



BAKRIYA INDUSTRIES COMPANY LTD.



GRATINGS MANAGEMENT SYSTEM

PRODUCTS AND SERVICES

For Oil & Gas Projects, Water Desalination Plant, Power Plants, and Building Infrastructures



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شركة البكرية الصناعية المحدودة

المملكة العربية السعودية - ص.ب ١٦٤٢ جدة ٢١٤٤١
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PRODUCT CATALOGUE

2024

TABLE OF CONTENT

01	❖ Company Profile
02	❖ Gratings Category
03	❖ Terminology
04	❖ Production Methods
05	❖ Production Process Flow
06	❖ Service Loads: Load Specifications Tables
07	❖ Technical Parameters
08	❖ Design Calculation
09	❖ Installation
10	❖ Placing An Order
11	❖ Contact Information & Bank Details

BRIEF HISTORY OF THE COMPANY

BAKRIYA INDUSTRIES CO. LTD. (BIC) was established in Jeddah, Kingdom of Saudi Arabia in the year 1978 Specializing in the design, manufacture, and erection of all types of steel structure constructions, Storage Tanks, and fabrications with the ability to cater for both heavy and light projects. The area of the fabrication is 70,000 m² with all the necessary equipment and tools.

BAKRIYA INDUSTRIES CO. LTD. (BIC)

STEEL GRATINGS:

BIC is professionally engaged in the production of all kinds of welded steel Gratings and Hot-Dip Galvanized Gratings.

BIC a full-fledged industrial group set up its first Steel Grating Manufacturing Unit in the name of "Bakriya Industries Company Ltd." under the brand name of Ahmed Alamoudi Holding Group. The BIC Technical Factory for Steel Grating Products is a state-of-the-Art factory with the strength of modern manufacturing facilities.

As the country is moving on a fast track toward infrastructure development, The demand for construction-related materials is high. Considering the momentum, we decided to implant our products in the market in the range of:

Hot-Dip Galvanized Steel Gratings, Stainless Steel Grating, Stair Treads, Industry Floor Walkway, Grating Clips, and Standard Grating Panels, Serrated Flat Bars as well as Plain Flat Bars and we also supply Customized Grating products and a completed series of grating designing and services.

With a strong team of qualified, experienced engineers and a highly motivated skilled workforce, we can execute any size of the project on time and every time.

BIC was established to serve Oil & Gas, Petrochemicals, Power & desalination, Cement Plants, Metal Smelters, Mining Sector, Airport Buildings, Seaport Cranes, High-Rise Buildings, etc. Our Aim is to understand the unique needs of our customers and to offer economical and cost-effective solutions to their steel fabrication needs. Our diversified operations in the field of Gratings & steel fabrication allow us to offer our customers a wide range of fabrication services for their commercial and industrial projects.

BIC's mission is to deliver high-quality products and services in record time, with competitive pricing while maintaining a reasonable return for all of our employees and profits for Owners. The target is to do business with other companies and individuals who share the same values in order to build up loyal client relations by offering advanced solutions and excellence in our lines of service.

MEMBER OF AHMED ALAMOUDI HOLDING GROUP

AHMED ALAMOUDI HOLDING GROUP is considered one of the biggest private companies in Industry, Trade, and Building Materials.

The Group Management Team has experience of 25 years in the steel construction industry and executed various projects for reputed Clients / Companies.

The Company is 100% Saudi owned and a Limited Liability.

During the past 25 years the group has been very active in the market and has made significant progress to maintain good quality standards to satisfy clients and businesses as well through its facilities:

- STEEL STRUCTURE,
- PIPING,
- VESSEL,
- STORAGE TANK
- CABLE MANAGEMENT,
- HOT DIP GALVANIZING,
- WIRES & WELDED MESH,
- STEEL GRATINGS.



مجموعة أحمد العمودي القابضة
Ahmed Alamoudi Holding Group

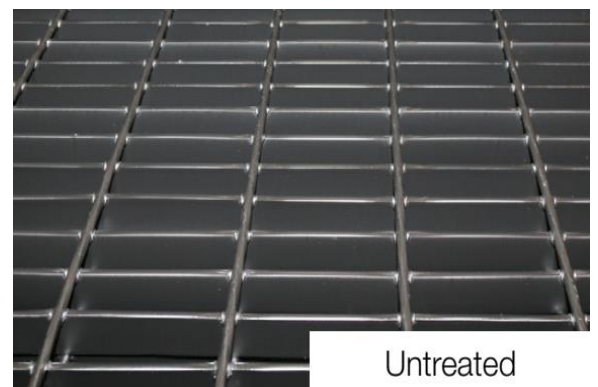
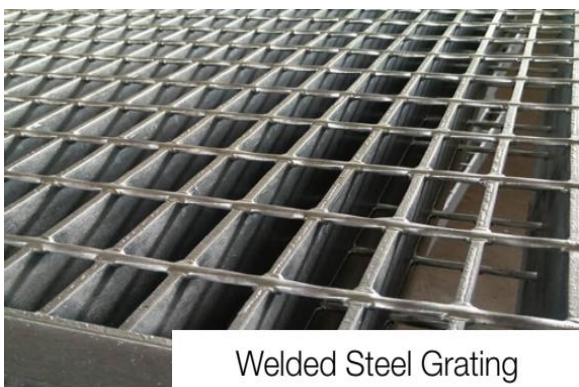
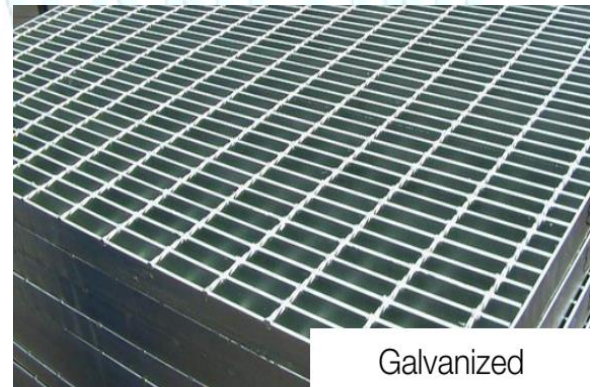
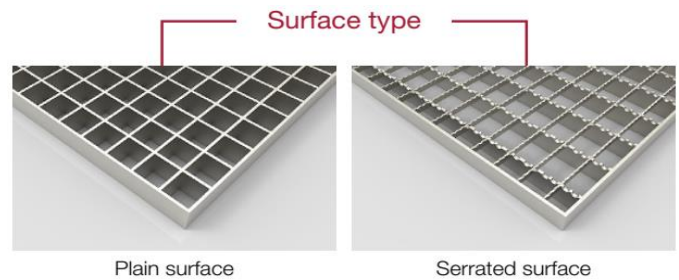


WHAT IS STEEL GRATINGS?

"STEEL GRATING IS AN OPEN GRID ASSEMBLY OF METAL BARS, IN WHICH THE BEARING BARS, RUNNING IN ONE DIRECTION, ARE SPACED BY RIGID ATTACHMENT TO CROSS BARS RUNNING PERPENDICULAR TO THEM OR BY BENT CONNECTING BARS EXTENDING BETWEEN THEM, WHICH IS DESIGNED TO HOLD HEAVY LOADS WITH MINIMAL WEIGHT. IT ALLOWS AIR, LIGHT AND HEAT TRANSMISSION, WHILE PROVIDING STRENGTH TO SUPPORT EVERYTHING ON IT FROM LIGHT PEDESTRIAN TRAFFIC TO THE HEAVIEST VEHICULAR TRAFFIC. IT IS WIDELY USED AS FLOORING, CATWALK, MEZZANINES/DECKING, STAIR TREAD, FENCING, RAMP, DOCK, TRENCH COVER, DRAINAGE PIT COVER, MAINTENANCE PLATFORM, PEDESTRIAN/CROWDED PEDESTRIAN IN FACTORIES, WORKSHOPS, MOTOR ROOMS, TROLLEY CHANNELS, HEAVY LOADING AREAS, BOILER EQUIPMENT AND HEAVY EQUIPMENT AREAS, ETC."

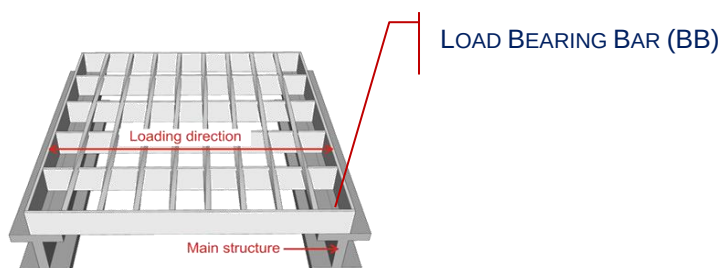
SPECIFICATIONS

- › Material: carbon steel and stainless steel.
- › Surface treatment: galvanized, painted, untreated.
- › Surface type: standard plain surface, serrated surface.
- › Cross bar type: flat cross bar and serrated cross bar.



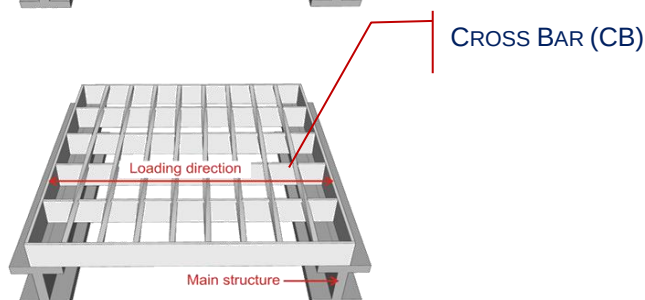
LOAD BEARING BAR

A LONGITUDINAL LOAD CARRYING FLAT BAR, POSITIONED UPRIGHT IN PARALLEL ROWS.



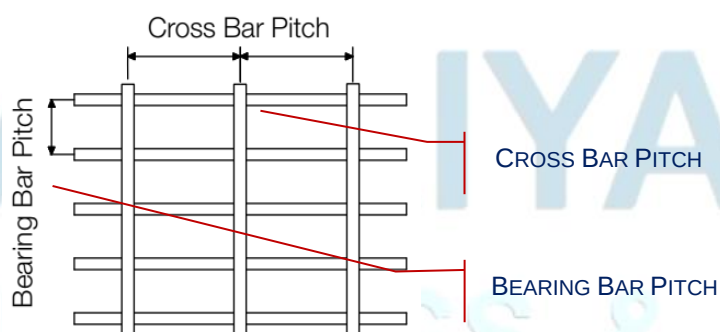
CROSS BAR

A TWISTED SQUARE BAR WELDED AT RIGHT ANGLES TO THE TOP EDGES OF THE LOAD BEARING BAR TO PROVIDE LATERAL RESTRAINT.



