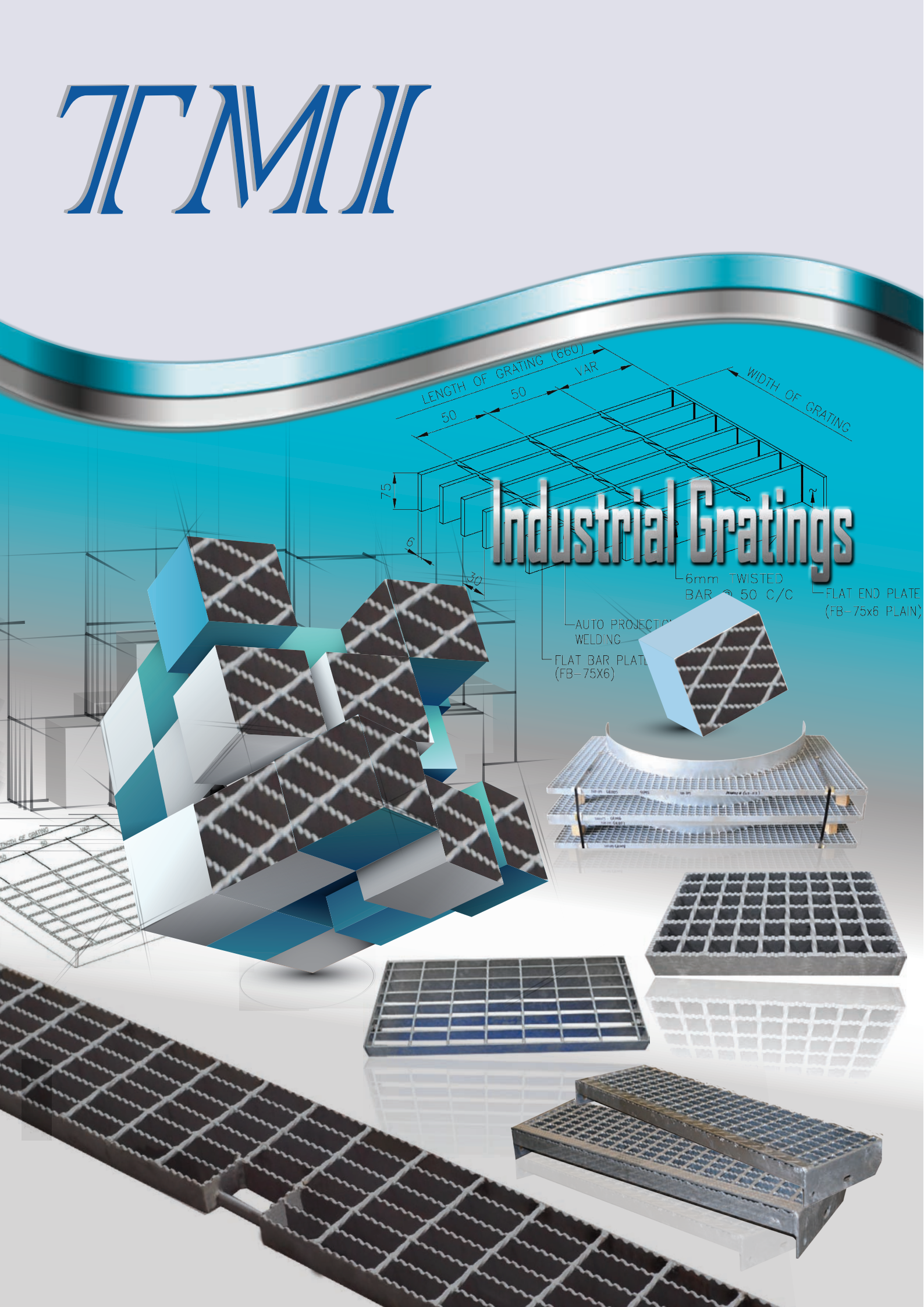
TMI

Industrial Gratings



"We, at Technical Metal Industrial Co. L.L.C. take pride in declaring the company's commitment to satisfy our customers by providing high quality products and promptly delivering them as per the agreed contractual requirements".

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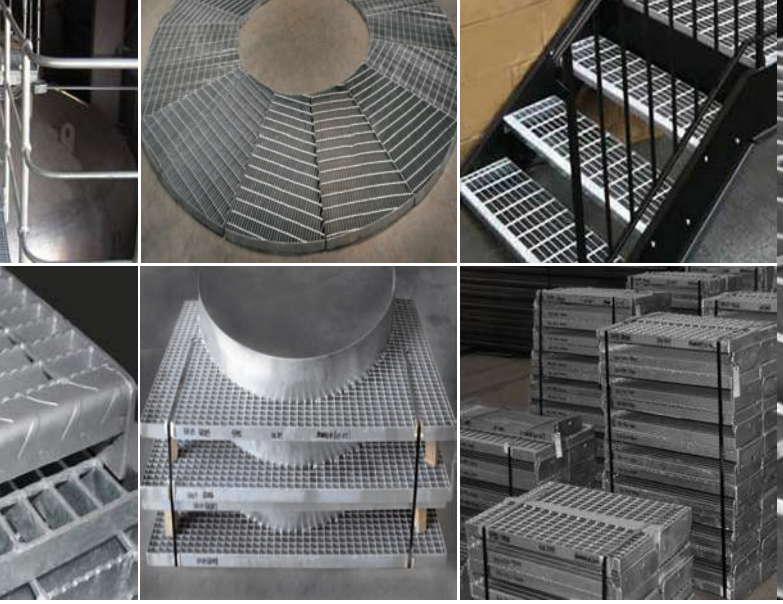
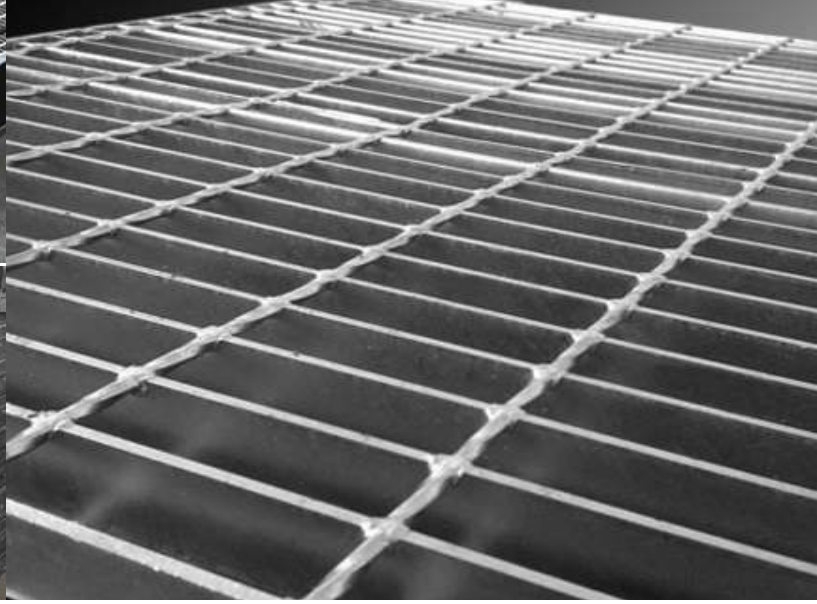



Introduction

Industrial Gratings

TMI is a privately owned company, established in 1997 in the Emirate of Abu Dhabi, United Arab Emirates and located on approximately 850,000 square feet in the Industrial City of Abu Dhabi (ICAD).

Specializes in metal processing and manufacturing of Expanded Metal & Plastering Accessories, Roll Formed Profiles, Suspended Ceiling Systems, Cable Management Systems, Metal Doors & Frames, Industrial Shelving, Metal Cabinets, Gratings, Metal Ladders and specialized building material products. We are ISO 9001, 14001 & 18001 Certified Company. Our emphasis is on quality products catering to today's competitive and demanding business environment. By introducing the latest, advanced technologies in our production lines, we ensure that our high production targets are achieved.

Furthermore, with deep knowledge in our manufacturing system capabilities, our products have achieved a very high quality standard in this industry. Having earned a reputation as a manufacturer and supplier of quality products, we fully recognize that constant improvement is a vital requirement for our continued success.

TMI Grating Factory was first established in June 2004 to satisfy the local and foreign market demands in Industrial Flooring Technology by providing the best quality and service.

TMI today manufactures floor grating, stair treads and safety handrails. Combining advanced electroforged technology and engineering skills with the best experienced team available, we can ensure the best quality and services that will go beyond your expectation.

Applications of TMI grating are virtually unlimited, coupled with our resources and experiences. We are able to supply & service the complete range of gratings for projects, regardless of the complexity or size.

