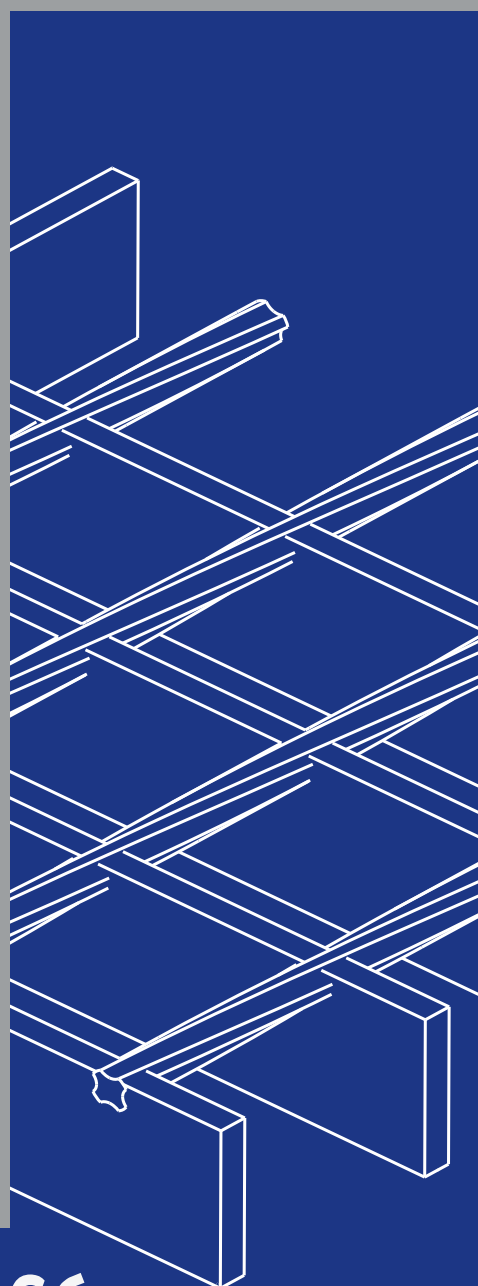
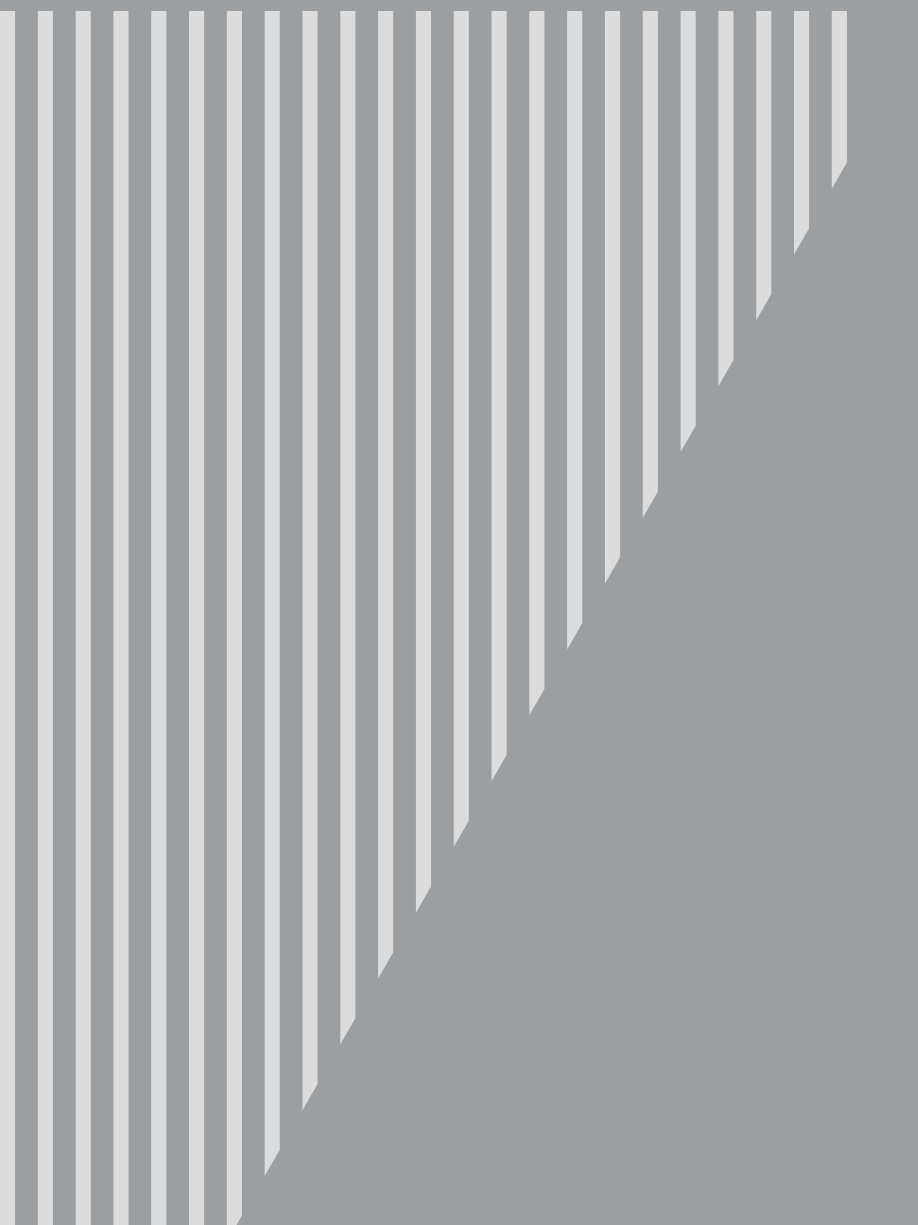