PITCH (MESH)

THE DISTANCE FROM CENTER TO CENTER OF LOAD BEARING BARS (AND THE DISTANCE FROM CENTER TO CENTER OF TRANSVERSE BARS).

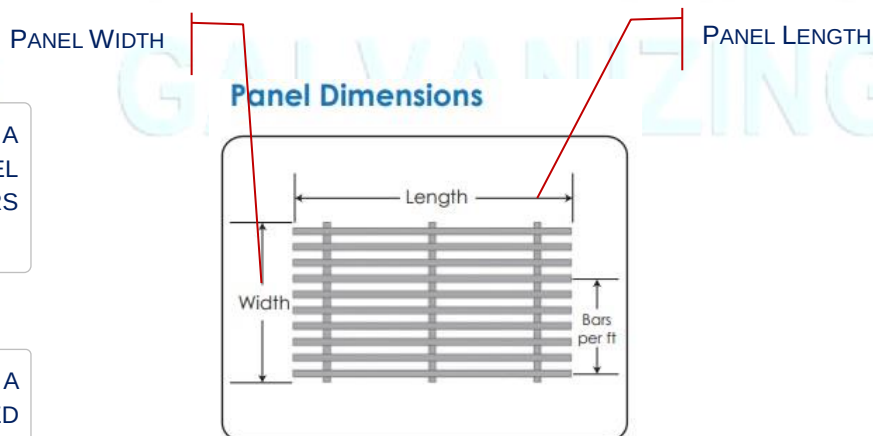


PANEL LENGTH

THE OVERALL DIMENSION OF A FLOORING PANEL THAT IS PARALLEL WITH THE LOAD BEARING BARS (INCLUDING THE BINDING BARS).

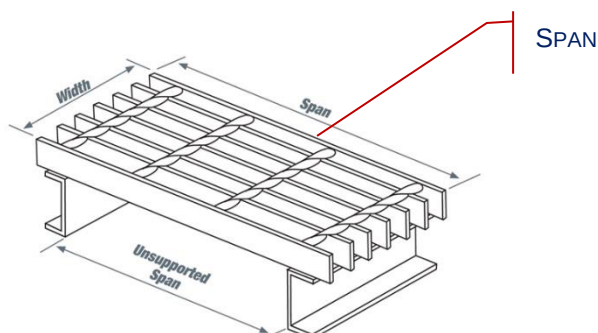
PANEL WIDTH

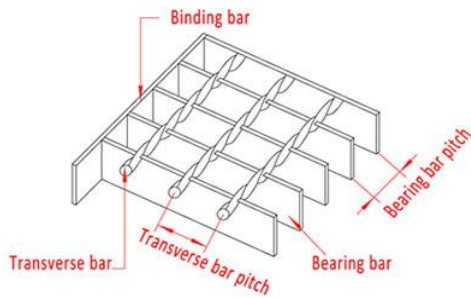
THE OVERALL DIMENSION OF A FLOORING PANEL MEASURED PARALLEL TO THE TRANSVERSE BARS.



SPAN

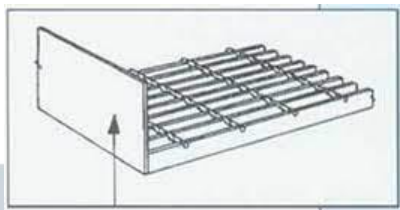
THE DISTANCE BETWEEN TWO SUPPORT BEAMS.





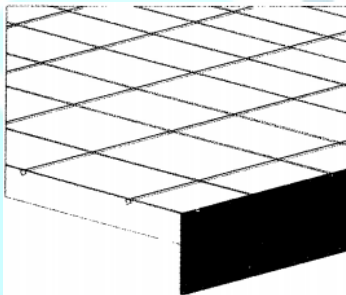
BINDING BAR / EDGING STRIP

FLAT BAR WELDED TO THE ENDS OF THE LOAD BEARING BARS OF THE PANEL



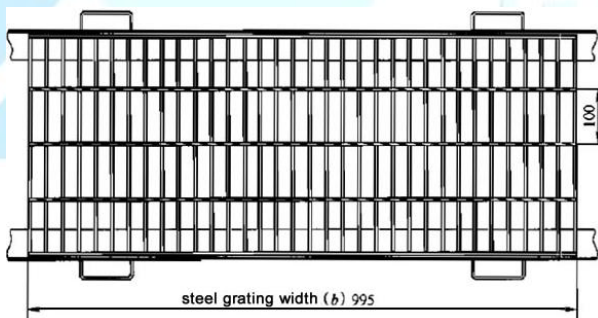
KICK PLATE / TOE PLATE

A BINDING BAR WHICH PROJECTS ABOVE THE TOP OF THE LOAD BEARING BARS OF A PANEL OR A CUT-OUT



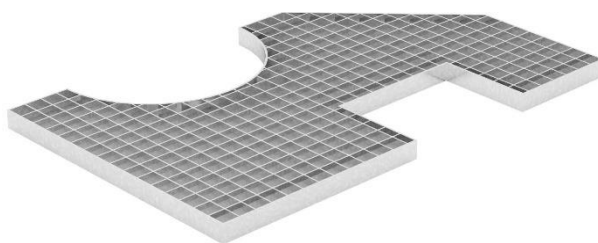
DEEP PLATE

A BINDING BAR WHICH PROJECTS BELOW THE BOTTOM OF THE LOAD BEARING BARS OF A PANEL OR A CUT-OUT



TRENCH COVER

THE EXACT DIMENSION OF THE GRATING. THE GRATING DIMENSION MUST ALWAYS BE 6MM – 10MM LESS THAN THE CLEAR HOLE DIMENSION. THIS APPLIES TO BOTH LOAD BEARING BAR AND TRANSVERSE BAR DIMENSION (LENGTH & WIDTH)



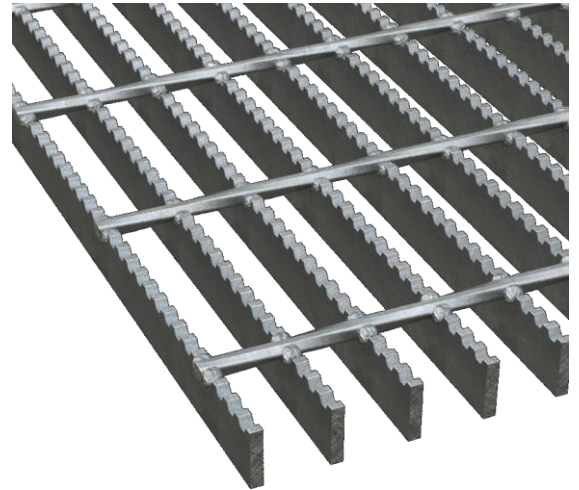
CUT-OUTS:

STRAIGHT SHAPING
CURVED SHAPING

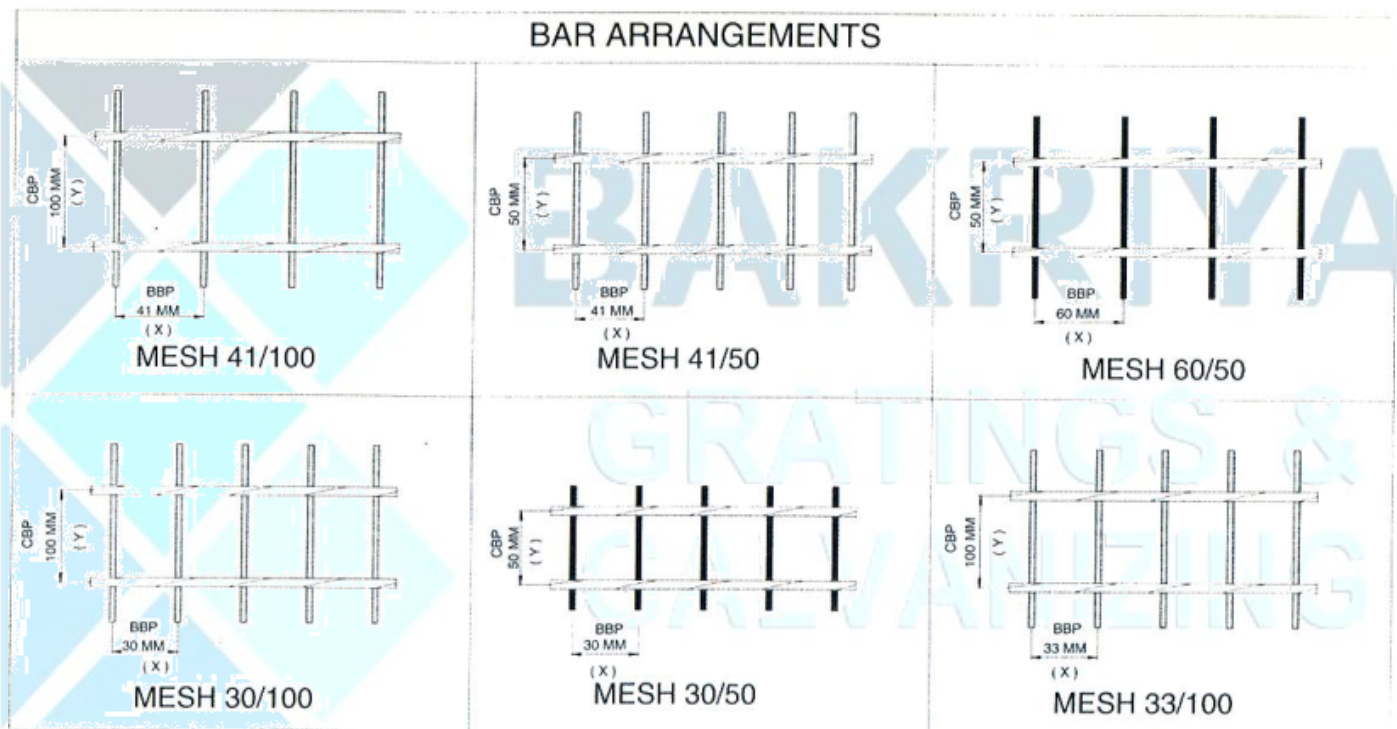
STRAIGHT SHAPING ARE CUT OUTS THAT HAVE STRAIGHT EDGES AND ARE IN LINE WITH TRANSVERSE AND LOAD BEARING BARS