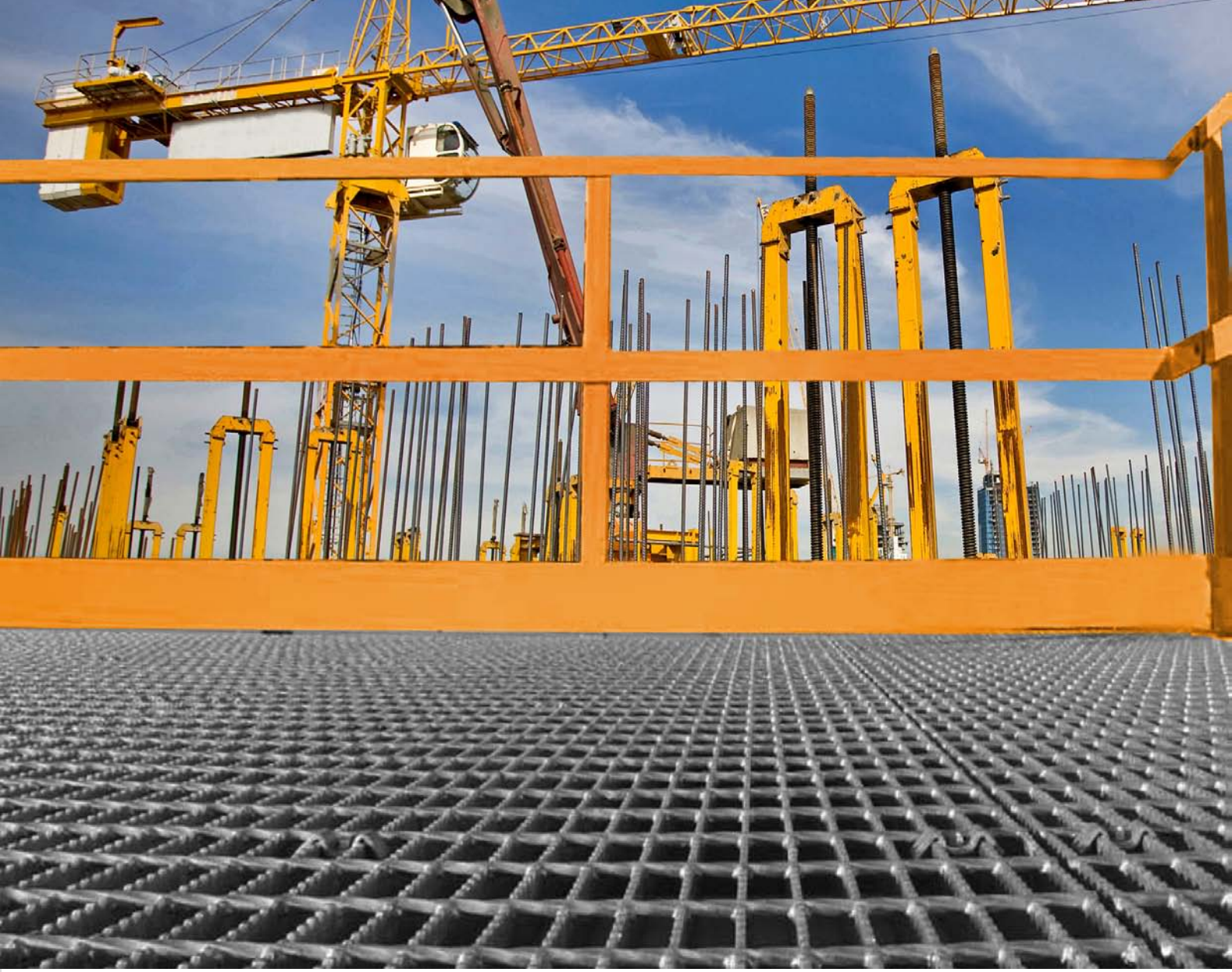
Global GROUP OHSAS 18001
Reg. No. 18O08961

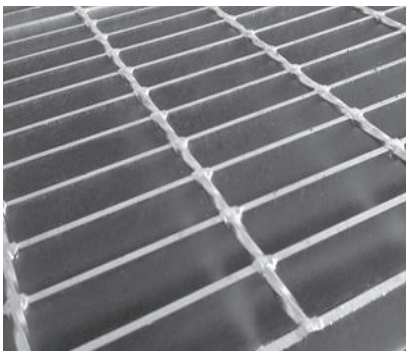
Global GROUP ISO 9001 UKAS QUALITY MANAGEMENT 039
Reg. No. 80Q08961

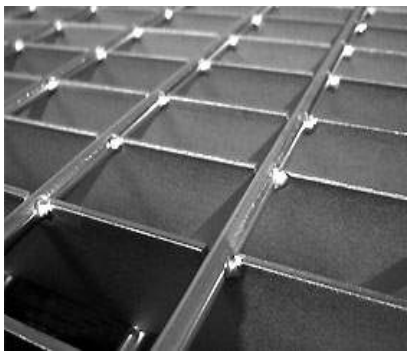
TMI® Industrial Gratings











System Description

TMI high quality grating is widely used in all the following industries such as Petrochemical plants, Onshore and Offshore Oil Rigs, Power Stations / Plants, Oil & Gas Refineries, Ship Building Industries, Water and waste treatment plants and all construction aspects of urban architectural design, roads, parks, etc...

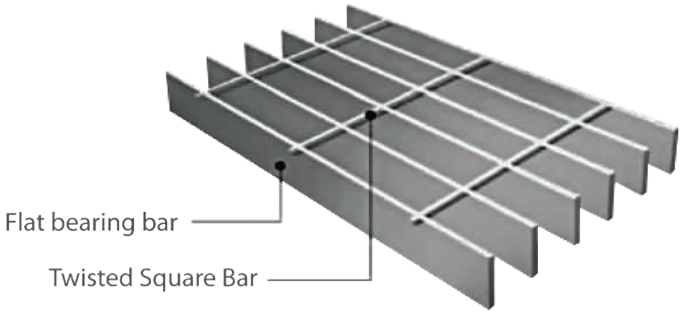
TMI®

Glossary

Electroforged Grating

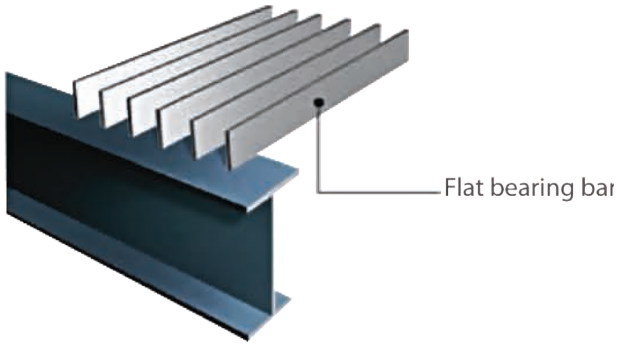
Steel net structure composed of flat bearing bars and round or twisted-square bars.

The structural elements welding process is made by electrofusion in all crossing points.



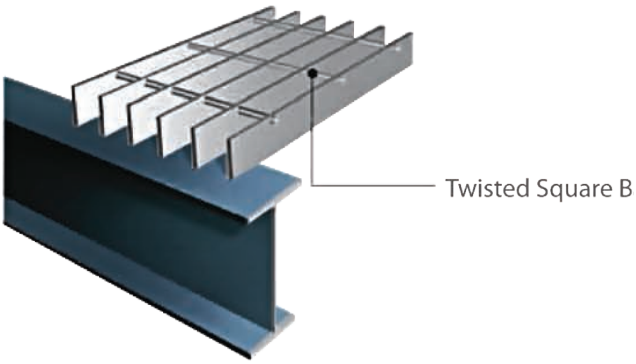
Bearing Bars

Flat Bearing Bars, combined with the twisted-square bars through electrofusion, form the grating.



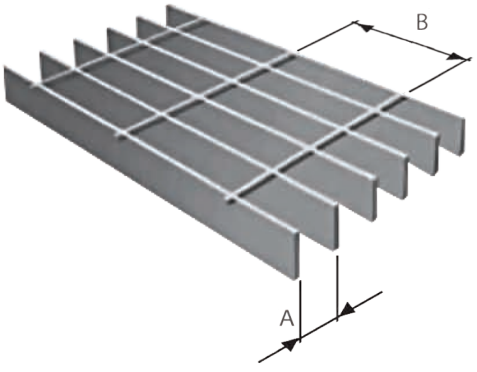
Twisted Square Bar Section

Round or twisted-square bars which, combined with the bearing bars through electrofusion, form the grating.



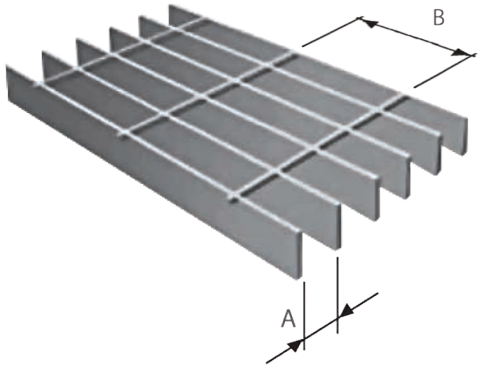
Center To Center(Pitch)

Distance between the centers of two bearing bars (A) or two twisted-square bars (B).



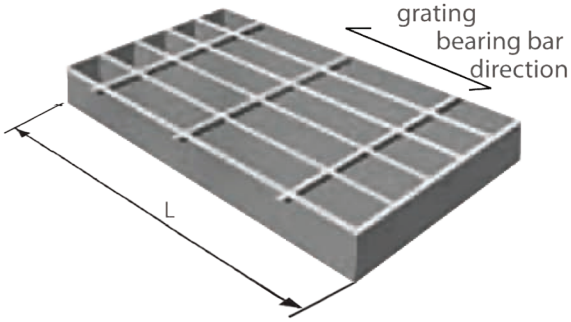
Mesh

The center-to-center distance between the bearing bars (A) and the twisted-square bars (B).



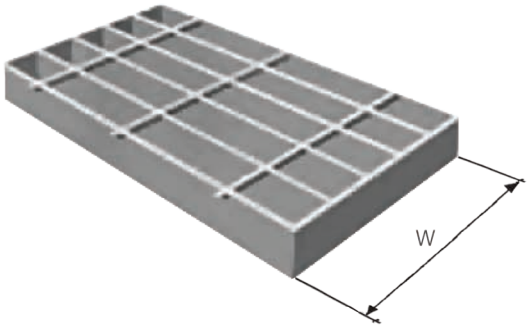
Panel Length (L)

Dimension corresponding to the maximum.
Length of the bearing bar (grating bearing bar direction).
This dimension is always called "length" (L), even if shorter than the width.



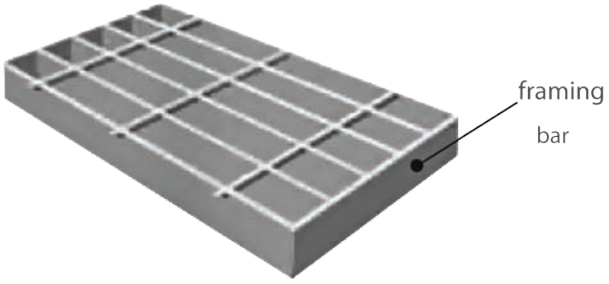
Panel Width (W)

Dimension corresponding to the maximum length of the cross-bars. This dimension is always called "width" (W), even if longer than the length.



Framing Bar

Flat bar electroforged to the cut ends of the Flat bars of the grating panel.