PLATFORM GRATINGS



**MAKE THE BEST
OF OUR EXPERIENCE!**

**MEN ACT
MEN WORK
MEN WALK
AND PURSUE THEIR GOALS**

**QUO VADIS? ...
OR RATHER 'QUA VADIS?'
WHAT ARE YOU WALKING ON?**

WHAT ARE MEN WALKING ON?

The important things are:
solid and steady support for your feet,
full confidence of safety,
durability and reliability.
It is sufficient to think of another goal

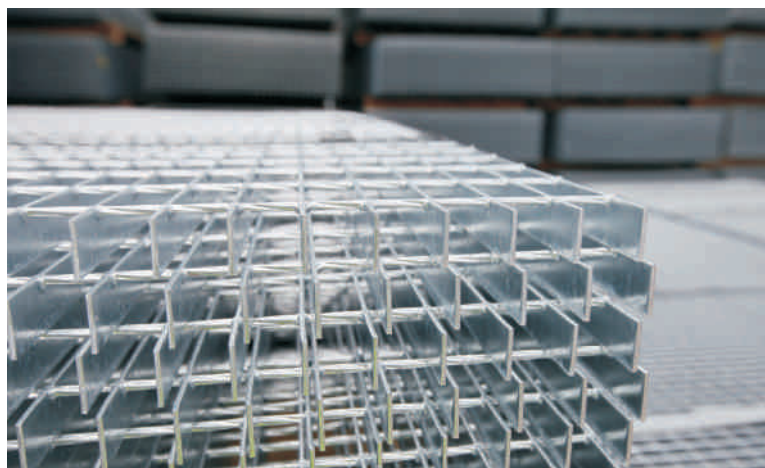
The answer: PLATFORM GRATINGS

that meet
THE TOP QUALITY STANDARDS
thanks to
THE STATE-OF-THE-ART TECHNOLOGY
OF MANUFACTURE
AND THE ANTICORROSIVE PROTECTION

**THE ANSWER: PLATFORM GRATINGS
BY POLIMEX-MOSTOSTAL S.A. –
THE MANUFACTURER OF PLATFORM GRATINGS**

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INTRODUCTION

We commenced the **PRODUCTION OF PLATFORM GRATINGS** as early as in 1978 using the technology applied by the largest grating manufacturers in Europe.

We manufacture PLATFORM GRATINGS according to the requirements of the following standards: **DIN 24537, BS, ASTM**. The **ANTICORROSIVE PROTECTION** of our gratings is provided by the hot-dip zinc coating process according to **EN ISO 1461, DIN 50976, BS729, ASTM A123**; at the Customer's request, we coat our gratings with paint or use the **DUPLEX** method (hot-dip zinc coating + painting).

