

DEPENDABLE 
By World Standards



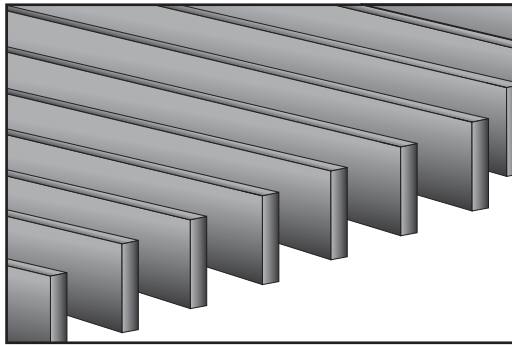
RATAN PROJECTS & ENGINEERING CO. PVT. LTD.
www.ratans.com

ELECTROFORGED GRATING

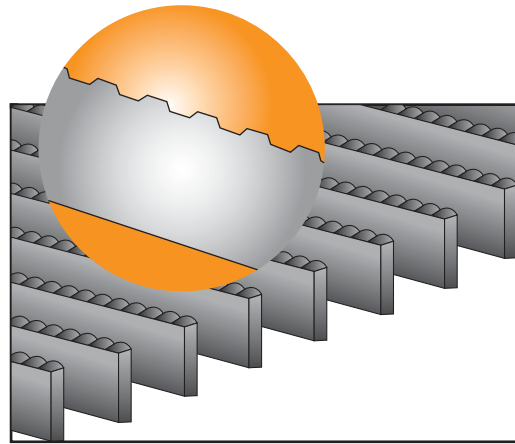
Electroforged Grating is PLC woven grid, pressed and welded in between load bearing bars with twisted cross bars that provides anti-skid floor surface, which allows air, light, heat, water etc. Electroforged machines cover comprehensive range of bearing bars (2-0.3 and 50.5 mm) and cross bars (6 - 10mm). The process obtains homogenous weld at every intersection without any scope of air gaps. The Grating thus manufactured do possess high stability, optimal strength and load distribution and also eliminates any cracks whatsoever.



TYPES OF GRATING

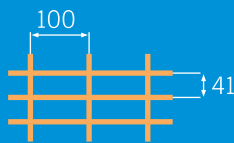


Plain

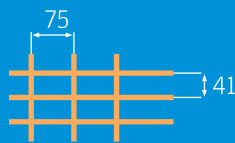


Serrated

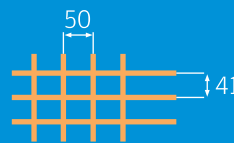
STANDARD OPEN STEEL GRATINGS



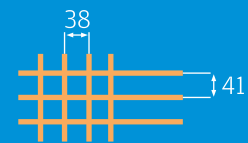
RFB 100



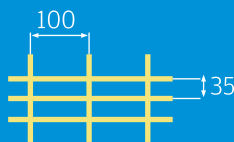
RFB 75



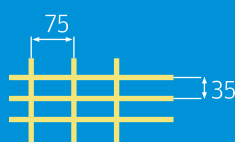
RFB 50



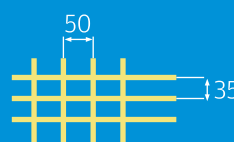
RFB 38



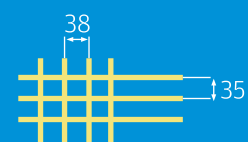
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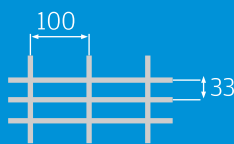
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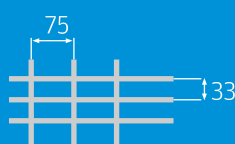
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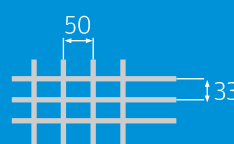
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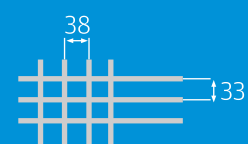
RFP 100



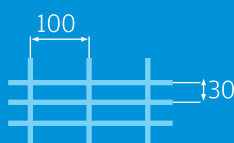
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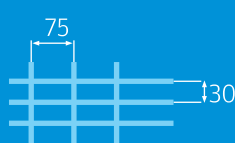
RFP 50



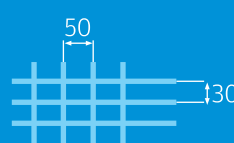
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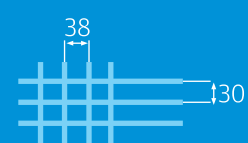
RFC 100