CURVED SHAPING THAT DOES NOT GO IN LINE WITH TRANSVERSE BARS AND LOAD BEARING BARS. ROUND SHAPING

BEARING BAR SIZES ARE NORMALLY REFERRED TO BY HEIGHT OF THE FLAT BAR X THICKNESS



BAR ARRANGEMENTS



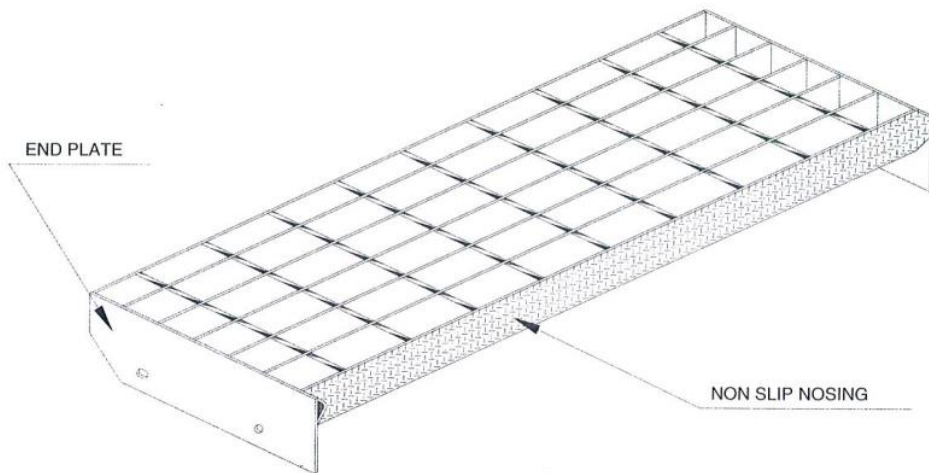
❖ LOAD BEARING BAR ARRANGEMENT:

BARs ARE ARRANGED AT CERTAIN DISTANCES FROM EACH OTHER MEASURED CENTER TO CENTER, CALLED **PITCH**. STANDARD BEARING BAR PITCHES (BBP) ARE AVAILABLE AS 30MM, 33MM, 41MM AND 60MM. BEARING BAR SIZES ARE NORMALLY REFERRED TO BY HEIGHT OF THE FLAT BAR X THICKNESS (MM).

❖ CROSS (TRANSVERSE) BAR ARRANGEMENT:

BARs ARE ARRANGED IN ROWS OF VARIABLE PITCHES MEASURED CENTER TO CENTER AT RIGHT ANGLES TO THE BEARING BARS. THE CROSS BAR PITCH (CBP) CAN VARY BETWEEN 50MM TO 200MM, WITH THE MOST COMMON BEING 50MM AND 100MM.

❖ THE COMBINED BEARING BAR AND CROSS BAR ARRANGEMENT IS NORMALLY REFERRED TO AS THE CENTER TO CENTER PITCH OR MESH.



STAIR TREADS & CUT OUTS:

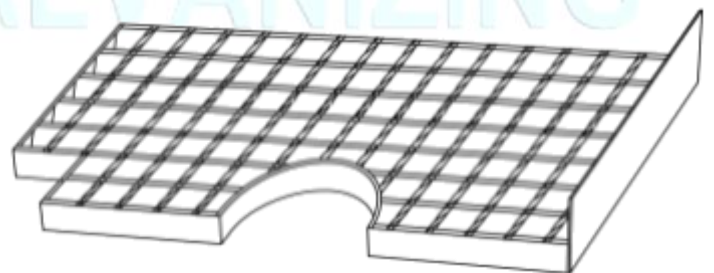
STAIR TREADS ARE CUT AND FABRICATED FROM THE DIFFERENT TYPES AND SIZES OF GRATING. THEY ARE CUT TO THE REQUIRED LENGTH AND WIDTH THEN FRAMED WITH THE END PLATES AND EQUIPPED WITH THE NOSING PLATE, BEFORE BEING GALVANIZED SUBJECT TO CLIENT SPECIFICATIONS. BOTH END PLATES AND NOSING PLATES HAVE VARIABLE TYPES AND SIZES AS REQUIRED.

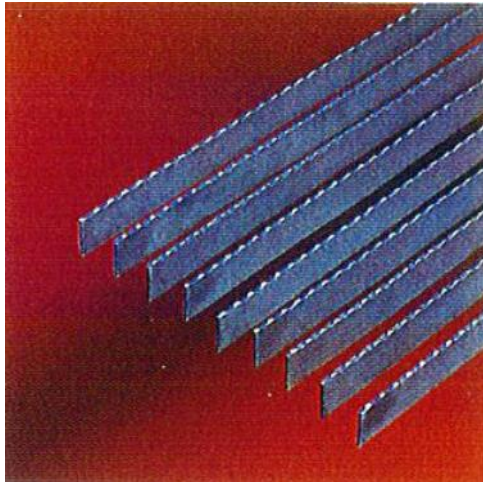
GRATING CUT OUTS / FABRICATED:

THIS IS A FURTHER PROCESS TO THE STANDARD GRATING PANELS WHICH INCLUDES:

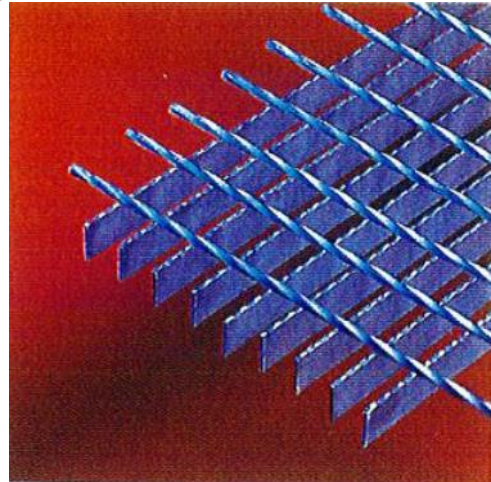
- ❖ CUTTING TO THE REQUIRED DIMENSIONS AND PROFILES.
- ❖ BINDING AND EDGING THE CUTTINGS WITH EDGING STRIPS OR BINDING BARS.
- ❖ JOINING THE CUTTINGS TO THE DESIRED LENGTH AND SHAPE BY ARC WELDING.

BIC CAN DESIGN AND FABRICATE GRATING PLATES WITH CUT OUTS TO SUIT THE INDIVIDUAL REQUIREMENTS AND SPECIFICATION AS SUPPLIED.

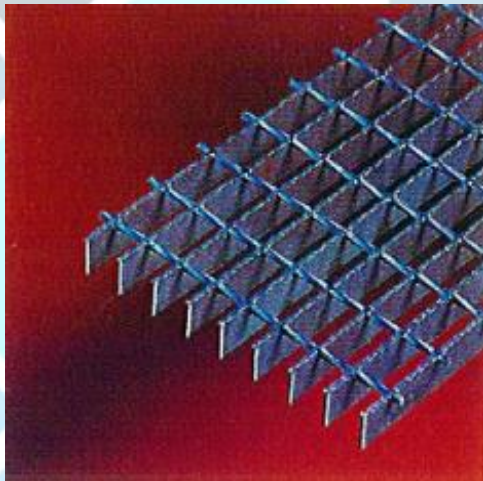




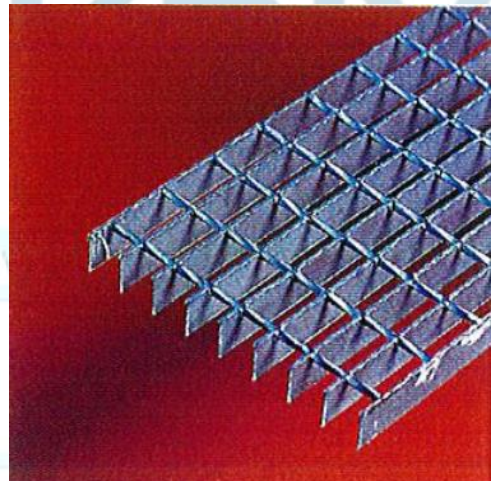
STAGE: 1
PLAIN OR SERRATED LOAD BARS ARE
SPACED ACCORDING TO MESH
REQUIREMENTS.



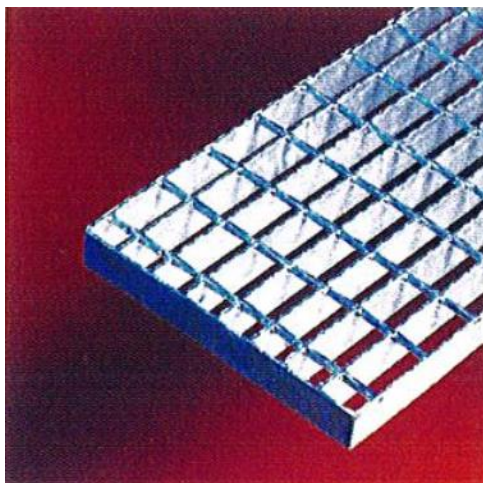
STAGE: 2
CROSS BARS ARE PRESSURE WELDED
AT RIGHT ANGLES ACCORDING TO MESH
REQUIREMENTS.



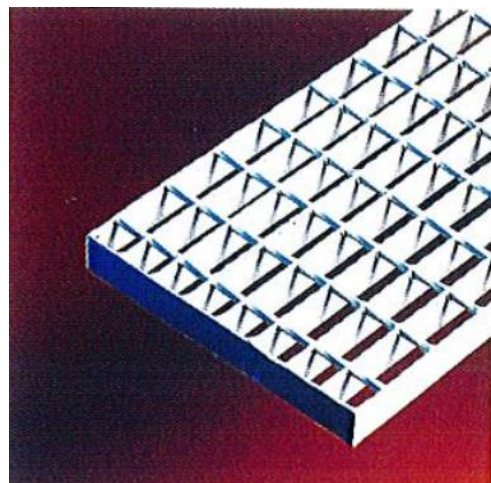
STAGE: 3
GRATING IS CUT-TO-LENGTH.



STAGE: 4
GRATING IS NIBBED TO REMOVE THE
CROSS BAR END.



STAGE: 5
BINDING FOR A WELDED TO ENDS OF THE
LOAD BEARING BARS OF THE PANEL
PRIOR TO GALVANIZING.



STAGE: 6
AS AN ALTERNATIVE TO GALVANIZING,
GRATINGS CAN BE PAINTED ACCORDING
TO CUSTOMER SPECIFICATIONS.