Our products have a broad application spectrum.

WALKING HORIZONTALLY

We use gratings as landings at industrial plants, warehouses and marine power plants, as well as platforms of overhead travelling grates and staircases, or covers of pits. We walk on them when they create transport routes along pipelines and reservoirs, as well as the surfaces of foot and other bridges and the components of racks.

Platform gratings covering pits and hatchways perform the function of a protection against accidents.

CLIMBING UP AND DOWN

We climb gratings up and down when they form the steps of various industrial stairways (both straight and spiral, high and low) inside and outside of buildings, access paths to equipment in industrial buildings, warehouses and shipbuilding industry.

OTHER VERTICAL AND HORIZONTAL APPLICATIONS

Another, a bit more unconventional, application of platform gratings is their use as the decorations or the components of stage design of various indoor and outdoor cultural events, e.g. as stages, landings or runways. They can be also used as: facades, fencing segments, components of municipal architecture, ramps for the disabled, grates surrounding trees or doormats in public utility facilities.

The wide variety of sizes, shapes and types of platform gratings decides about the richness of the market offer of **POLIMEX-MOSTOSTAL S.A.**

Let's have a closer look...



Due to the technology of production and the workmanship, we present our platform gratings in division into:

WELDED PLATFORM GRATINGS
PRESSED PLATFORM GRATINGS

Additionally, we present other types of platform gratings, such as **FULL PRESSED GRATINGS, LOUVERED GRATINGS AND OFF-SHORE GRATINGS**. In case of each type of gratings, we discuss its **SERRATED** version (with increased coefficient of friction).

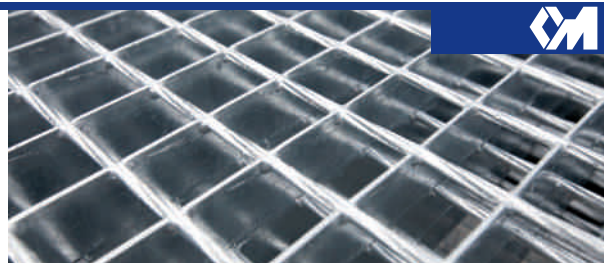
We also present offered by us types of **MOUNTINGS FOR COMBINING AND FITTING OF GRATINGS** and the **METHODS OF INSTALLATION OF GRATINGS ON PLATFORMS**.

We describe the **STEPS** manufactured based on welded and pressed gratings – also in the **SERRATED** anti-slip version.

We present **SPIRAL AND STRAIGHT STAIRS**.

WELDED PLATFORM GRATINGS according to DIN 24537, or ITB or IBDiM Technical Approvals.