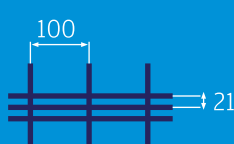
RFC 75



RFC 50



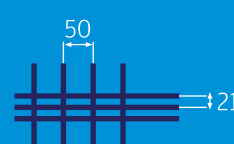
RFC 38



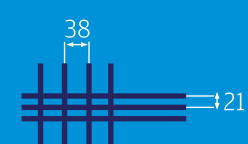
RFVC 100



RFVC 75



RFVC 50



RFVC 38

MATERIAL STANDARDS

Mild Steel

Ratan's Electroforged Gratings utilize high quality Mild Steel for load Bearing Bars & Cross Bar, which meets the requirement of IS 2062 GR A, ASTM A36, BS4360 Gr. 43 A, JIS G3101 SS400 & KSD3505 SB41.



MANUFACTURING STANDARD

Ratan's Electroforged Gratings are designed and manufactured in accordance with relevant international standards. The figures found in the load and Deflection tables are calculated in compliance to BS 4592 Part 1, 1987, while the manufacture of Ratan's Gratings conforms to the requirement of BS4592 1970, the Metal Bar Gratings division of the National Association of Architectural Metal Manufacturers (NAAMM) and Singapore Standards SS 363 - 1993.

SURFACE TREATMENT

Electroforged Gratings are normally catered in finishes :

Galvanizing : Hot Dip Galvanizing provides bright hygienic and maintenance free finish. The minimum average coating is adhered to standard : IS 4759, KS D8308, ASTM A123, BS 729, JIS H8641, rendering an average minimum coating of 610 gms/sq. mtr.

Painted : Customers' specs are usually pursued.

Untreated : Fabricated gratings may be delivered quickly but without any rust protection.



GALVANIZING PROCESS

Ratan's galvanizing Plant with seven tank system, is of international standard to deliver highest quality of corrosion resistance ensuring longevity of gratings.

Surface Preparation

Degreasing, rinsing, pickling etc are the basics of Ratan's pre-galvanizing treatment of surface.

Galvanizing

Post fluxing gratings are completely immersed in a bath of minimum 98% pure molten zinc at 460°C.

Finish

Excess zinc is brushed aside and finally quenched and dipped in dichromate solution to ensure long life.

Inspection

Physical and chemical test are conducted subsequently to check adherence, thickness, uniformity of coatings.

Order Placement Quotient

- Raw Material Standards and Quality
- Detailed approved drawings
- Frame Bar dimension
- Bearing Bar width / Grating height
- Bearing Bar span
- Cross Bar size
- Cross Bar spacing
- Panel size
- Finish : Galvanized / painted / untreated
- Accessoires : clamp type

ELECTROFORGED GRATING VIS-A-VIS MANUAL WELD GRATING

Electroforged Grating	Manual Weld Grating
Homogenous mix of Bearing Bar and Cross Bar	Heterogeneous combination of Bearing Bar and Cross Bar
Mass production enabled	Batch production only
Least time consuming process	More time consuming process
Economical ; less cost	Higher process cost
Superbly finished quality	Semi finished quality
Dimensionally accurate	Improper dimension at different sections
Anti slip grid square twisted bar used	Flat surface result into slipping tendency
Quick delivery due to EX-stock finish product	Not stockable
No air gaps between welded joints	Air gaps between welded joints causes corrosion
Meagre waste	More wastage

STAIR TREAD

Horizontal Electro Grating Stair Treads are absolutely slip resistant and most ideal at work place. The process of Bar forging always ensures extra grip specially where oil and lubricants are present. Ratan's can manufacture Stair Treads to any spec and length / width.

	Recommended Max Span			
Load Bar Size	25 x 3	25 x 5	32 x 5	40 x 5
Span 30 mm	550	900	1300	1600
Span 40 mm	450	750	1200	1500

Why Ratan's

Ratan's Electro Gratings Stair Treads with excellent features excel all standards.

Advantage : Ratan's Electro Gratings Stair Treads eliminate risk of accident in slippery environments

Availability : It is available in variety and variants of style and spacing to meet up different applications.

Durability : Electro forged gratings stair tread duly galvanized or paint coated do have high durability and strength which also protects from rust and atmospheric exposure.