STEP-1

PREPARATION OF RAW MATERIAL
(BABY COIL)



SERRATE FLAT BAR
PLAIN FLAT BAR

STEP-2

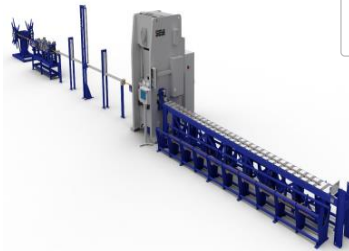
WIRE ROD: TWISTED, STRAIGHTEN
& CUT-TO-SIZE)



PREPARATION OF RAW
MATERIAL (STEEL WIRE ROD)

STEP-3

PLATE CUTTING



SERRATE FLAT BAR
PLAIN FLAT BAR
CUT-TO-LENGTH SIZE

STEP-4

RAW MATERIAL FEEDING



STEP-5

STEEL GRATING WELDING



STEP-6

EDGE CUTTING (BUILT-IN)



STEP-7

STD. STEEL GRATING SHEARING



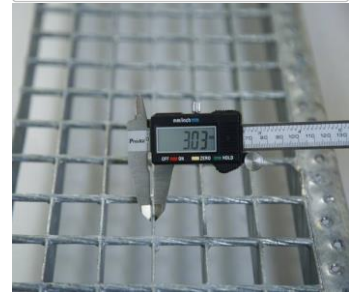
STEP-8

FABRICATION



STEP-09

IN-PROCESS INSPECTION



STEP-10

SURFACE TREATMENT (GALVA)



STEP-11

GALVANIZING INSPECTION



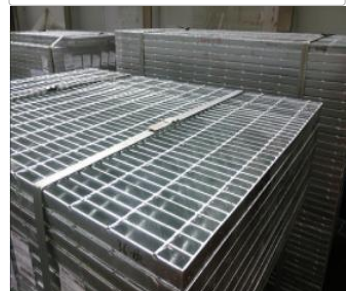
STEP-12

FINISHED



STEP-13

PACK & STORE



THE LOAD TABLES PROVIDE LOAD / DEFLECTION CRITERIA FOR MOST COMMON APPLICATIONS. THESE TABLES PROVIDE A CONCISE REFERENCE ALLOWING THE SPECIFYING AUTHORITY TO SELECT THE APPROPRIATE BEARING BAR SIZE AND SPACING FOR THE INTENDED APPLICATION. IT IS VITALLY IMPORTANT TO SPECIFY THE CORRECT GRATINGS THAT CAN HANDLE THE REQUIRED LOADS. LOAD-CARRYING CAPABILITIES ARE DETERMINED BY SELECTING THE PROPER BEARING BAR SIZE AND THE CENTER-TO-CENTER PITCH OF THE BEARING BARS.

THE LOAD TABLES OVERLEAF DESCRIBES THE UNIFORMLY DISTRIBUTED LOAD (UDL) OF EITHER 300KG/M² (FOR SINGLE-PERSON WALKWAYS) OR 500KG/M² (FOR GENERAL PEDESTRIAN TRAFFIC). THE LOAD TABLES ARE DESIGNED FOR SEVERAL BEARING BAR SIZES AS WELL AS THE THREE MAIN BEARING BAR PITCHES OF 30MM, 33MM, AND 41MM.

USING LOAD TABLES:

EXAMPLE.

TO FIND THE MOST EFFICIENT GRATING TO CARRY A WALKWAY LOAD OF 500KG/M² OVER A 1,400MM SPAN:

- ✓ SELECT THE LOAD TABLE OF 30MM PITCH, UNLESS OTHERWISE SPECIFIED.
- ✓ READ OFF THE 1,400MM CLEAR SPAN AT THE TOP OF THE TABLE AND FOLLOW THE COLUMN DOWN THE PAGE UNTIL THE THICK RED CONTINUOUS LINE IS TO THE RIGHT OF THAT COLUMN.
- ✓ FOLLOW THE HORIZONTAL COLUMN TO THE LEFT TO DETERMINE LOAD-BEARING BAR SECTION REQUIRED IN THIS EXAMPLE, 30MM X 5MM.

THE MOST SUITABLE GRATING SIZE IS 30MM X 5MM, 30:100 OR 30:500 IF YOU PREFER A SMALLER MESH.

Load Table 1 (UDL 300Kg/M ²)			In the case of Bearing Bar Pitch 25mm C.T.C.												
SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	300	363	432	507	588	675	768	867	972	1083	1200		
		Deflection (mm)	1.19	1.74	2.47	3.4	4.57	6.03	7.8	9.94	12.5	15.51	19.05		
2	3 x 30	Stress (Kg/Cm ²)	208	252	300	352	408	469	533	602	675	752	833	1302	
		Deflection (mm)	0.69	1.01	1.43	1.97	2.65	3.49	4.51	5.75	7.23	8.98	11.02	26.910	
3	3 x 40	Stress (Kg/Cm ²)	117	142	169	198	230	264	300	339	380	423	469	732	1055
		Deflection (mm)	0.29	0.43	0.6	0.83	1.12	1.47	1.9	2.43	3.05	3.79	4.65	11.35	23.54
4	3 x 50	Stress (Kg/Cm ²)	75	91	108	127	147	169	192	217	243	271	300	469	675
		Deflection (mm)	0.15	0.22	0.31	0.43	0.57	0.75	0.98	1.24	1.56	1.94	2.38	5.81	12.05
5	4 x 25	Stress (Kg/Cm ²)	225	272	324	380	441	506	576	650	729	812	900	1406	
		Deflection (mm)	0.89	1.31	1.85	2.55	3.43	4.52	5.85	7.46	9.37	11.64	14.29	34.88	
6	4 x 30	Stress (Kg/Cm ²)	156	189	225	264	306	352	400	452	506	564	625	977	1406
		Deflection (mm)	0.52	0.76	1.07	1.48	1.98	2.62	3.39	4.32	4.42	6.73	8.27	20.18	41.85
7	5 x 25	Stress (Kg/Cm ²)	180	218	259	304	353	405	461	520	583	650	720	1125	1620
		Deflection (mm)	0.71	1.05	1.48	2.04	2.74	3.62	4.68	5.97	7.5	9.31	11.43	27.90	57.86
8	5 x 30	Stress (Kg/Cm ²)	125	151	180	211	245	281	320	361	405	451	500	781	1125
		Deflection (mm)	0.41	0.61	0.86	1.18	1.59	2.09	2.71	3.45	4.34	5.39	6.61	16.15	33.48
9	5 x 35	Stress (Kg/Cm ²)						207	235	265	298	332	367	574	827
		Deflection (mm)						1.32	1.71	2.17	2.73	3.39	4.16	10.17	21.08
10	5 x 40	Stress (Kg/Cm ²)						158	180	203	228	254	281	439	633
		Deflection (mm)						0.88	1.14	1.46	1.83	2.27	2.79	6.81	14.13
11	5 x 50	Stress (Kg/Cm ²)						101	115	130	146	162	180	281	405
		Deflection (mm)						0.45	0.59	0.75	0.94	1.16	1.43	3.49	7.23
12	6 x 65	Stress (Kg/Cm ²)						72	82	93	104	116	128	200	288
		Deflection (mm)						0.24	0.31	0.40	0.5	0.62	0.77	1.87	3.88

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 300Kg/M² (3KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 975mm.

LOAD SPECIFICATION TABLES

Load Table 2 (UDL 300Kg/M²)

In the case of **Bearing Bar Pitch 30mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	353	427	508	596	692	794	903	1020	1144	1274	1411		
		Deflection (mm)	1.4	2.05	2.9	4	5.37	7.08	9.16	11.69	14.69	18.23	22.39		
2	3 x 30	Stress (Kg/Cm ²)	245	297	353	414	480	551	627	708	794	885	980		
		Deflection (mm)	0.81	1.19	1.68	2.31	3.11	4.1	5.31	6.77	8.5	10.56	12.97		
3	3 x 40	Stress (Kg/Cm ²)	138	167	199	233	270	310	353	398	447	498	551	861	
		Deflection (mm)	0.34	0.50	0.7	0.98	1.31	1.73	2.24	2.86	3.59	4.46	5.47	13.35	
4	3 x 50	Stress (Kg/Cm ²)	88	107	127	149	172	199	226	255	286	319	353	551	794
		Deflection (mm)	0.18	0.26	0.36	0.5	0.67	0.88	1.14	1.46	1.84	2.28	2.80	6.83	14.18
5	4 x 25	Stress (Kg/Cm ²)	264	320	381	447	519	595	677	765	857	956	1059		
		Deflection (mm)	1.05	1.54	2.17	3	4.03	5.31	6.88	8.77	11.03	13.69	16.81		
6	4 x 30	Stress (Kg/Cm ²)	184	222	265	311	360	414	471	531	596	664	735	1149	
		Deflection (mm)	0.61	0.89	1.26	1.74	2.33	3.08	3.98	5.08	6.38	7.92	9.72	23.75	
7	5 x 25	Stress (Kg/Cm ²)	211	256	305	358	415	476	542	612	686	764	847		
		Deflection (mm)	0.84	1.23	1.74	2.4	3.22	4.26	5.5	7.02	8.82	10.95	13.45		
8	5 x 30	Stress (Kg/Cm ²)	147	178	212	249	288	331	376	425	476	531	588	919	
		Deflection (mm)	0.49	0.71	1	1.39	1.87	2.46	3.18	4.06	5.11	6.34	7.78	18.99	
9	5 x 35	Stress (Kg/Cm ²)						243	277	312	350	390	432	675	972
		Deflection (mm)						1.55	2	2.56	3.21	3.99	4.90	11.96	24.80
10	5 x 40	Stress (Kg/Cm ²)						186	212	239	268	299	331	517	745
		Deflection (mm)						1.03	1.34	1.71	2.15	2.67	3.28	8.01	16.62
11	5 x 50	Stress (Kg/Cm ²)						119	136	153	172	191	212	331	478
		Deflection (mm)						0.53	0.69	0.88	1.1	1.37	1.68	4.10	8.50

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 300Kg/M² (3KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

LOAD SPECIFICATION TABLES

Load Table 3 (UDL 300Kg/M²)