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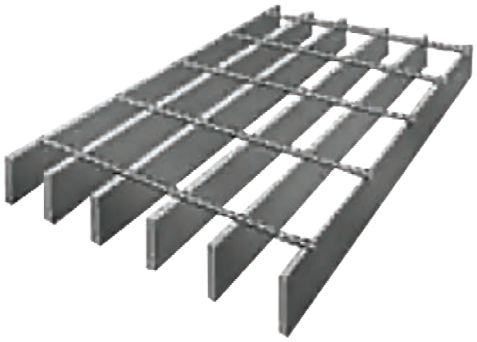
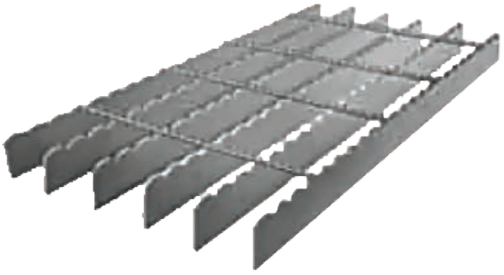
Plain Load Bearing Bar

Flat load bearing bar with plain top surface.



Serrated Load Bearing Bar

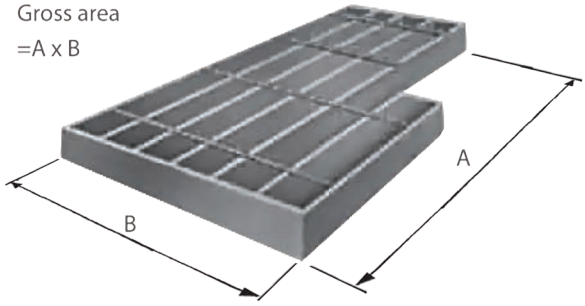
Serrated Top Surface has more anti slip resistance.



Grating Gross Area

Total area of grating including cut-out areas.

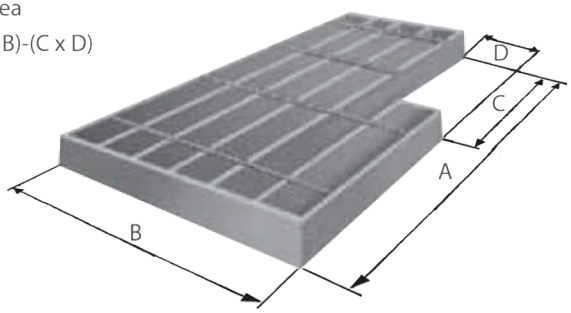
Gross area
=A x B



Grating Net Area

Total area of grating including cut-out areas.

Net area
=(A x B)-(C x D)

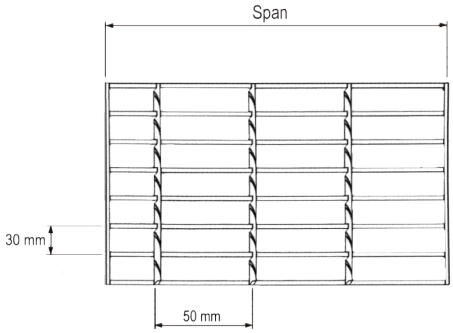


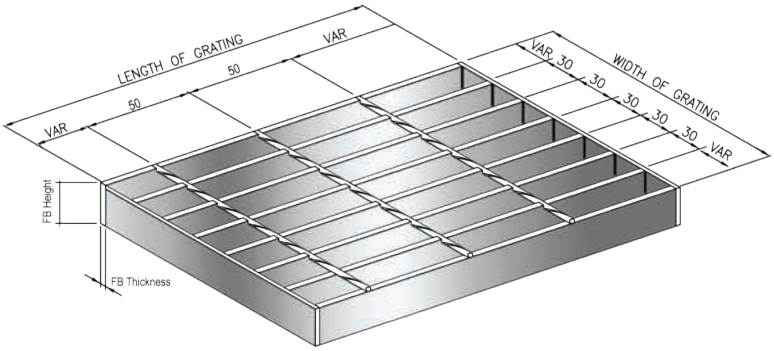
Welded Steel Grating

30mm Load Bar Pitch
41mm Load Bar Pitch
50mm Load Bar Pitch

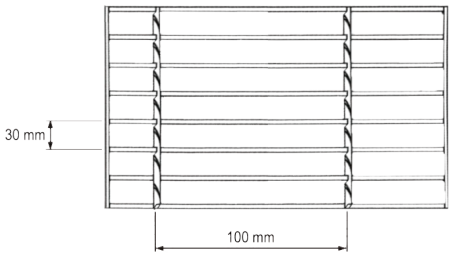
30mm Load Bar Pitch

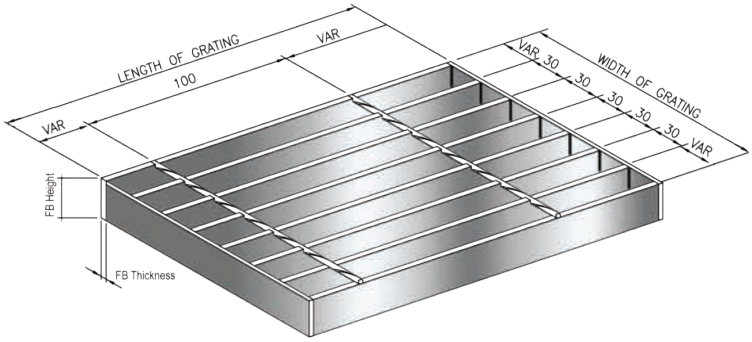
FB 30/50mm Pitch (Plain)



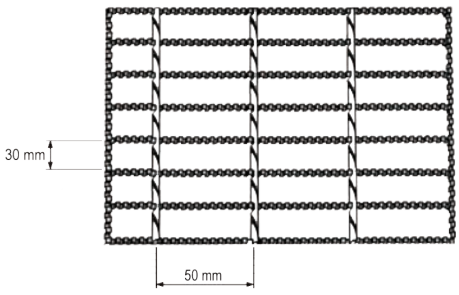


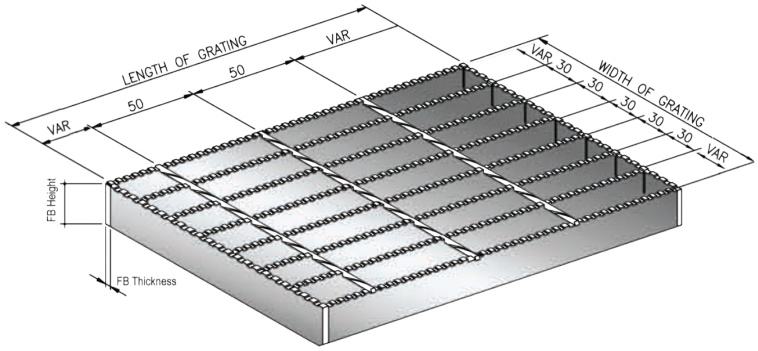
FB 30/100mm Pitch (Plain)



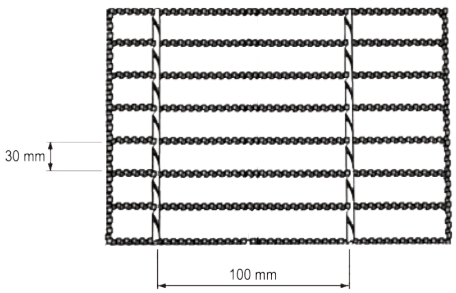


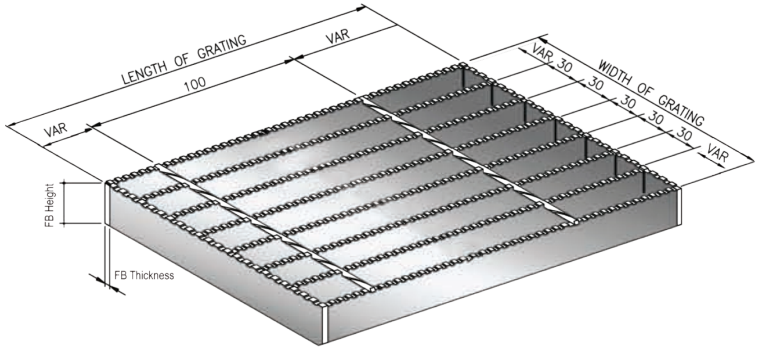
FB 30/50mm Pitch (Serrated)





FB 30/100mm Pitch (Serrated)





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The weight of TMI Fabricated Grating will increase due to addition of banding bars, toe plates, fittings and hot dip galvanizing. Typically finished weight would be12%higher than the following bare metal weights before the above add-ons.