Stair treads are utilized by countless industries for a vast array of applications. Stair treads applications to learn more:

- Anti-slip industrial stairway
- Dock stairway
- Non-slip airplane stairway
- School stairway
- Slip resistant commercial stairway
- Slip resistant ship/marine stairway
- Rolling stair platforms and landings
- Water & wastewater stair treads
- Packing platform lines
- Enclosed, semi-enclosed and open stairways

METRIC LOAD TABLE FOR ELECTROFORGE GRATINGS

41 mm center to center. Types RFB100 & RFB50.

Bearing Bar Size in mm	SPAN																		
	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400				
25x3	U	11000	4880	2740	1760	1230	900	680	Unit Stress - 1650 Kg/Sq m. U- Uniformly distributed load in kg/sq.m. C-Concetrated load in kg/meter width at mid-span. D-Deflection in Millimeters. Spans to left of heavy line produce a deflection of 6 mm or less under a uniform load of 500 kg/sq.m. This deflection is recommended as per BS 4592-1970										
	D	0.6	1.4	2.6	3.9	5.9	7.9	10.0											
25x5	C	1660	1100	820	660	550	470	410									850		
	D	0.5	1.1	2.0	3.1	4.3	6.1	8.0									12.7		
30x3	U	18300	8100	4560	2920	2020	1490	1150									780	680	600
	D	0.6	1.4	2.5	3.9	5.6	7.5	10.0									10.0	8.3	12.9
30x5	C	2740	1820	1370	1100	910	780	690									520	410	400
	D	0.5	1.1	2.0	3.1	4.3	6.1	8.0									8.3	9.4	10.3
35x3	U	22800	11700	6580	4210	2920	2150	1610									1300	1050	860
	D	0.5	1.1	2.1	3.2	4.3	5.4	6.5									7.2	10.8	12.9
35x5	C	3950	2630	1970	1580	1310	1130	980									870	780	710
	D	0.4	0.9	1.6	2.6	3.7	5.0	6.6									8.3	9.4	13.5
40x3	U	21500	9570	5320	3440	2390	1760	1340									1060	860	710
	D	0.4	1.0	1.8	2.8	3.9	5.2	7.1									9.0	11.1	13.5
40x5	C	3220	2150	1610	1290	1070	920	800									710	640	580
	D	0.3	0.8	1.4	2.3	3.2	4.3	5.7									7.2	8.6	10.8
50x3	U	35800	1590	8900	5700	3980	2920	2240	1770	1430	1180	990	840						
	D	0.4	1.0	1.8	2.8	3.9	5.2	7.1	9.0	11.1	13.5	16.6	19.6						
50x5	C	5380	3580	2680	2150	1790	1530	1340	1190	1070	980	890	820						
	D	0.3	0.8	1.4	2.3	3.2	4.3	5.7	7.2	8.6	10.8	13.1	15.7						
60x3	U	28100	12500	7100	4490	3100	2280	1740	1380	1120	920	770	660						
	D	0.3	0.8	1.5	2.4	3.5	4.8	6.2	7.9	9.7	11.8	13.8	16.4						
60x5	C	4200	2800	2110	1690	1400	1200	1050	930	840	760	700	640						
	D	0.3	0.7	1.2	2.1	2.8	3.9	4.9	6.3	7.7	9.4	11.2	13.0						
75x3	U	47200	20800	11700	7500	5200	3820	2920	2310	1860	1650	1230	1100	950	830				
	D	0.3	0.8	1.5	2.4	3.5	4.8	6.2	7.9	9.7	11.8	13.8	16.4	19.5	20.6				
75x5	C	7000	4680	3510	2800	2330	2010	1750	1560	1400	1270	1170	1080	1000	930				
	D	0.3	0.7	1.2	2.1	2.8	3.9	4.9	6.3	7.7	9.4	11.2	13.0	15.1	17.3				
90x3	U	59200	26300	14800	9500	6500	4830	3700	2920	2360	1950	1640	1400	1210	1050	960			
	D	0.3	0.8	1.3	2.2	3.1	4.2	5.6	7.0	8.6	10.5	12.4	14.6	16.9	19.9	22.1			
90x5	C	8900	5900	4490	3550	2960	2530	2220	1970	1760	1610	1480	1370	1270	1180	1110			
	D	0.2	0.6	1.0	1.7	2.5	3.4	4.4	5.6	6.9	8.3	9.9	11.7	13.5	15.5	17.7			
100x3	U	73100	32500	18300	11700	8100	5900	4570	3610	2920	2410	2030	1730	1490	1300	1140			
	D	0.3	0.7	1.2	2.0	2.8	3.8	5.0	6.3	7.8	9.4	11.2	13.2	15.2	17.5	19.9			
100x5	C	10900	7500	5500	4380	3660	3130	2740	2430	2190	1990	1830	1690	1560	1460	137			
	D	0.2	0.6	1.0	1.5	2.2	3.1	4.0	5.0	6.2	7.5	9.0	10.5	12.1	14.0	15.9			