 In the case of **Bearing Bar Pitch 33mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	387	468	557	654	759	871	991	1118	1253	1397	1548		
		Deflection (mm)	1.54	2.25	3.19	4.39	5.90	7.78	10.07	12.86	16.16	20.05	24.58		
2	3 x 30	Stress (Kg/Cm ²)	269	325	387	454	527	605	688	777	871	970	1075		
		Deflection (mm)	0.89	1.30	1.84	2.54	3.42	4.5	5.84	7.45	9.35	11.62	14.27		
3	3 x 40	Stress (Kg/Cm ²)	151	183	218	256	296	340	387	437	490	546	605	945	
		Deflection (mm)	0.38	0.55	0.78	1.07	1.44	1.9	2.46	3.15	3.95	4.91	6.02	14.69	
4	3 x 50	Stress (Kg/Cm ²)	97	117	139	164	190	218	248	280	314	349	387	605	871
		Deflection (mm)	0.19	0.28	0.39	0.55	0.74	0.97	1.25	1.61	2.02	2.51	3.08	7.51	15.60
5	4 x 25	Stress (Kg/Cm ²)	290	351	418	491	569	653	743	839	940	1048	1161		
		Deflection (mm)	1.15	1.69	2.39	3.3	4.42	5.84	7.57	9.65	12.13	15.01	18.41		
6	4 x 30	Stress (Kg/Cm ²)	202	244	290	341	395	454	516	583	653	728	806		
		Deflection (mm)	0.67	0.98	1.38	1.91	2.56	3.38	4.38	5.59	7.02	8.71	10.69		
7	5 x 25	Stress (Kg/Cm ²)	232	281	334	392	455	522	594	671	752	838	929		
		Deflection (mm)	0.92	1.35	1.91	2.63	3.54	4.69	6.05	7.72	9.7	12.01	14.75		
8	5 x 30	Stress (Kg/Cm ²)	161	195	232	275	316	363	413	466	523	582	645	1008	
		Deflection (mm)	0.53	0.78	1.11	1.52	2.06	2.71	3.5	4.47	5.62	6.97	8.56	20.89	
9	5 x 35	Stress (Kg/Cm ²)						267	303	342	384	428	474	741	1066
		Deflection (mm)						1.71	2.2	2.82	3.53	4.39	5.39	13.16	27.28
10	5 x 40	Stress (Kg/Cm ²)						204	232	262	294	328	363	567	817
		Deflection (mm)						1.13	1.47	1.88	2.36	2.94	3.61	8.81	18.28
11	5 x 50	Stress (Kg/Cm ²)						131	148	167	188	210	232	363	523
		Deflection (mm)						0.58	0.76	0.97	1.21	1.51	1.85	4.51	9.35

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 300Kg/M² (3KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

LOAD SPECIFICATION TABLES

Load Table 4 (UDL 300Kg/M²)

In the case of **Bearing Bar Pitch 41mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	480	581	691	811	941	1080	1229	1387	1555				
		Deflection (mm)	1.9	2.79	3.95	5.44	7.32	9.64	12.48	15.91	20				
2	3 x 30	Stress (Kg/Cm ²)	333	403	480	563	653	750	853	963	1080	1203	1333		
		Deflection (mm)	1.1	1.61	2.29	3.15	4.23	5.58	7.22	9.21	11.57	14.37	17.64		
3	3 x 40	Stress (Kg/Cm ²)	188	227	270	317	368	422	480	542	608	677	750	1172	
		Deflection (mm)	0.47	0.68	0.96	1.33	1.79	2.35	3.05	3.88	4.88	6.06	7.44	18.17	
4	3 x 50	Stress (Kg/Cm ²)	120	145	173	203	235	270	307	347	389	433	480	750	1080
		Deflection (mm)	0.24	0.35	0.4	0.68	0.91	1.21	1.56	1.99	2.5	3.1	3.81	9.30	19.29
5	4 x 25	Stress (Kg/Cm ²)	360	436	518	608	706	810	922	1040	1166	1300	1440		
		Deflection (mm)	1.43	2.09	2.96	4.08	5.49	7.23	9.36	11.93	15	18.62	22.86		
6	4 x 30	Stress (Kg/Cm ²)	250	303	360	423	490	563	640	723	810	903	1000	1563	
		Deflection (mm)	0.83	1.21	1.71	2.36	3.18	4.19	5.42	6.90	8.68	10.77	13.23	32.29	
7	5 x 25	Stress (Kg/Cm ²)	288	348	415	487	564	648	737	832	933	1040	1152		
		Deflection (mm)	1.14	1.67	2.37	3.26	4.39	5.79	7.49	9.55	12	14.89	18.29		
8	5 x 30	Stress (Kg/Cm ²)	200	242	288	338	392	450	512	578	648	722	800	1250	
		Deflection (mm)	0.66	0.97	1.37	1.89	2.54	3.35	4.33	5.52	6.94	8.62	10.58	25.83	
9	5 x 35	Stress (Kg/Cm ²)						331	376	425	476	530	588	918	1322
		Deflection (mm)						2.11	2.73	3.48	4.37	5.43	6.66	16.27	33.74
10	5 x 40	Stress (Kg/Cm ²)						253	288	325	365	406	450	703	1013
		Deflection (mm)						1.41	1.83	2.33	2.93	3.64	4.46	10.90	22.60
11	5 x 50	Stress (Kg/Cm ²)						162	184	208	233	260	288	450	648
		Deflection (mm)						0.72	0.94	1.19	1.5	1.86	2.29	5.58	11.57

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 300Kg/M² (3KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 984mm.

Load Table 5 (UDL 500Kg/M²)

In the case of Bearing Bar Pitch 25mm C.T.C.

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	500	605	720	845	980	1125	1280	1445	1620				
		Deflection (mm)	1.98	2.90	4.11	5.67	7.62	10.04	13	16.57	20.83				
2	3 x 30	Stress (Kg/Cm ²)	347	420	500	587	681	781	889	1003	1125	1253	1389		
		Deflection (mm)	1.15	1.68	2.38	3.28	4.41	5.81	7.52	9.59	12.05	14.96	18.37		
3	3 x 40	Stress (Kg/Cm ²)	195	236	281	330	383	439	500	564	633	705	781	1221	
		Deflection (mm)	0.48	0.71	1	1.38	1.86	2.45	3.17	4.05	5.09	6.31	7.75	18.92	
4	3 x 50	Stress (Kg/Cm ²)	125	151	180	211	245	281	320	361	405	451	500	781	1125
		Deflection (mm)	0.25	0.36	0.51	0.71	0.95	1.26	1.63	2.07	2.6	3.23	3.97	9.69	20.09
5	4 x 25	Stress (Kg/Cm ²)	375	454	540	634	735	844	960	1084	1215	1354	1500		
		Deflection (mm)	1.49	2.18	3.09	4.25	5.72	7.53	9.75	12.43	15.62	19.39	23.81		
6	4 x 30	Stress (Kg/Cm ²)	260	315	375	440	510	586	667	753	844	940	1042	1628	
		Deflection (mm)	0.86	1.26	1.79	2.46	3.31	4.36	5.64	7.19	9.04	11.22	13.78	33.64	
7	5 x 25	Stress (Kg/Cm ²)	300	363	432	507	588	675	768	867	972	1083	1200		
		Deflection (mm)	1.19	1.74	2.47	3.4	4.57	6.03	7.8	9.94	12.5	15.51	19.05		
8	5 x 30	Stress (Kg/Cm ²)	208	252	300	352	408	469	533	602	675	752	833	1302	
		Deflection (mm)	0.69	1.01	1.43	1.97	2.65	3.49	4.51	5.50	7.23	8.98	11.02	26.91	
9	5 x 35	Stress (Kg/Cm ²)						344	392	442	496	553	612	957	1378
		Deflection (mm)						2.2	2.84	3.62	4.55	5.65	6.94	16.95	35.14
10	5 x 40	Stress (Kg/Cm ²)						264	300	339	380	423	469	732	1055
		Deflection (mm)						1.47	1.9	2.43	3.05	3.79	4.65	11.35	23.54
11	5 x 50	Stress (Kg/Cm ²)						169	192	217	243	271	300	469	675
		Deflection (mm)						0.75	0.98	1.24	1.56	1.94	2.38	5.81	12.05
12	6 x 65	Stress (Kg/Cm ²)						106	121	136	153	170	188	294	424
		Deflection (mm)						0.36	0.46	0.59	0.74	0.92	1.13	2.75	5.71

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 500Kg/M² (5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 975mm.

LOAD SPECIFICATION TABLES

Load Table 6 (UDL 500Kg/M²)

In the case of **Bearing Bar Pitch 30mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm2)	590	713	848	995	1156	1326	1508						
		Deflection (mm)	2.34	3.42	4.84	6.68	8.97	11.82	15.3						
2	3 x 30	Stress (Kg/Cm2)	409	496	590	691	802	920	1047	1182	1326	1478	1637		
		Deflection (mm)	1.35	1.99	2.81	3.86	5.19	6.85	8.87	11.31	14.2	17.64	21.66		
3	3 x 40	Stress (Kg/Cm2)	230	279	332	389	451	518	590	665	746	832	920	1438	
		Deflection (mm)	0.57	0.84	1.17	1.64	2.19	2.89	3.74	4.78	6	7.45	9.13	22.29	
4	3 x 50	Stress (Kg/Cm2)	147	179	212	249	287	332	377	426	478	533	590	920	1326
		Deflection (mm)	0.3	0.43	0.6	0.84	1.12	1.47	1.9	2.44	3.07	3.81	4.68	11.41	23.68
5	4 x 25	Stress (Kg/Cm2)	441	534	636	746	867	994	1131	1278	1431	1593			
		Deflection (mm)	1.75	2.57	3.62	5.01	6.73	8.87	11.49	14.65	18.42	22.82			
6	4 x 30	Stress (Kg/Cm2)	307	371	443	519	601	691	787	887	995	1109	1227		
		Deflection (mm)	1.02	1.49	2.1	2.91	3.89	5.14	6.65	8.48	10.65	13.23	16.23		
7	5 x 25	Stress (Kg/Cm2)	352	428	509	598	693	795	905	1022	1146	1274	1412		
		Deflection (mm)	1.4	2.05	2.91	4.01	5.38	7.11	9.19	11.72	14.73	18.25	22.41		
8	5 x 30	Stress (Kg/Cm2)	245	297	354	416	481	553	628	710	795	887	982	1535	
		Deflection (mm)	0.82	1.19	1.67	2.32	3.12	4.11	5.31	6.78	8.53	10.59	12.99	31.71	
9	5 x 35	Stress (Kg/Cm2)						406	463	521	585	651	721	1127	
		Deflection (mm)						2.59	3.34	4.28	5.36	6.66	8.18	19.97	
10	5 x 40	Stress (Kg/Cm2)						311	354	399	448	499	553	863	1244
		Deflection (mm)						1.72	2.24	2.86	3.59	4.46	5.48	13.38	27.76
11	5 x 50	Stress (Kg/Cm2)						199	227	256	287	319	254	553	795
		Deflection (mm)						0.89	1.15	1.47	1.84	2.29	2.81	6.85	14.20