Load Table and Deflection Data 30 mm LOAD BAR PITCH

Type	Cross Road Pitch (mm)	Weight (kg/M²)	Load Bar Size (mm)		SPAN-millimeters														
					150	300	450	600	750	900	1050	1200	1500	1800	2100	2400	2700	3000	3300	3600
TMI GR 20 3	100	19.05	20x3	U	399	100	44	25	16	11	8	6	4	3	2	2	1	1	1	1
				D	0.20	0.78	1.75	3.10	4.84	6.97	9.48	12.38	19.34	27.85	37.90	49.50	62.65	77.35	93.59	111.38
TMI GR 20 5	100	29.87	20X5	U	665	166	74	42	27	18	14	10	7	5	3	3	2	2	1	1
				D	0.20	0.78	1.75	3.10	4.84	6.97	9.48	12.38	19.34	27.85	37.90	49.50	62.65	77.35	93.59	111.38
TMI GR 25 3	100	23.11	25x3	U	623	156	69	39	25	17	13	10	6	4	3	2	2	2	1	1
				D	0.16	0.62	1.40	2.48	3.87	5.57	7.58	9.90	15.47	22.28	30.32	39.60	50.12	61.88	74.87	89.10
TMI GR 25 5	100	36.63	25x5	U	1039	260	115	65	42	29	21	16	10	7	5	4	3	3	2	2
				D	0.16	0.62	1.40	2.48	3.87	5.57	7.58	9.90	15.47	22.28	30.32	39.60	50.12	61.88	74.87	89.10
TMI GR 32 3	100	28.79	32x3	U	1021	255	113	64	41	28	21	16	10	7	5	4	3	3	2	2
				D	0.13	0.49	1.09	1.94	3.03	4.36	5.93	7.74	12.09	17.41	23.69	30.94	39.16	48.34	58.50	69.61
TMI GR 35 5	100	50.15	35x5	U	2348	570	253	142	91	63	47	36	23	16	12	9	7	6	5	4
				D	0.13	0.49	1.09	1.94	3.03	4.36	5.93	7.74	12.09	17.41	23.69	30.94	39.16	48.34	58.50	69.61
TMI GR 40 3	100	35.28	40x3	U	1596	399	177	100	64	44	33	25	16	11	8	6	5	4	3	3
				D	0.10	0.39	0.88	1.55	2.42	3.49	4.74	6.19	9.67	13.93	18.95	24.75	31.33	38.68	46.80	55.69
TMI GR 40 5	100	56.9	40X5	U	2260	665	296	166	106	74	54	42	27	18	14	10	8	7	5	5
				D	0.10	0.39	0.88	1.55	2.42	3.49	4.74	6.19	9.67	13.93	18.95	24.75	31.33	38.68	46.80	55.69
TMI GR 45 5	100	63.68	45x5	U	3366	842	374	210	135	94	69	53	34	23	17	13	10	8	7	6
				D	0.09	0.35	0.78	1.38	2.15	3.10	4.22	5.50	8.60	12.38	16.85	22.00	27.85	34.38	41.60	49.50
TMI GR 50 5	100	70.44	50x5	U	4156	1039	462	260	166	115	85	65	42	29	21	16	13	10	9	7
				D	0.08	0.31	0.70	1.24	1.94	2.79	3.79	4.95	7.74	11.14	15.16	19.80	25.06	30.94	37.44	44.55
TMI GR 55 5	100	72.2	55x5	U	5028	1257	559	314	201	140	103	79	50	35	26	20	16	13	10	9
				D	0.08	0.29	0.64	1.13	1.76	2.54	3.45	4.50	7.04	10.13	13.79	18.00	22.79	28.13	34.04	40.50
TMI GR 65 5	100	90.73	65x5	U	7023	1756	780	439	281	195	143	110	70	49	36	27	22	18	15	12
				D	0.06	0.24	0.54	0.96	1.49	2.15	2.92	3.81	5.95	8.57	11.67	15.24	19.28	23.80	28.80	34.27

Note
Spans in the shaded area above have a deflection of more than 5mm for 4 kPa uniformly distributed load which exceeds the deflection limits for pedestrian comfort.

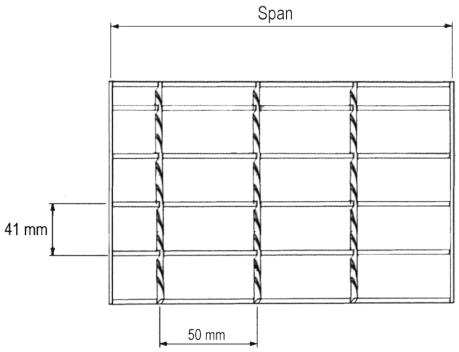
U= Safe superimposed uniformly distributed load in kiloNewton / meter square (kN/m^2).
D= Deflection in millimeters

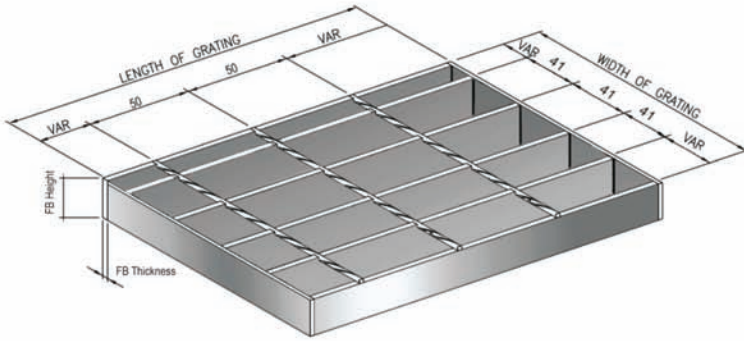
Serrated Conversation Table

Load Bar Size (mm)	25x3	25x5	32x3	35x5	40x3	40x5	45x5	50x5	55x5	65x5
Multiply U & C by	0.791	0.797	0.832	0.836	0.868	0.872	0.882	0.887	0.903	0.922
Multiply Deflection by	1.122	1.119	1.093	1.088	1.077	1.072	1.069	1.065	1.048	1.041

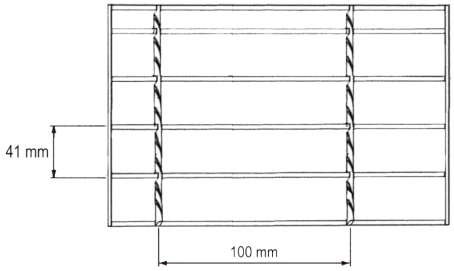
41mm Load Bar Pitch

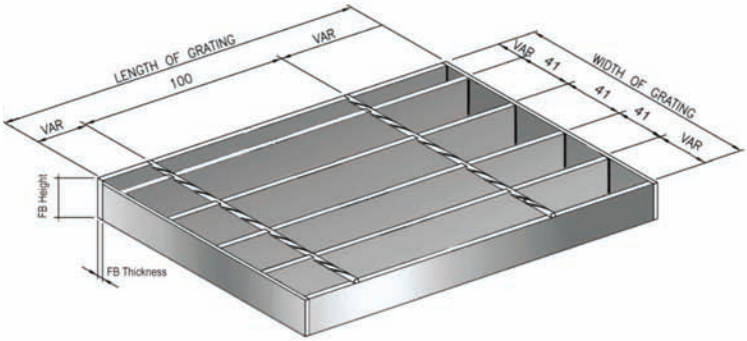
FB 41/50mm Pitch (Plain)



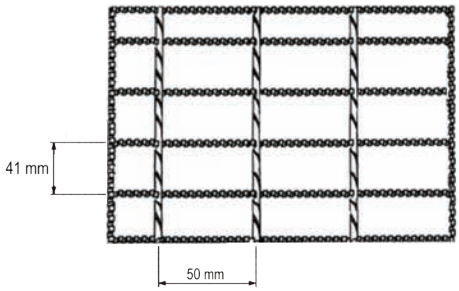


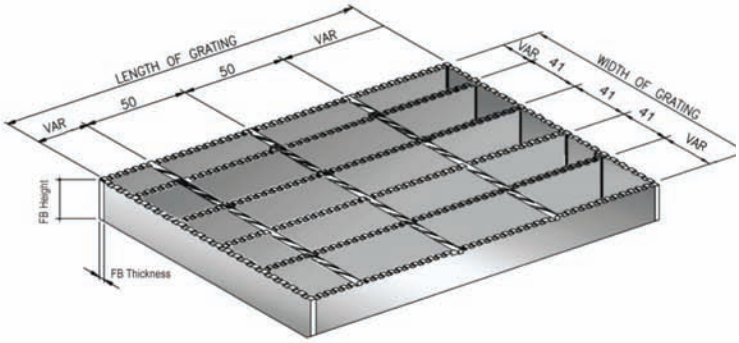
FB 41/100mm Pitch (Plain)



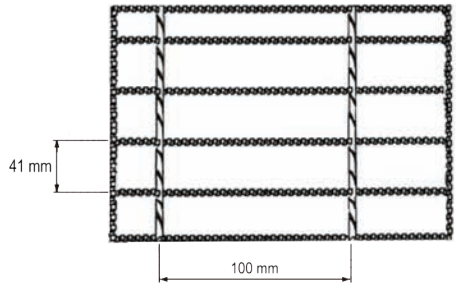


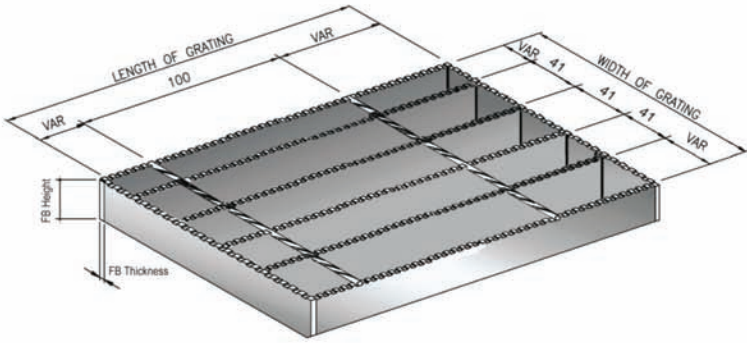
FB 41/50mm Pitch (Serrated)





FB 41/100mm Pitch (Serrated)



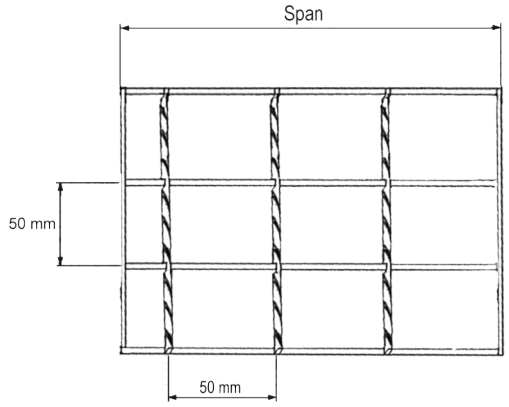


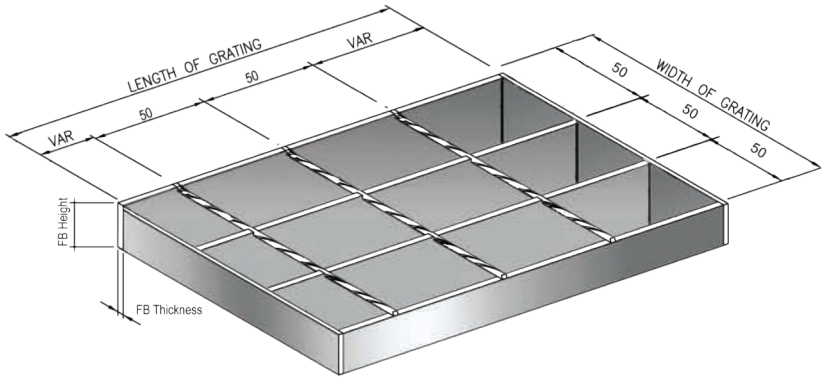
- Load Calculations available upon request.