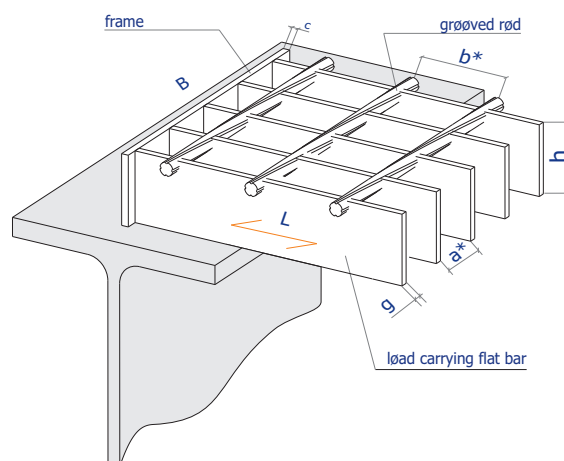
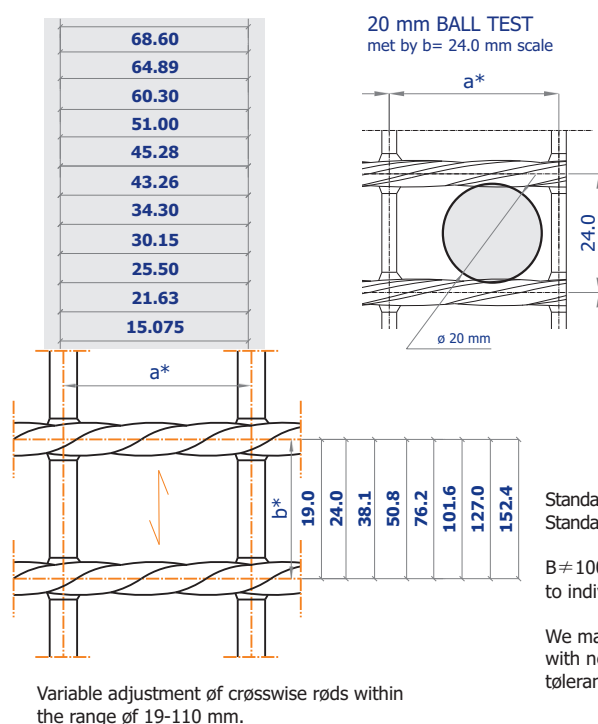
We make our welded gratings of load carrying flat bars with various dimensions and specially prepared interconnecting crosswise rods. The rods are resistance welded to the load carrying flat bars, the same creating a very stable and repeatable product protecting the grating against damage during its use. The products of the welding process are standard 6100 mm x 1000 mm components (grating plates). During further processing, the plates are cut to specified dimensions (gratings), framed and protected against corrosion.



PMX welded gratings have many different applications. The significant durability of PXM gratings proves in places with difficult conditions of use. PXM gratings are used in metallurgy, chemical industry, shipbuilding, power engineering, mining, etc. Depending on the loads to be carried by the platform gratings, different sizes of mesh and load carrying flat bars are used.

Welded gratings meet the requirements of RAL-GZ 638.

MESH SIZES OF WELDED GRATINGS (manufacturing potential)



Standard max length of a grating L=6100 mm
Standard max width of a grating B=1000 mm

B ≠ 1000 mm width gratings are made to individual orders.

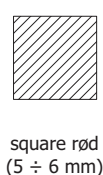
We manufacture welded gratings with negative tolerance of +0/-4 [mm].

Key

- a - load carrying flat bar scale
- b - crosswise rod scale
- * - dimensions in axes [mm]
- h - load carrying flat bar height
- g - load carrying flat bar thickness
- B - grating width
- L - grating length
- ↔ - marking of the direction of the load carrying flat bar

Other possible designs of gratings (mesh sizes, flat bars, L and B of the grating) after relevant arrangements with the sales department.

CROSSWISE ROD PROFILES



Frame – as a standard, made of a flat bar with the same height as the one of the grating load carrying flat bar or tailored to individual needs after relevant

MARKING

KOZ – Framed welded gratings
KNZ – Non-framed welded gratings
type of grating/mesh size/load carrying flat bar/grating size/quantity
KOZ / 34x38 / 30x2 / L=800xB=1000 / 50 szt.

Types of load carrying flat bars

h	mm	25	35	50	25	35	50	25	35	50	70	25	35	50	70	25	35	50	70	35	50	70	
g		20	30	40	20	30	40	60	30	40	60	30	40	60	80	30	40	60	80	30	40	60	80
		2			3			4			5			6			8						



Typical widths of platform gratings for fixed load carrying flat bar scales

„n“ number of scales	For scale a=15.075mm Load carrying flat bar thickness [mm]		
	g=2	g=3	g=4
1	17	18	19
2	32	33	34
3	47	48	49
4	62	63	64
5	77	78	79
6	92	93	94
7	108	109	110
8	123	124	125
9	138	139	140
10	153	154	155
11	168	169	170
12	183	184	185
13	198	199	200
14	213	214	215
15	228	229	230
16	243	244	245
17	258	259	260
18	273	274	275
19	288	289	290
20	304	305	306
21	319	320	321
22	334	335	336
23	349	350	351
24	364	365	366
25	379	380	381
26	394	395	396
27	409	410	411
28	424	425	426
29	439	440	441
30	454	455	456
31	469	470	471
32	484	485	486
33	499	500	501
34	515	516	517
35	530	531	532
36	545	546	547
37	560	561	562
38	575	576	577
39	590	591	592
40	605	606	607
41	620	621	622
42	635	636	637
43	650	651	652
44	665	666	667
45	680	681	682
46	695	696	697
47	711	712	713
48	726	727	728
49	741	742	743
50	756	757	758
51	771	772	773
52	786	787	788
53	801	802	803
54	816	817	818
55	831	832	833
56	846	847	848
57	861	862	863
58	876	877	878
59	891	892	893
60	907	908	909
61	922	923	924
62	937	938	939
63	952	953	954
64	967	968	969
65	982	983	984
66	997	998	999