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

2) Table is for Stress and Deflection with UDL 500Kg/M² (5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

U.D.L. = Uniformly Distributed Load

Load Table 7 (UDL 500Kg/M²)

In the case of **Bearing Bar Pitch 33mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm2)	646	782	930	1092	1268	1455							
		Deflection (mm)	2.57	3.76	5.33	7.33	9.85	12.99							
2	3 x 30	Stress (Kg/Cm2)	449	543	646	758	880	1010	1149	1281	1455	1620			
		Deflection (mm)	1.49	2.17	3.07	4.24	5.71	7.52	9.75	12.44	15.61	19.41			
3	3 x 40	Stress (Kg/Cm2)	252	306	364	428	494	568	646	730	818	912	1010	1578	
		Deflection (mm)	0.63	0.92	1.3	1.79	2.40	3.17	4.11	5.26	6.6	8.2	10.05	24.53	
4	3 x 50	Stress (Kg/Cm2)	162	195	232	274	317	364	414	468	524	583	646	1010	1455
		Deflection (mm)	0.32	0.47	0.65	0.92	1.24	1.62	2.09	2.69	3.37	4.19	5.14	12.54	26.05
5	4 x 25	Stress (Kg/Cm2)	484	586	698	820	950	1091	1241	1401	1570				
		Deflection (mm)	1.92	2.82	3.99	5.51	7.38	9.75	12.64	16.12	20.26				
6	4 x 30	Stress (Kg/Cm2)	337	407	484	569	660	758	862	974	1091	1216	1346		
		Deflection (mm)	1.12	1.64	2.3	3.19	4.28	5.64	7.31	9.34	11.72	14.55	17.85		
7	5 x 25	Stress (Kg/Cm2)	387	469	558	655	760	872	992	1121	1256	1399	1551		
		Deflection (mm)	1.54	2.25	3.19	4.39	5.91	7.83	10.1	12.89	16.2	20.06	24.63		
8	5 x 30	Stress (Kg/Cm2)	269	326	387	459	528	606	690	778	873	972	1077		
		Deflection (mm)	0.89	1.30	1.85	2.54	3.44	4.53	5.85	7.46	9.39	11.64	14.30		
9	5 x 35	Stress (Kg/Cm2)						446	506	571	641	715	792	1237	
		Deflection (mm)						2.86	3.67	4.71	5.9	7.33	9.00	21.98	
10	5 x 40	Stress (Kg/Cm2)						341	387	438	491	548	606	947	1364
		Deflection (mm)						1.89	2.45	3.14	3.94	4.91	6.03	14.71	30.53
11	5 x 50	Stress (Kg/Cm2)						219	247	279	314	351	387	606	873
		Deflection (mm)						0.97	1.27	1.62	2.02	2.52	3.09	7.53	15.61

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 500Kg/M² (5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

LOAD SPECIFICATION TABLES

Load Table 8 (UDL 500Kg/M²)

In the case of **Bearing Bar Pitch 41mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm2)	800	968	1152	1352	1568								
		Deflection (mm)	3.17	4.65	6.58	9.07	12.20								
2	3 x 30	Stress (Kg/Cm2)	556	672	800	939	1089	1250	1422	1606					
		Deflection (mm)	1.84	2.69	3.81	5.25	7.06	9.3	12.04	15.34					
3	3 x 40	Stress (Kg/Cm2)	313	378	450	528	613	703	800	903	1013	1128	1250		
		Deflection (mm)	0.78	1.13	1.61	2.21	2.98	3.92	5.08	6.47	8.14	10.1	12.40		
4	3 x 50	Stress (Kg/Cm2)	200	242	288	338	392	450	512	578	648	722	800	1250	
		Deflection (mm)	0.4	0.58	0.82	1.13	1.52	2.01	2.6	3.31	4.17	5.17	6.35	15.50	
5	4 x 25	Stress (Kg/Cm2)	600	726	864	1014	1176	1350	1536						
		Deflection (mm)	2.38	3.49	4.94	6.8	9.15	12.05	15.6						
6	4 x 30	Stress (Kg/Cm2)	417	504	600	704	817	938	1067	1204	1350	1504			
		Deflection (mm)	1.38	2.02	2.86	3.94	5.29	6.98	9.03	11.51	14.46	17.96			
7	5 x 25	Stress (Kg/Cm2)	480	581	691	811	941	1080	1229	1387	1555				
		Deflection (mm)	1.9	2.79	3.95	5.44	7.32	9.64	12.48	15.91	20				
8	5 x 30	Stress (Kg/Cm2)	333	403	480	563	653	750	853	963	1080	1203	1333		
		Deflection (mm)	1.1	1.61	2.29	3.15	4.23	5.58	7.22	9.21	11.57	14.37	17.64		
9	5 x 35	Stress (Kg/Cm2)						551	627	708	793	884	980	1531	
		Deflection (mm)						3.51	4.55	5.80	7.29	9.05	11.11	27.12	
10	5 x 40	Stress (Kg/Cm2)						422	480	542	608	677	750	1172	
		Deflection (mm)						2.35	3.05	3.88	4.88	6.06	7.44	18.17	
11	5 x 50	Stress (Kg/Cm2)						270	307	347	389	433	480	750	1080
		Deflection (mm)						1.21	1.56	1.99	2.5	3.1	3.81	9.30	19.29

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 500Kg/M² (5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

LOAD SPECIFICATION TABLES

Load Table 9 (UDL 750Kg/M²)

 In the case of **Bearing Bar Pitch 25mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm2)	750	908	1080	1268	1470								
		Deflection (mm)	2.98	4.36	6.17	8.5	11.43								
2	3 x 30	Stress (Kg/Cm2)	521	630	750	880	1021	1172	1333	1505					
		Deflection (mm)	1.72	2.52	3.57	4.92	6.62	8.72	11.29	14.39					
3	3 x 40	Stress (Kg/Cm2)	293	354	422	495	574	659	750	847	949	1058	1172		
		Deflection (mm)	0.73	1.06	1.51	2.08	2.79	3.68	4.76	6.07	7.63	9.47	11.63		
4	3 x 50	Stress (Kg/Cm2)	188	227	270	317	368	422	480	542	608	677	750	1172	
		Deflection (mm)	0.37	0.54	0.77	1.06	1.43	1.88	2.44	3.11	3.91	4.85	5.95	14.53	
5	4 x 25	Stress (Kg/Cm2)	563	681	810	951	1103	1266	1440	1626					
		Deflection (mm)	2.23	3.27	4.63	6.38	8.58	11.3	14.63	18.64					
6	4 x 30	Stress (Kg/Cm2)	391	473	563	660	766	879	1000	1129	1266	1410	1563		
		Deflection (mm)	1.29	1.89	2.68	3.69	4.96	6.54	8.47	10.90	13.56	16.83	20.67		
7	5 x 25	Stress (Kg/Cm2)	450	545	648	761	882	1013	1152	1301	1458	1625			
		Deflection (mm)	1.79	2.61	3.7	5.1	6.86	9.04	11.7	14.91	18.75	23.27			
8	5 x 30	Stress (Kg/Cm2)	313	378	450	528	613	703	800	903	1013	1128	1250		
		Deflection (mm)	1.03	1.51	2.14	2.95	3.97	5.23	6.77	8.63	10.85	13.47	16.53		
9	5 x 35	Stress (Kg/Cm2)						517	588	664	744	829	918	1435	
		Deflection (mm)						3.29	4.26	5.44	6.83	8.48	10.41	25.42	
10	5 x 40	Stress (Kg/Cm2)						396	450	508	570	635	703	1099	1582
		Deflection (mm)						2.21	2.86	3.64	4.58	5.68	6.98	17.03	35.31
11	5 x 50	Stress (Kg/Cm2)						253	288	325	365	406	450	703	1013
		Deflection (mm)						1.13	1.46	1.86	2.34	2.91	3.57	8.72	18.08
12	6 x 65	Stress (Kg/Cm2)						148	169	191	214	238	264	412	593
		Deflection (mm)						0.5	0.65	0.82	1.04	1.5	1.58	3.85	7.99

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 750Kg/M² (7.5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 975mm.

LOAD SPECIFICATION TABLES

Load Table 10 (UDL 750Kg/M²)

In the case of **Bearing Bar Pitch 30mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm2)	882	1068	1271	1491									
		Deflection (mm)	3.5	5.13	7.26	10									
2	3 x 30	Stress (Kg/Cm2)	613	741	882	1036	1201	1379	1569						
		Deflection (mm)	2.03	2.97	4.2	5.79	7.78	10.26	13.28						
3	3 x 40	Stress (Kg/Cm2)	345	417	496	582	676	776	882	996	1117	1244	1379		
		Deflection (mm)	0.85	1.25	1.77	2.44	3.28	4.33	5.6	7.14	8.97	11.14	13.68		
4	3 x 50	Stress (Kg/Cm2)	221	267	318	373	432	496	565	638	715	796	882	1379	
		Deflection (mm)	0.44	0.64	0.91	1.25	1.68	2.22	2.87	3.66	4.59	5.7	7.00	17.10	
5	4 x 25	Stress (Kg/Cm2)	662	801	953	1118	1297	1489							
		Deflection (mm)	2.63	3.84	5.45	7.5	10.09	13.29							
6	4 x 30	Stress (Kg/Cm2)	460	556	662	777	901	1034	1176	1328	1489				
		Deflection (mm)	1.52	2.23	3.15	4.34	5.84	7.69	9.96	12.69	15.95				
7	5 x 25	Stress (Kg/Cm2)	529	641	762	895	1038	1191	1355	1530					
		Deflection (mm)	2.1	3.08	4.36	6	8.07	10.64	13.77	17.55					
8	5 x 30	Stress (Kg/Cm2)	368	445	529	621	721	827	941	1063	1191	1327	1471		
		Deflection (mm)	1.22	1.78	2.52	3.47	4.67	6.15	7.97	10.15	12.76	15.84	19.45		
9	5 x 35	Stress (Kg/Cm2)						608	691	781	875	975	1080		
		Deflection (mm)						3.88	5.02	6.39	8.04	9.98	12.25		
10	5 x 40	Stress (Kg/Cm2)						465	529	598	670	747	827	1293	
		Deflection (mm)						2.6	3.36	4.28	5.38	6.68	8.21	20.04	
11	5 x 50	Stress (Kg/Cm2)						298	339	383	429	478	529	827	1191
		Deflection (mm)						1.33	1.72	2.19	2.76	3.42	4.20	10.26	21.27