TMI®

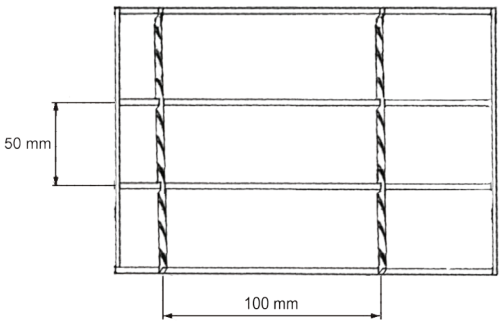
50mm Load Bar Pitch

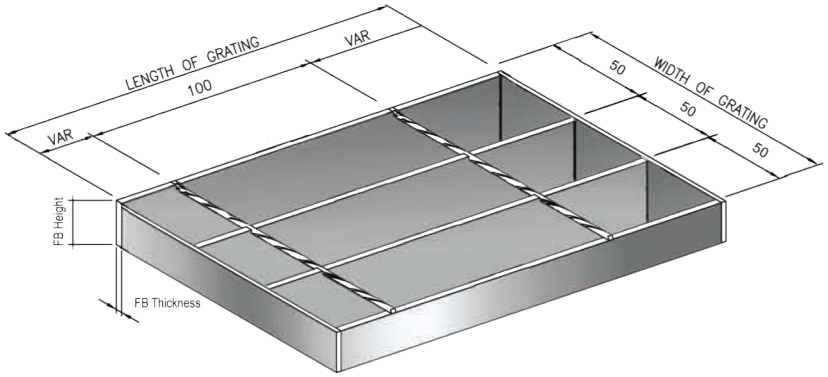
FB 50/50mm Pitch (Plain)



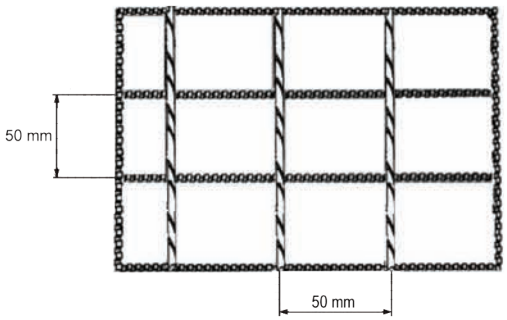


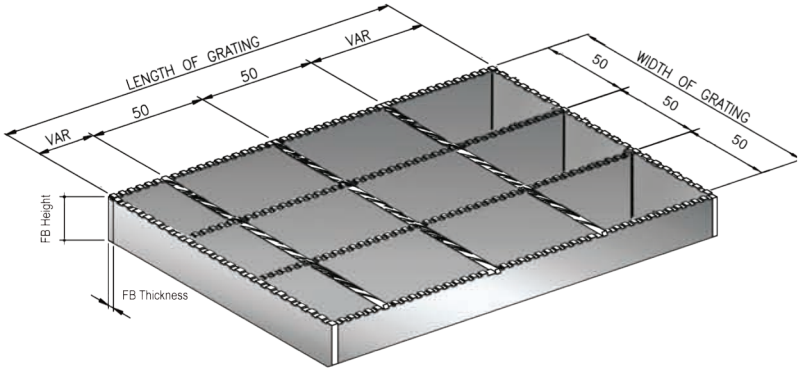
FB 50/100mm Pitch (Plain)



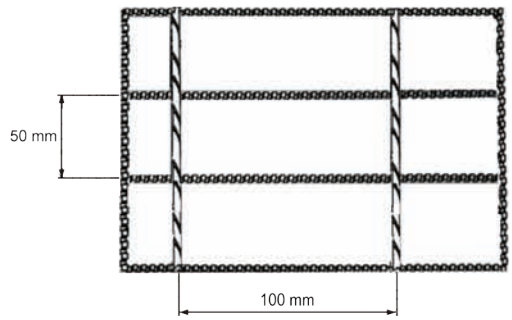


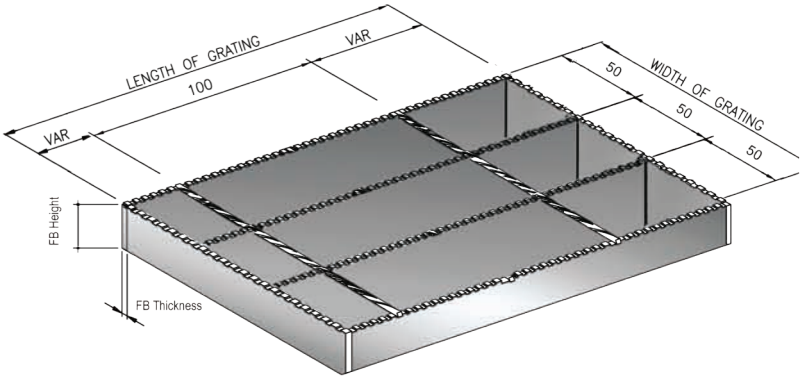
FB 50/50mm Pitch (Serrated)





FB 50/100mm Pitch (Serrated)

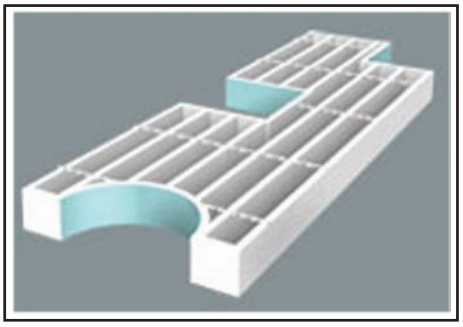




- Load Calculations available upon request.

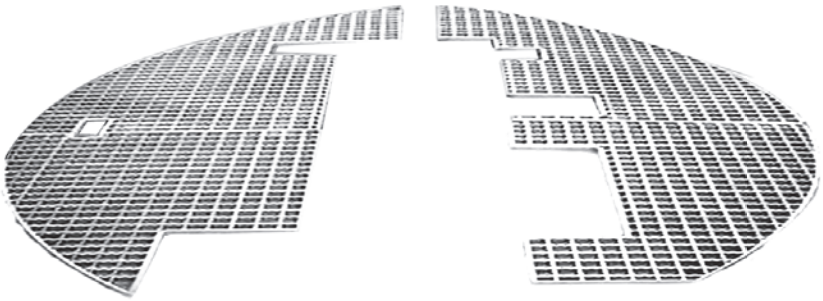
Tailor Made / Cut-Out Grating

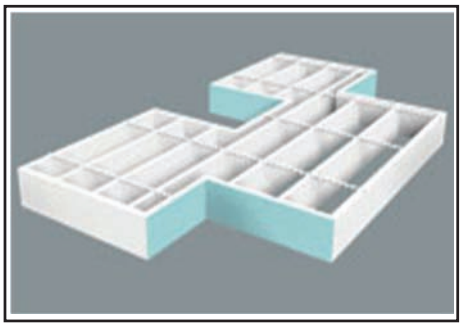
Straight Cut-Out Shapes
Straight and Annular Cut-Out Shapes
Curve or Annular Cut-out Shapes



CUT-OUT

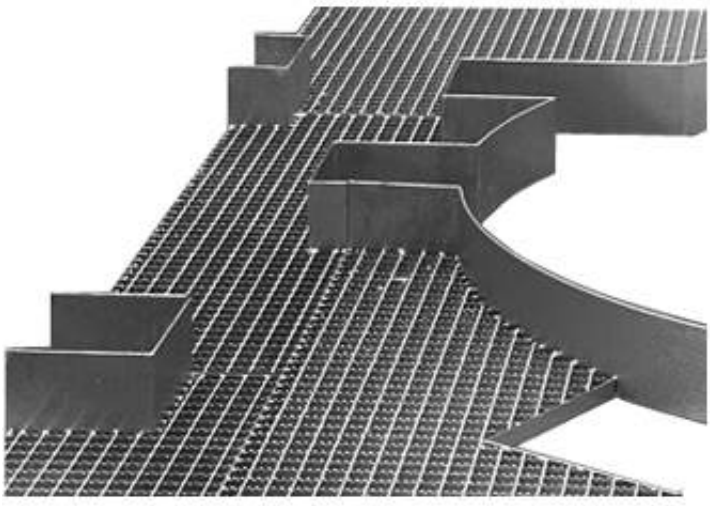
Area of grating cut-out for pipes and columns to pass through.

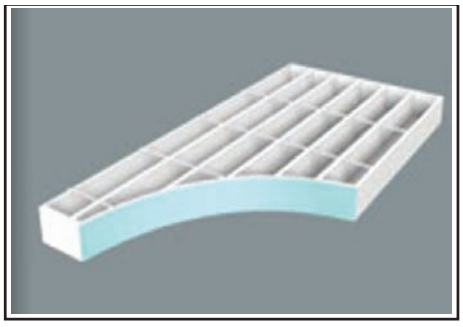




STRAIGHT SHAPING

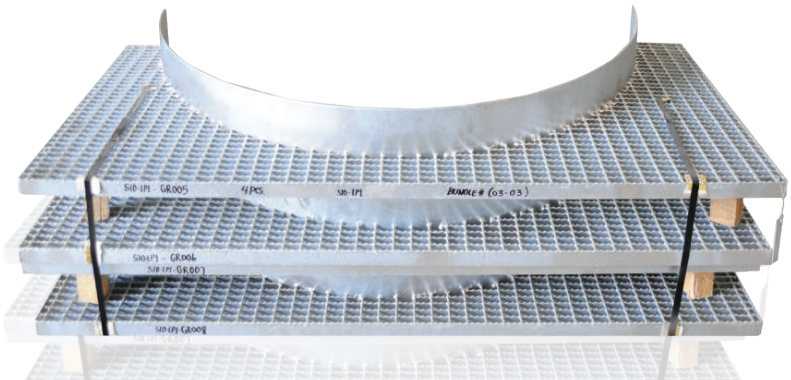
The cut-out with straight edges.