Table 1

„n“ number of scales	For scale a=21.63mm Load carrying flat bar thickness [mm]			
	g=2	g=3	g=4	g=5
1	24	25	26	27
2	45	46	47	48
3	67	68	69	70
4	89	90	91	92
5	110	111	112	113
6	132	133	134	135
7	153	154	155	156
8	175	176	177	178
9	197	198	199	200
10	218	219	220	221
11	240	241	242	243
12	262	263	264	265
13	283	284	285	286
14	305	306	307	308
15	326	327	328	329
16	348	349	350	351
17	370	371	372	373
18	391	392	393	394
19	413	414	415	416
20	435	436	437	438
21	456	457	458	459
22	478	479	480	481
23	499	500	501	502
24	521	522	523	524
25	543	544	545	546
26	564	565	566	567
27	586	587	588	589
28	608	609	610	611
29	629	630	631	632
30	651	652	653	654
31	673	674	675	676
32	694	695	696	697
33	716	717	718	719
34	737	738	739	740
35	759	760	761	762
36	781	782	783	784
37	802	803	804	805
38	824	825	826	827
39	846	847	848	849
40	867	868	869	870
41	889	890	891	892
42	910	911	912	913
43	932	933	934	935
44	954	955	956	957
45	975	976	977	978
46	997	998	999	1000

Table 2

B (grating width) = $n \times \text{scale} + g$ (load carrying flat bar thickness)

SELECTION OF THE WELDED GRATINGS WIDTH

In order to ensure low cost of manufacture of welded gratings, the repeatability of the grating module with width $B=1000$ mm should be taken into consideration. Gratings with $B=1000$ mm should be used for covering of the largest possible surface of a pit or a landing. Similarly, the lengths of the gratings should be repeatable. We make the last grating with the width B corresponding to the actual dimensions of the area of the landing or the pit to be covered.

Due to aesthetic, and especially installation related considerations, it is advisable to use grating dimensions ensuring the full size of the terminal mesh gaps.

Typical widths of platform gratings for fixed load carrying flat bar scales

Table 3

„n” number of scales	For scale a=25.5 mm Load carrying flat bar thickness [mm]			
	g=2	g=3	g=4	g=5
1	28	29	30	31
2	53	54	55	56
3	79	80	81	82
4	104	105	106	107
5	130	131	132	133
6	155	156	157	158
7	181	182	183	184
8	206	207	208	209
9	232	233	234	235
10	257	258	259	260
11	283	284	285	286
12	308	309	310	311
13	334	335	336	337
14	359	360	361	362
15	385	386	387	388
16	410	411	412	413
17	436	437	438	439
18	461	462	463	464
19	487	488	489	490
20	512	513	514	515
21	538	539	540	541
22	563	564	565	566
23	589	590	591	592
24	614	615	616	617
25	640	641	642	643
26	665	666	667	668
27	691	692	693	694
28	716	717	718	719
29	742	743	744	745
30	767	768	769	770
31	793	794	795	796
32	818	819	820	821
33	844	845	846	847
34	869	870	871	872
35	895	896	897	898
36	920	921	922	923
37	946	947	948	949
38	971	972	973	974
39	997	998	999	1000