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 750Kg/M² (7.5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

Load Table 11 (UDL 750Kg/M²)

In the case of **Bearing Bar Pitch 33mm C.T.C.**

SR	BEARING BAR SIZE (mm)		SPAN (mm)												
			1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2500	3000
1	3 x 25	Stress (Kg/Cm ²)	968	1171	1394	1635									
		Deflection (mm)	3.84	5.62	7.96	10.97									
2	3 x 30	Stress (Kg/Cm ²)	672	813	968	1136	1317	1512							
		Deflection (mm)	2.22	3.25	4.61	6.35	8.54	11.25							
3	3 x 40	Stress (Kg/Cm ²)	378	457	544	639	741	851	968	1092	1225	1365	1512		
		Deflection (mm)	0.94	1.37	1.94	2.68	3.60	4.75	6.14	7.83	9.84	12.22	15.00		
4	3 x 50	Stress (Kg/Cm ²)	242	293	348	409	474	544	619	699	784	873	968	1512	
		Deflection (mm)	0.48	0.70	1	1.37	1.84	2.43	3.15	4.01	5.04	6.26	7.68	18.75	
5	4 x 25	Stress (Kg/Cm ²)	726	878	1045	1227	1423	1633							
		Deflection (mm)	2.88	4.22	5.97	8.23	11.06	14.58							
6	4 x 30	Stress (Kg/Cm ²)	504	610	726	852	988	1134	1290	1457	1633	1820	2016		
		Deflection (mm)	1.67	2.44	3.46	4.76	6.41	8.44	10.92	13.92	17.5	21.72	26.67		
7	5 x 25	Stress (Kg/Cm ²)	581	703	836	981	1138	1306	1486						
		Deflection (mm)	2.3	3.37	4.78	6.58	8.85	11.66	15.1						
8	5 x 30	Stress (Kg/Cm ²)	403	488	581	681	790	907	1032	1165	1306	1456	1613		
		Deflection (mm)	1.33	1.95	2.76	3.81	5.12	6.75	8.74	11.14	14	17.38	21.33		
9	5 x 35	Stress (Kg/Cm ²)						667	758	856	960	1069	1185		
		Deflection (mm)						4.25	5.5	7.01	8.81	10.94	13.44		
10	5 x 40	Stress (Kg/Cm ²)						510	581	655	735	819	907	1418	
		Deflection (mm)						2.85	3.69	4.70	5.91	7.33	9.00	21.97	
11	5 x 50	Stress (Kg/Cm ²)						327	372	420	470	524	581	907	1306
		Deflection (mm)						1.46	1.89	2.41	3.02	3.78	4.61	11.25	23.33

NOTE: 1) Deflection criteria is as per BS4592 Part 1:1995 which states deflection to be limited to 10mm or 1/200 of the span, whichever is less. Thus, the SHADED AREA within the THICK LINE meets BS4592 Part 1:1995 criteria and it is recommended.

U.D.L. = Uniformly Distributed Load

2) Table is for Stress and Deflection with UDL 750Kg/M² (7.5KN/M²)

3) Permissible bending stress is 1650Kg/Cm²

4) Panel width considered is 990mm.

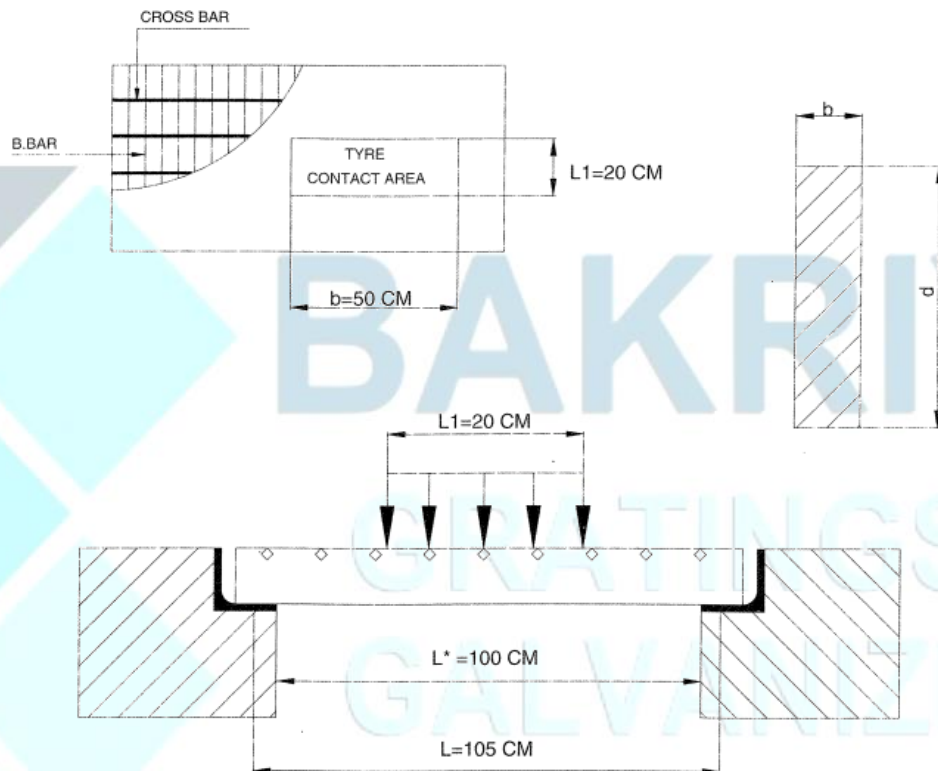
Description		Metric
Panel Width	Min	500mm
	Max	1200mm
Panel Length	Min	3400mm
	Max	7315mm
Bearing Bar height	Min	25mm
	Max	60mm
Bearing Bar thickness	Min	3mm
	Max	6mm
Bearing Bar pitch ³	Min	30mm
	Max	50mm
Cross wire thickness	Min	3mm
	Max	6.1mm ¹
Cross wire pitch ³	Min	36mm
	Max	102mm

¹ equivalent to 5.4mm across flats on twisted square

³ Actual pitches available are limited to tooling supplied as per table below

DESIGN CONDITIONS (IN THE CASE OF THE TRANSVERSE TRENCH):

- ❖ LOAD (W) = T - 8
- ❖ IMPACT FACTOR : $I = 0.4$
- ❖ CONTACT AREA OF TYPE : $L1 \times B = 20\text{CM} \times 50\text{CM}$
- ❖ PIT LENGTH (SPAN) : $L = L^* + 5\text{CM} = 105\text{CM}$
- ❖ ALLOWABLE STRESS : $FB = 1400\text{KG}/\text{CM}^2$ (ASTM A36 MATERIAL)
- ❖ PITCH BEARING BAR : $BBP = 33\text{MM}$ (3.3Cms)
- ❖ IMPACT LOAD : $P = 8,000 \times 1.4 = 11,200/4 = 2,800 \text{ Kgs... (Pw)}$



CALCULATIONS (AS PER SKETCHES):

1) BENDING MOVEMENT

$$M = Pw/8 (2L - L1) = 2800/8 \times (2 \times 105 - 20) = 66,500\text{KG}/\text{CM}$$

2) SECTION MODULUS OF BEARING BAR Z_s (CM^2)

THIS IS CALCULATED AS FOLLOWS:

ASSUME FLAT BAR OF 60 X 6MM $Z_s = B \cdot D^2/6$

B = FLAT BAR THICKNESS = 0.6CM

D = FLAT BAR DEPTH = 6CM

$$Z_s = 0.6 \times 6 \times 6/6 = 3.6\text{CM}^3$$

NUMBER OF BEARING BARS ON TIRE CONTACT AREA:

$$N = 50/3.3 + I = 16\text{PCS}$$

TOTAL SECTION MODULUS ON TIRE CONTACT AREA:

$$Z = N \times Z_s = 16 \times 3.6 = 57.6\text{CM}^3$$

3) STRESS CHECK

$$S = M/Z = 66,550/57.6 = 1,155.4\text{KG}/\text{CM}^2 < \text{FLAT BAR}$$

(THE SELECTED BEARING BAR (FB 6 X 60, PITCH 33MM) IS LESS THAN ALLOWABLE STRESS):

ASSUME IT IS THE SAME BEARING BAR, BUT PITCH IS 41MM THEN:

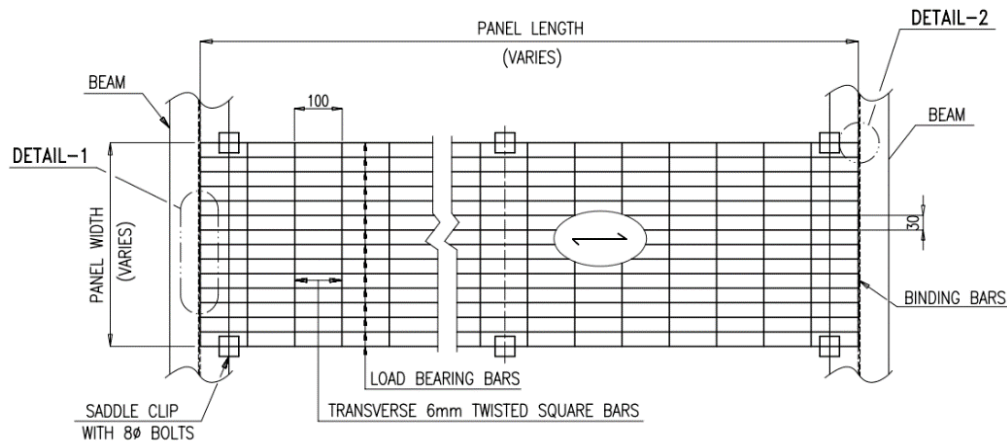
$$N = 50/4.1 + 1 = 13 \text{ PCS}$$

$$Z = 13 \times 3.6 = 46.8\text{CM}^2$$

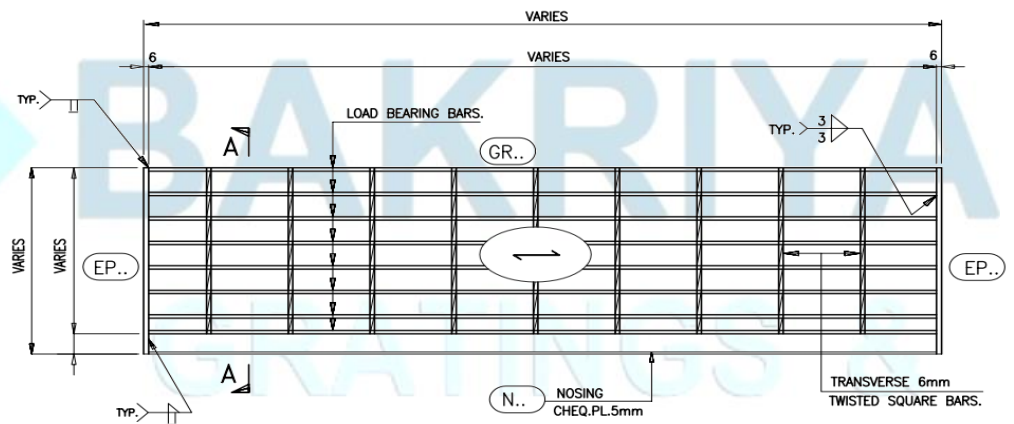
$$S = 66,500/46.8 = 1,420.9\text{KG}/\text{CM}^2$$