CURVE SHAPING

Part of cut-out which is curved.



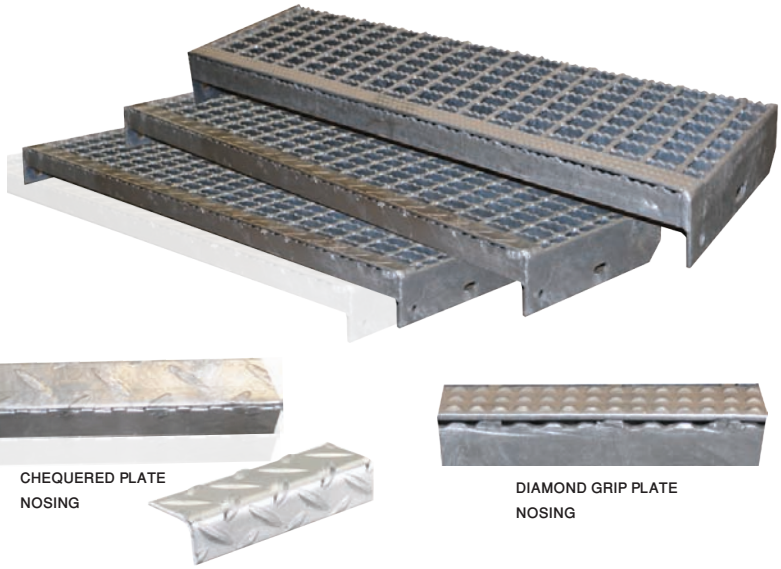
Stair Treads

Bolted Steel Stair Tread No Nosing
Bolted Steel Stair Tread with Nosing
Welded Steel Stair Tread No Nosing
Welded Steel Stair Tread With Nosing

Stair Treads

Can be manufactured according to the customer need with basically any combination of pitch size, bearing bar and profile.

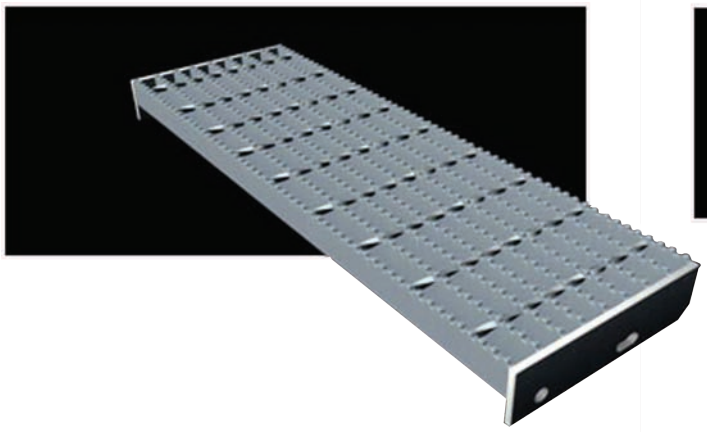
Stair tread is made of steel grating and widely used for different types of staircases, featuring easy installation, strong structure and aesthetic appearance and good water permeability. We can fabricate according to customer's sizes.



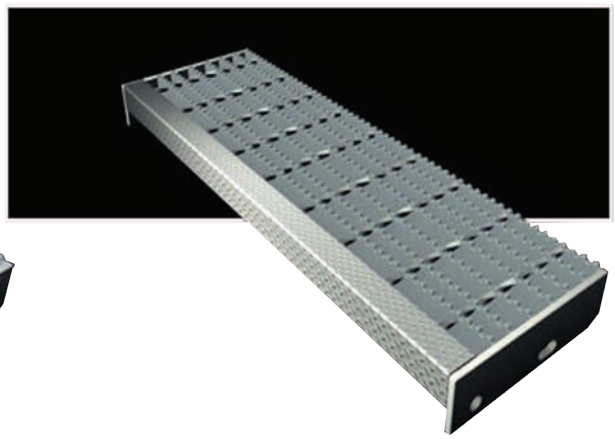
CHEQUERED PLATE NOSING

DIAMOND GRIP PLATE NOSING

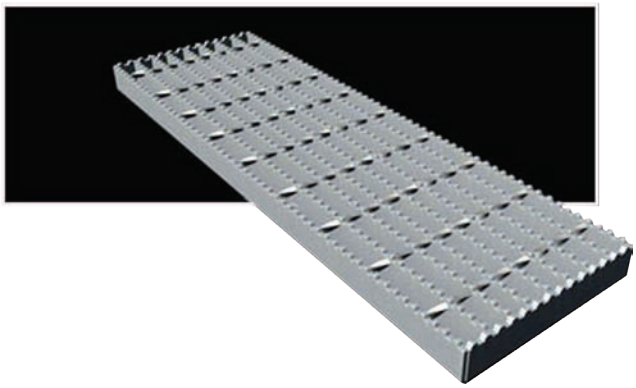
BOLTED STEEL STAIR TREAD WITHOUT NOSING



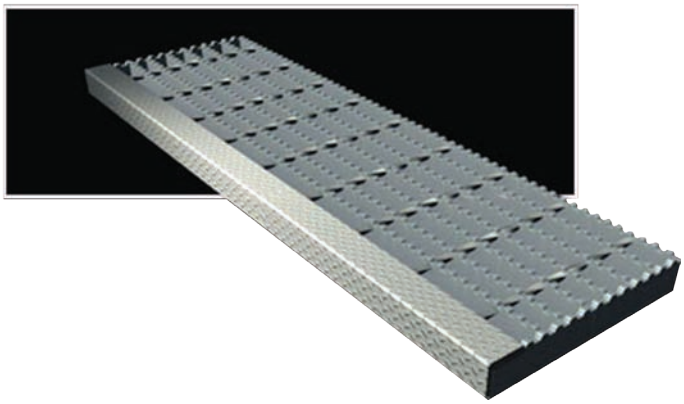
BOLTED STEEL STAIR TREAD WITH NOSING



WELDED STEEL STAIR TREAD WITHOUT NOSING



WELDED STEEL STAIR TREAD WITH NOSING



Grating Tolerance

Manufacturing Tolerance
Installation Clearance
Stair Treads Tolerance

References

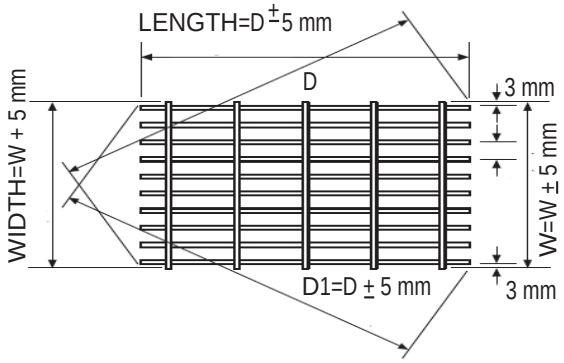
MATERIALS STANDARD :
ASTMA36 / A36M
S275JR according to
ASTM A1011 / BSEN 10025.

MANUFACTURING STANDARD :
BS4592-1 : 2006
NAAM MBG 531 - 00.

GALVANIZING STANDARD:
ASTM A123 BSEN ISO1461

Manufacturing Tolerance

ALL DIMENSIONS ARE MAXIMUM PERMISSABLE TOLERANCES

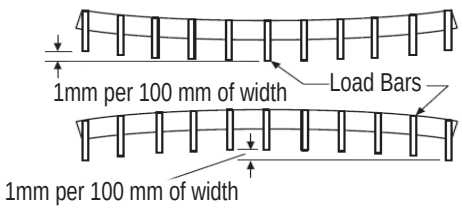


Fabrication Welding.
Binding bars and attachments are welded with minimum 3 mm fillet weld to one side of :

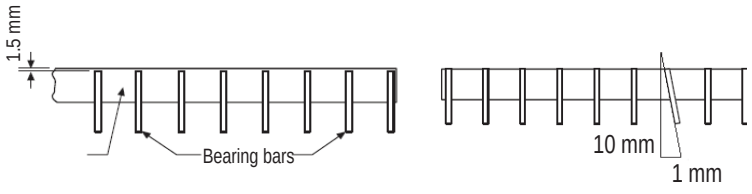
Every 4th load bar on 30 mm load bar pitch.
Every 3rd load bar on 41 mm load bar pitch.

W & W1 are overall dimensions across the Load Bar at opposite ends of panel.

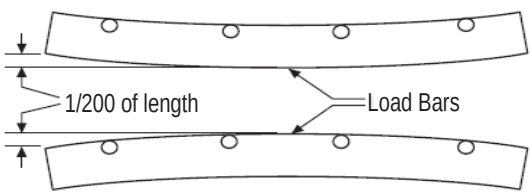
TRANSVERSE BOW
(before fastening to supports)