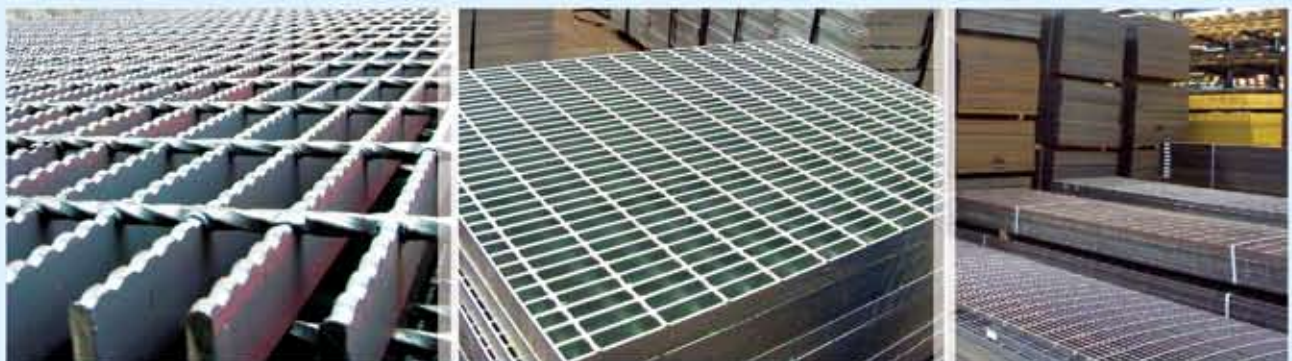
WEIGHT TABLE FOR ELECTROFORGE GRATINGS

BEARING BAR SIZE										
Mesh Size	25x3	25x5	30x3	30x5	35x3	35x5	40x3	40x5	50x3	50x5
41x100	18.10	28.69	21.28	33.99	24.45	39.29	27.63	44.59	33.99	55.19
35x100	21.04	33.60	24.81	39.88	28.58	46.16	32.34	52.44	39.88	65.00
33x100	21.63	34.58	25.51	41.06	29.40	47.53	33.29	54.01	41.06	66.96
30x100	23.40	37.53	27.63	44.59	31.87	51.66	36.11	58.72	44.59	72.85
21x100	32.82	53.23	38.94	63.43	45.06	73.64	51.18	83.84	63.43	104.25
41x75	18.98	29.57	22.16	34.87	25.33	40.17	28.51	45.47	34.87	56.07
35x75	21.92	34.48	25.69	40.76	29.46	47.04	33.22	53.32	40.76	65.88
33x75	22.51	35.46	26.39	41.94	30.28	48.41	34.17	54.89	41.94	67.84
30x75	24.28	38.41	28.51	45.47	32.75	52.54	36.99	59.60	45.47	73.73
21x75	33.70	54.11	39.82	64.31	45.94	74.52	52.06	84.72	64.31	105.13
41x50	20.30	30.89	23.48	36.19	26.65	41.49	29.83	46.79	36.19	57.39
35x50	23.24	35.80	27.01	42.08	30.78	48.36	34.54	54.64	42.08	67.20
33x50	23.83	36.78	27.71	43.26	31.60	49.73	35.49	56.21	43.26	69.16
30x50	25.60	39.73	29.83	46.79	34.07	53.86	38.31	60.92	46.79	75.05
21x50	35.02	55.43	41.14	65.63	47.26	75.84	53.38	86.04	65.63	106.45
41x38	21.84	32.43	25.02	37.73	28.19	43.03	31.37	48.33	37.73	58.93
35x38	24.78	37.34	28.55	43.62	32.32	49.90	36.08	56.18	43.62	68.74
33x38	25.37	38.32	29.25	44.80	33.14	51.27	37.03	57.75	44.80	70.70
30x38	27.14	41.27	31.37	48.33	35.61	55.40	39.85	62.46	48.33	76.59
21x38	36.56	56.97	42.68	67.17	48.80	77.38	54.92	87.58	67.17	107.99

The above weight are considering cross bar size of square twisted 6 mm across.