1,420 IS ALMOST EQUAL TO FLAT BAR

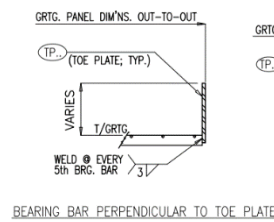
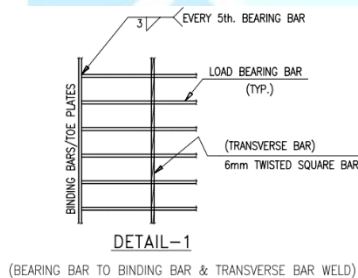
STANDARD GRATING'S WELD & STAIR TREAD DETAILS



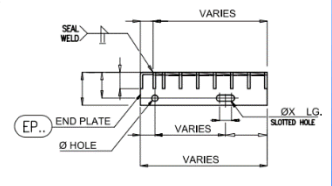
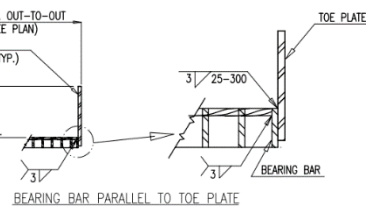
STANDARD GRATING PANEL



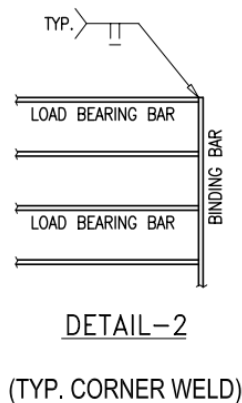
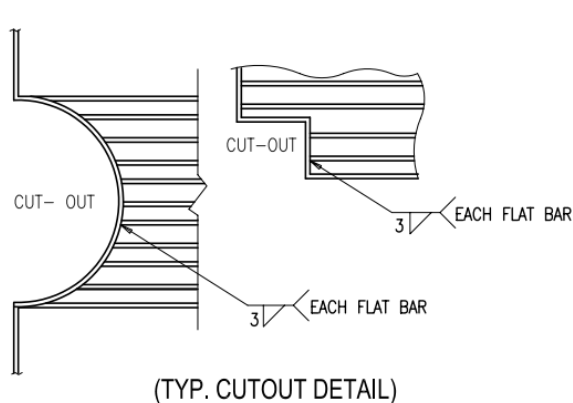
STANDARD STAIR TREAD ASS'Y. DETAILS.



TYP. TOE PLATE EDGE DETAIL.



SECTION A-A



GENERAL SHOP NOTES:

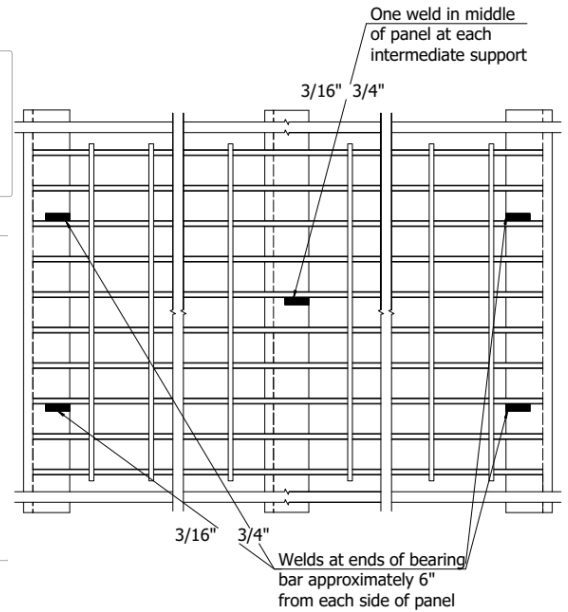
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. BINDING BARS TO BE FLUSH WITH ENDS OF BEARING BARS.
3. PENCIL GRIND TO REMOVE SLAG, ONLY IF NECESSARY.
4. ALL FILLET WELDS ARE 3mm (U.N O.)
5. MATERIAL FOR GRATINGS : ASTM-A36
6. TREATMENT: HOT DIP GALVANIZING ACCORDING TO ASTM A123.
7. FOR GRATING DETAILS & SPEC'S REFER ACTUAL SHOP DRAWINGS
8. → INDICATES LOAD BEARING BAR DIRECTION.

"STEEL GRATINGS CAN BE INSTALLED IN TWO WAYS:

WELDED INSTALLATION AND GRATING FASTENERS"

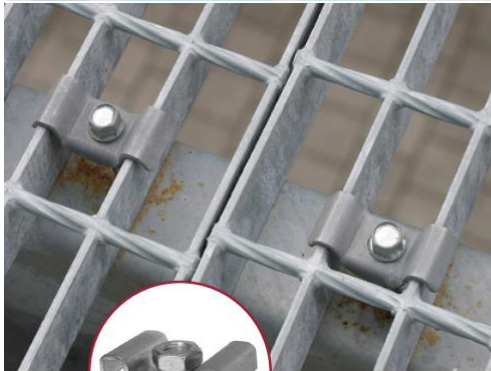
WELDED INSTALLATION:

WHEN STEEL GRATING NEEDS TO BE A PERMANENT INSTALLATION, WELDING IS HIGHLY RECOMMENDED TO FASTEN STEEL GRATING IN PLACE BY SECURING WELDING PANELS TO THE SUPPORTING STRUCTURE. THE DIAGRAM TO THE RIGHT SHOWS THE RECOMMENDED MINIMUM WELD SIZE AND SPACING FOR PEDESTRIAN APPLICATIONS.



GRATING FASTENERS:

WHEN STEEL GRATING IS DESIGNED TO BE REMOVABLE OR WHEN IS NOT PRACTICAL, GRATING FASTENERS ARE HIGHLY RECOMMENDED. THE MINIMUM FASTENER SPACING FOR PEDESTRIAN APPLICATIONS IS EQUAL TO THE MINIMUM WELD PATTERN ILLUSTRATED BELOW.



Saddle Clips

The saddle clip bridges two bearing bars and is attached with self-tapping bolt, self-threader, weld stud or bolt and nut.



G-Clips

This G-clip fastens grating to a horizontal-facing steel structural member edge.



Grate Fast Clips

This grate fast clip enables rapid and secure connection of open grate flooring to steel sections.

FIXING CLIPS ARE USED TO FIX GRATING PANELS ON THEIR RESPECTIVE SUPPORT BEAMS. THESE ARE SPECIAL SADDLE CLIPS, AS ILLUSTRATED ABOVE, CONSISTING OF:

- ❖ TOP CLIP : MOUNTED ON TOP OF THE BEARING BARS.
- ❖ BOTTOM CLIP : GRIPS THE SUPPORT BEAM.
- ❖ BOLT & NUT : HOLDS TOGETHER BOTH CLIPS FIXING GRATING TO THE SUPPORT BEAM.

HOW TO PLACE AN ORDER

OUR AIM IS TO STOCK SELF-COLORED 6M X 1M GRATING PANELS WITH LOAD BEARING BARS OF VARIABLE SIZES WITH THE FOLLOWING STANDARD PITCHES:

L.B.B. MM	PITCH MM	TYPE
25 x 3	30 / 100	PLAIN
25 x 5	30 / 100	PLAIN
30 x 3	30 / 100	PLAIN & SERRATED
30 x 5	30 / 100	PLAIN & SERRATED
32 x 5	30 / 100	PLAIN & SERRATED
40 x 3	30 / 100	PLAIN
40 x 5	30 / 100	PLAIN
45 x 5	30 / 100	PLAIN
50 x 5	30 / 100	PLAIN

When placing order, please specify the following:

- ✓ Load Bearing Bar (L.B.B) Size
- ✓ Pitch Size
- ✓ Panel Size
- ✓ Finish type (Galvanized / Painted)
- ✓ With or Without Binding Bar
- ✓ With or Without Fixing Clips
- ✓ Serrated Flat Bar or Plain Flat Bar

TOOLING INCLUDED IN QUOTE ⁶	METRIC
CROSS WIRE PITCHES⁷ NO. OF SETS INCLUDED: 7	37MM 40MM 50MM 60MM 75MM 80MM 100MM
LOAD BAR PITCHES⁸ NO. OF SETS INCLUDED: 4	25MM 30MM 33MM 41MM
CASTELLATED ELECTRODES SUITABLE FOR SMOOTH AND SERRATED LOAD BARS NO. OF SETS INCLUDED ^{8,9} : 4	25MM 30MM 33MM 41MM

⁶ If no sizes are specified, then pitch specification will be required at order placement.

⁷ One set of cross wire tooling covers two pitches, the second pitch being half the size of the first pitch.

⁸ One set of load bar tooling covers any multiple of that pitch.

⁹ Each load bar pitch requires its own electrodes.

¹⁶ Due to welding density at very short cross wire pitches, there is significant heat generated in the welded grating panel and to allow heat.



BAKRIYA INDUSTRIES CO. LTD.

CONTACT INFORMATION

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MOB. No.: **+966 56 833 3233**
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WEB: **WWW.BAKRIYA.COM**
COMPANY RE-ESTABLISHED DATE: **2022**
LEGAL STATUS: **LIMITED LIABILITY**
NATIONALITY: **100% SAUDI COMPANY**
PARENT COMPANY: **AHMED ALAMOUDI HOLDING GROUP**

BANK DETAILS

PAID UP CAPITAL: **SAUDI RIYALS 10,100,000**
BANK REFERENCES: **RIYAD BANK**
ACCOUNT No.: **1512130709941**
IBAN No.: **SA7220000001512130709941**
ADDRESS: **JEDDAH, SAUDI ARABIA**