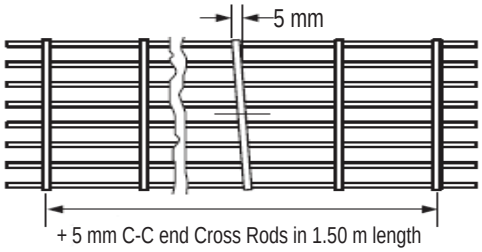
CROSS ROD LOCATION AND LOAD BAR LEAN



LONGITUDINAL BOW

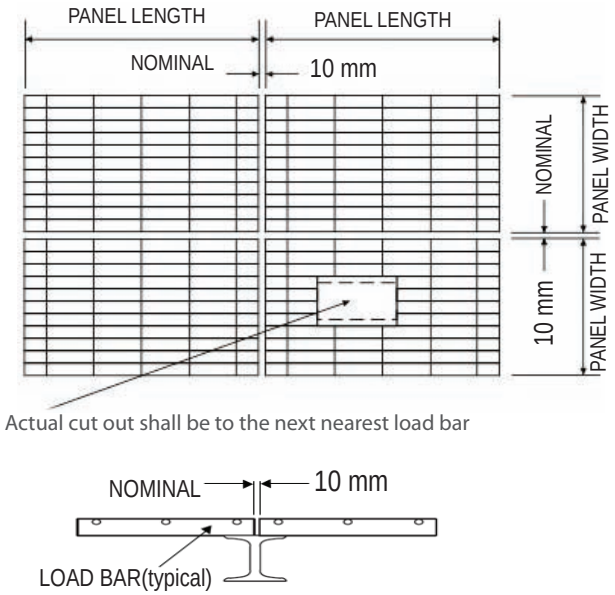


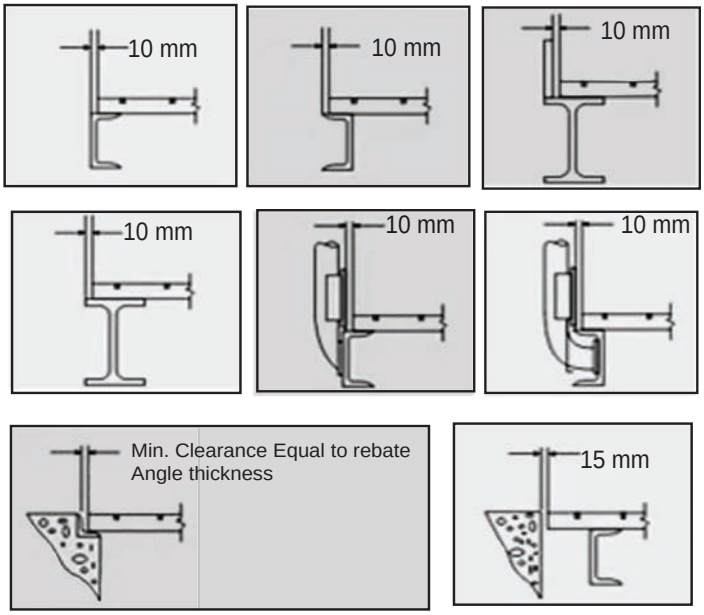
CROSS ROD ALIGNMENT AND SPACING



TMI®

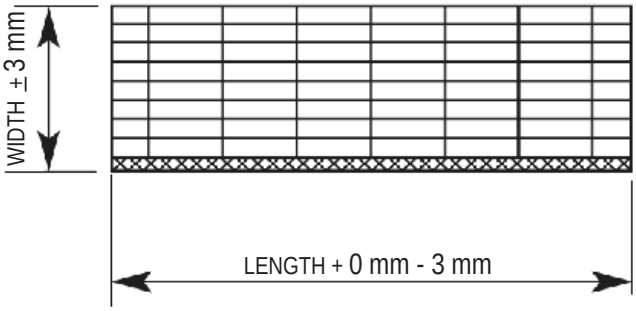
Installation Clearance





Stair Treads Tolerance

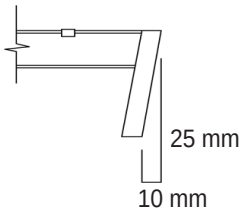
OVERALL DIMENSIONS



TREAD DIMENSIONS

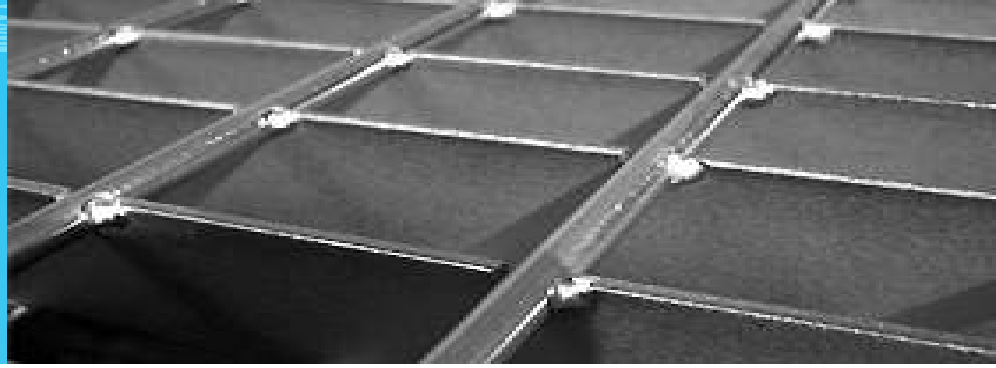
RECOMMENDED WIDTHS (*based on 5 mm load bars*)				
30 mm LB Pitch	215 mm	245 mm	275 mm	305 mm
41 mm LB Pitch	205 mm	245 mm	285 mm	325 mm

END FLAT LEAN

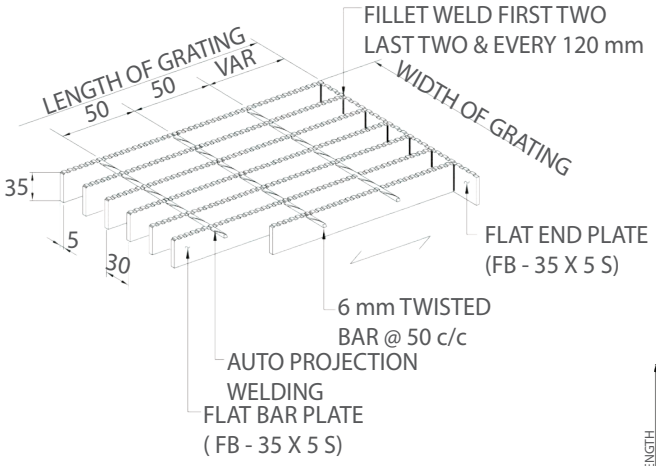


Fabrication welding.
Binding bars and End plates are welded one side of every load bar with a minimum 3 mm fillet weld.

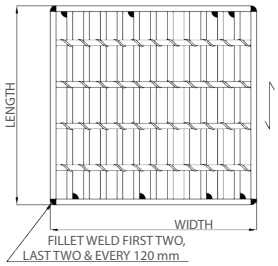
Welding Standards



TYPICAL GRATING DETAIL

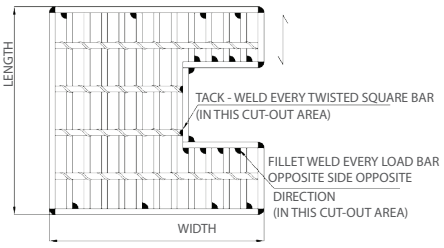


TYPE-1 GRATING

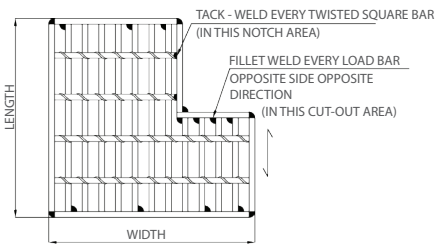


N- TYPE = 6th LOAD BAR
W- TYPE = 4th LOAD BAR

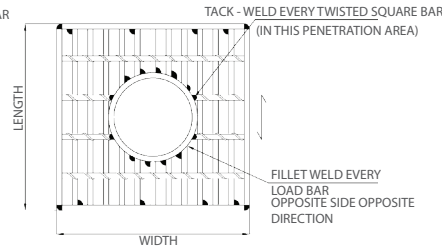
TYPE-2 GRATING
(WITH CUT-OUT)



TYPE-3 GRATING
(WITH NOTCH)



TYPE-4 GRATING
(WITH PENETRATION)



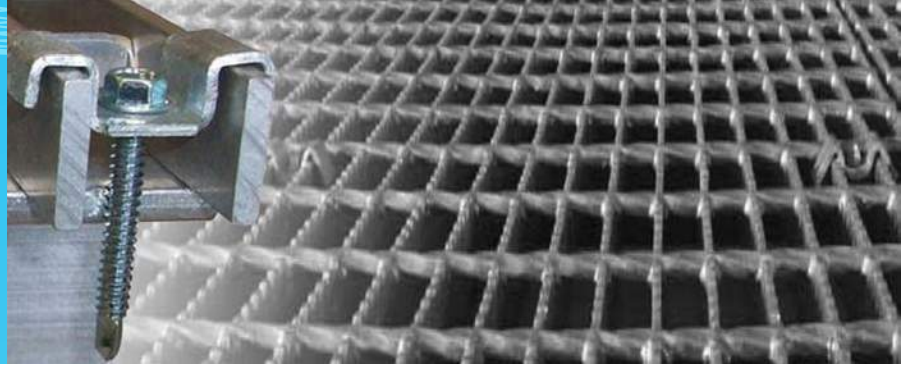
NOTES:

1. All Dimensions are in mm U.O.S. (unless otherwise stated).
2. Material grade shall conform in accordance to ASTM A1011 / S275 JR (ASTM A1011 / BSEN-10025)
3. Material shall be Hot Dip Galvanized in accordance to ASTM A123.
4. Manufacturing in accordance to BS 4592 - 1:2006.
   All Grating Tolerances to be in accordance with the recommendations of BS 4592 - 1:2006.
   a) Length of Grating (+0 mm , - 5 mm)
   b) Width of Grating (+0 mm , - 5 mm)
   c) Depth of load bearing bar
      up to & including 25 mm (+1.0 mm , - 5 mm)
      over 25 mm up to 50 mm (+1.5 mm , - 0.75 mm)
      over 50 mm up to 100 mm (+2.0 mm , - 1.0 mm)
      over 100 mm up to 150 mm (+2.0 mm , - 1.5 mm)
   d) Thickness of load bearing bar
      up to 10 mm (+0.4 mm)
      over 10 mm up to 15 mm (±0.5 mm)
   e) Difference between diagonals 5 (Out of Squareness of Grating Panel)
   f) Twisted Square Bars 1:100
      in either direction from perpendicular
      alignment with bearing bars.
   g) Twisted Square Bar spacing. ±5 per 1500 mm length of Load Bearing Bars
   h) Load bearing bar lean 1:10
   i) Transverse Bow of panel 1:100
      before fastening to supports.
   j) Longitudinal Bow of panel 1:200
      before fastening to supports.
5. Binding Bar shall be welded to load bearing bar by fillet welds, equivalent in size to at least thinnest section welded together & uniform in size for the full depth of the contact distance of the load bearing bars one side.
   Each panel has the first two & last two load bars welded to binding bar at one side then every 180 mm Pitch.