For other types of gratings, multiply the above figures with the following factor :

Type	RFVC 100/50	RFC 100/50	RFP 100/50
Load Factor	1.5	1.3	1.2



IMPERIAL LOAD TABLE FOR ELECTROFORGE GRATINGS

30 mm center to center. Type RFC 100 & RFC 50.

Bar Size	Ped Span	Sec. Mod. Per Ft. of Width	CLEAR SPAN															
			2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	8'-0"	9'-0"			
1" x 1/8"	51"	.211	U	632	404	281	206	158	125	101	84	70	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.					
			D	.074	.116	.168	.228	.298	.377	.466	.563	.670						
			C	632	505	421	361	316	281	253	230	211						
			D	.060	.093	.134	.182	.238	.302	.372	.451	.536						
1" x 3/16"	57"	.316	U	947	606	421	309	237	187	152	125	105	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.					
			D	.074	.116	.168	.228	.298	.377	.466	.563	.670						
			C	947	758	632	541	474	421	379	344	316						
			D	.060	.093	.134	.182	.238	.302	.372	.451	.536						
1-1/4" x 1/8"	61"	.329	U	987	632	439	332	247	195	158	130	110	93	81	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.			
			D	.060	.093	.134	.182	.238	.302	.372	.451	.536	.629	.730				
			C	987	789	658	564	493	439	395	359	329	304	282				
			D	.048	.074	.107	.146	.191	.241	.298	.360	.429	.504	.584				
1-1/4" x 3/16"	67"	.493	U	1480	947	658	483	370	292	237	196	164	140	121	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.			
			D	.060	.093	.134	.182	.238	.302	.372	.451	.536	.629	.730				
			C	1480	1184	987	846	740	658	592	538	493	455	423				
			D	.048	.074	.107	.146	.191	.241	.298	.360	.429	.504	.584				
1-1/2" x 1/8"	70"	.474	U	1421	909	632	464	355	281	227	188	158	135	116	89	70	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.	
			D	.050	.078	.112	.152	.199	.251	.310	.376	.447	.524	.608	.794	1.006		
			C	1421	1137	947	812	711	632	568	517	474	437	406	355	316		
			D	.040	.062	.089	.122	.159	.201	.248	.300	.358	.420	.487	.636	.804		
1-1/2" x 3/16"	77"	.711	U	2132	1364	947	696	533	421	341	282	237	202	174	133	105	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.	
			D	.050	.078	.112	.152	.199	.251	.310	.376	.447	.524	.608	.794	1.006		
			C	2132	1705	1421	1218	1066	947	853	775	711	.656	609	533	474		
			D	.040	.062	.089	.122	.159	.201	.248	.300	.358	.420	.487	.636	.804		
1-3/4" x 3/16"	87"	.967	U	2901	1857	1289	947	725	573	464	384	322	275	237	181	143	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.	
			D	.043	.067	.096	.130	.170	.215	.266	.322	.383	.450	.521	.681	.862		
			C	2901	2321	1934	1658	1451	1289	1161	1055	967	893	829	725	645		
			D	.034	.053	.077	.104	.136	.172	.213	.257	.306	.360	.417	.545	.689		
2" x 3/16"	96"	1.263	U	3789	2425	1684	1237	947	749	606	501	421	359	309	237	187	U = Safe uniform load, lb/sq.ft. C = Safe connectrated load, lb/sq.ft. of grating width, at mid-span. D = Deflection in inches. Date is theory and based on 18.000psi. Install with cross rods on top.	
			D	.037	.058	.084	.114	.149	.189	.233	.282	.335	.393	.456	.596	.754		
			C	3789	3032	2526	2165	1895	1684	1516	1378	1263	1166	1083	947	842		
			D	.030	.047	.067	.091	.119	.151	.186	.225	.268	.315	.365	.477	.603		

ELECTROFORGED GRATING **APPLICATION**





Electroforged Gratings & Stair Tread

GI Structure (for Switchyard, Transmission Towers,
Railways & Telecom) & Accessories

Cable Tray Support (Struct Type - C1 / C2 &
Accessories) & Weldable Support

Cable Trays & Accessories

Earthing Materials & Accessories

Cable Glands

Cable Lugs



RATAN PROJECTS & ENGINEERING CO. PVT. LTD.

26, Prasanna Kumar Tagore Street, Main Building
Kolkata - 700 006, West Bengal (INDIA)

Phone : +91 33 2530 7676 / 2533 6199 / 2533 6234, Fax : +91 33 2555 3928

Email : info@ratans.com / ratans@cal.vsnl.net.in, Website : www.ratans.com