6. SYMBOLS:

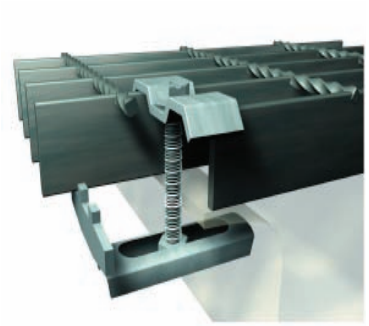
← →	Span of Load Bearing Bars
R	Rectangular Panel
⌒	Kick Plate

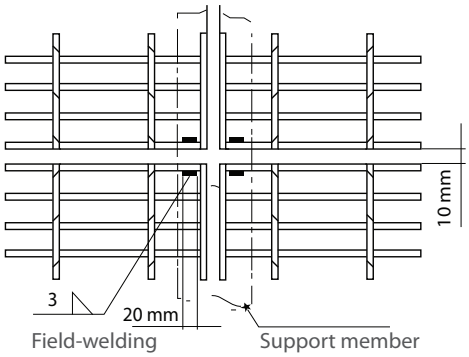
Installation Clips & Fasteners



DEEP SADDLE CLIP

TYPE 5 CLIP





Field Installation and Fixing Sketch

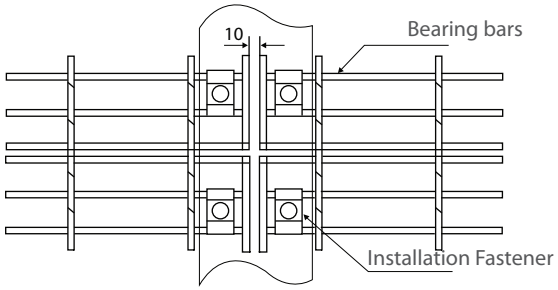
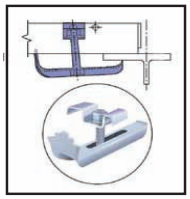
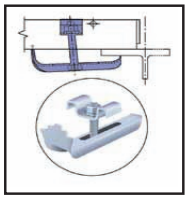
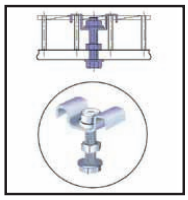
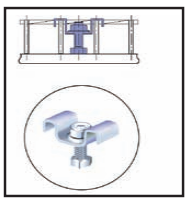


Diagram for Fastener Installation









1. There are two ways of installation for grating. One way is by welding and the other is by fasteners. The method of installation by fasteners has properties of easy to assemble and disassemble, thus preventing destroying the zinc layer.

2. Installation fastener is suitable for all types of grating. It is made of up-fasteners, down-fasteners and inside turret cylinder bolt M10.

3. Welding method is an angle welding at the first bearing bar of every corner on the grating. A welding seam which is not less than 20 mm length and less than 3 mm height.

4. At least every one square meter requires four lots of installation fasteners on grating to fix. Install more fasteners on the supportable construction when the span is larger.

5. We can supply stainless installation fasteners to satisfy our customer.

6. Please indicate clearly the type, quantity and material when you purchase installation fasteners.

Additional Products

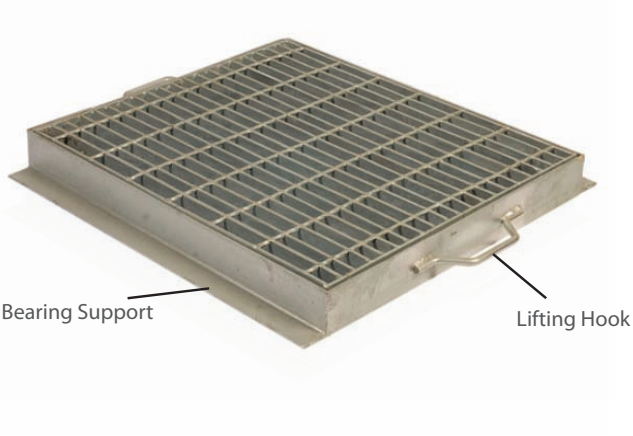
Cover Grates & Trench Grates
Plank Grating
Heavy Duty Grating
Checkered Grates & Trench Grates

Cover Grates

Cover Grates are widely used for municipal roads, garden facilities, residential quarters, schools, stadium management and other different places.

The company can also do according to special customer requirements, design and manufacture other specifications to cover the shape of the groove.

In accordance to the use of different locations, the company can provide different materials ditch (well) cover.



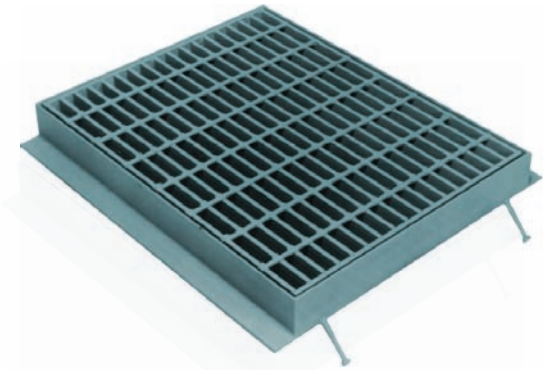
Cover Grates size selection description:
1. Bearing support direction, the ditch (well) wide gap will remain flat length of the L.

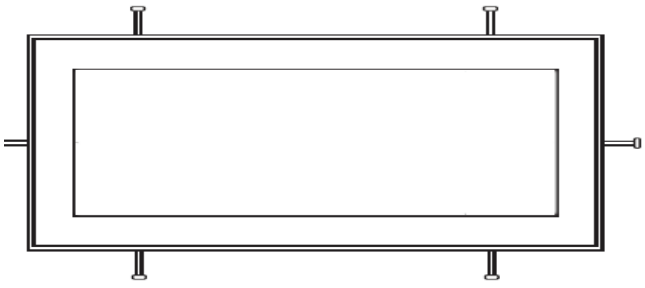
2. The standard width 995 mm, leaving space between plates 5 mm.

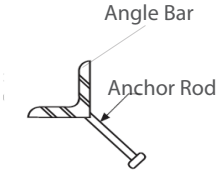
3. Size of diameter for the Lifting hook based on customer design.

4. Anchors designed to fit over two bearing bars and a minimum of four anchors provided for each panel.

5. Other special sizes quoted on request to meet your requirements.







TMI®

Plank Grating

Plank Grating is a one-piece construction product that allows easy field handling and cutting. The construction is formed and punched sheet metal. The formed metal planks are available in galvanized and plain steel.

Plank choices include grating with surface openings that are mesh and different sizes of hole along with solid surfaces.

Most plank grating are lightweight and offer significantly higher slip resistance surfaces than bar grating styles.

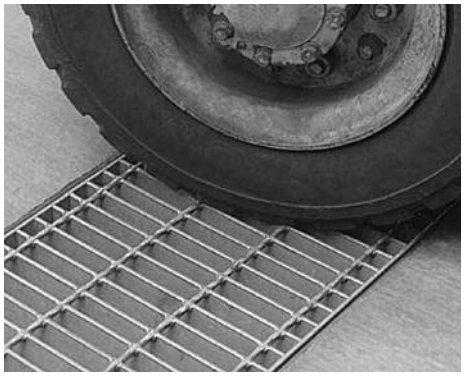
Large Hole Surface

Medium Hole Surface

Small Hole Surface

Mesh Surface

Heavy Duty Grating

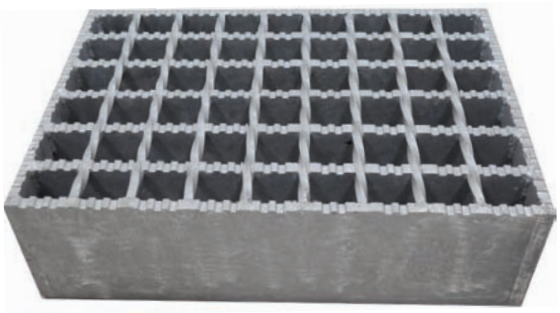


Heavy Duty Grating are manufactured in a wide variety of bar sizes and spacings. Heavy Duty products are designed to meet the customer need for grating subject to heavy rolling and static loads such as: Highways, Plant Floors, Loading Docks, Inlet Covers, Airports.

It is also commonly subjected to shock and impact load.

Heavy Duty - Plain

Heavy Duty - Serrated



Advantage of Heavy Duty - Serrated

Maximize the Skid Resistance.
Enhance the anti-slip quality on the surface of the grating.
Provide greater pedestrian safety.

Chequered Grates & Trench Grates

Tel : +971 (2) 5502025
Fax : +971 (2) 5502024
P.O. Box : 41558
Abu Dhabi

Tel : +971 (3) 7224768
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Al Ain

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Fax : +971 (4) 8852249
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Dubai

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Fax : +971 (7) 2282232
P.O. Box : 33239
Ras Al Khaimah

E-mail : tmi@tmico.ae
Website : www.tmi-co.com

Ordering Information

In order for us to serve you better, you need to provide the type and area of grating needed, and also the dimension and quantity along with the necessary flat drawing when you need a large area of grating:

- Dimension of total area of grating.
- Support structure(including section dimension, location of supporting beam and open - direction of channel steel).
- Location and dimension needed to cut out and moving steel grating.
- Location and dimension of nosing, end plate and specified profile connection.
- Area of grating is accounted by gross area, which is accounted by maximum outside dimension, inlcuding cut out and gap.

Only if all above items are clarified, will you get the exact offer.

Manufacturers of:

- Ceiling Suspension Systems & Partitions
- Expanded Mesh & Metal Products
- Cable Management Systems
- Industrial Gratings
- Stone Fixtures
- Metal Doors & Frames
- Industrial & IT Cabinets
- Highway Guardrail
- Fencing & Barriers
- Industrial Shelving Systems
- Aluminium Ladders

In House Services:

- Steel Fabrication
- Powder Coating
- Hot Dip Galvanizing
- Industrial Painting

TMI

شركة تصنيع المعادن الفنية ذ.م.م.

Technical Metal Industrial Co. L.L.C.

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