Table 4

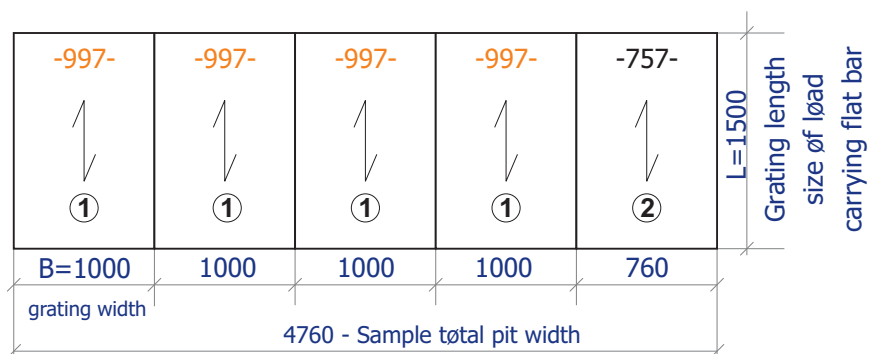
„n” number of scales	For scale a=34.3 mm Load carrying flat bar thickness [mm]					
	g=2	g=3	g=4	g=5	g=6	g=8
1	36	37	38	39	40	42
2	71	72	73	74	75	77
3	105	106	107	108	109	111
4	139	140	141	142	143	145
5	174	175	176	177	178	180
6	208	209	210	211	212	214
7	242	243	244	245	246	248
8	276	277	278	279	280	282
9	311	312	313	314	315	317
10	345	346	347	348	349	351
11	379	380	381	382	383	385
12	414	415	416	417	418	420
13	448	449	450	451	452	454
14	482	483	484	485	486	488
15	517	518	519	520	521	523
16	551	552	553	554	555	557
17	585	586	587	588	589	591
18	619	620	621	622	623	625
19	654	655	656	657	658	660
20	688	689	690	691	692	694
21	722	723	724	725	726	728
22	757	758	759	760	761	763
23	791	792	793	794	795	797
24	825	826	827	828	829	831
25	860	861	862	863	864	866
26	894	895	896	897	898	900
27	928	929	930	931	932	934
28	962	963	964	965	966	968
29	997	998	999	1000	1001	1003

IMPORTANT

The above tables specify the grating widths for full size terminal mesh gaps for fixed scales of load carrying flat bars of PXM platform gratings. Ordering PXM platform gratings with full terminal mesh gaps ensures **the lowest cost of purchase and the shortest time of manufacture.**

B (grating width) = $n \times \text{scale} + g$ (load carrying flat bar thickness)

EXAMPLE OF INSTALLATION OF TYPICAL WIDTH GRATINGS



Legenda

L - Grating length
B - Typical grating width

① - Filling of a pit with typical width gratings
② - Filling with a grating tailored to the remaining width of the pit

↔ - marking of the direction of the load carrying flat bar



Material: Steel. Analytical value of safety factor γ=1.5.																							
a x b 15.075 x 24.0 15.075 x 38.1		Loads according to the below table				a x b 15.075 x 50.8 15.075 x 76.2 15.075 x 101.6				Loads according to the below table minus 5%				a - load carrying flat bar scale									
														b - crosswise rod scale									
																							
load carrying flat bar		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
20 x 2	Fv	4434	3079	2262	1732	1369	1109	916	770	656	566	493	433	384	342	307	277	251	229	210	192	177	
	fV	1.94	2.8	3.81	4.97	6.29	7.77	9.4	11.19	13.13	15.23	17.49	19.89	22.46	25.18	28.05	31.08	34.27	37.61	41.11	44.76	48.57	
	Fp	324	259	216	185	162	144	130	118	108	100	93	86	81	76	72	68	65	62	59	56	54	
	fP	1.8	2.55	3.42	4.41	5.53	6.78	8.14	9.64	11.25	12.99	14.86	16.85	18.96	21.2	23.56	26.05	28.66	31.4	34.26	37.24	40.35	
20 x 3	Fv	6651	4619	3393	2598	2053	1663	1374	1155	984	848	739	650	575	513	461	416	377	344	314	289	266	
	fV	1.94	2.8	3.81	4.97	6.29	7.77	9.4	11.19	13.13	15.23	17.49	19.89	22.46	25.18	28.05	31.08	34.27	37.61	41.11	44.76	48.57	
	Fp	486	389	324	278	243	216	194	177	162	150	139	130	122	114	108	102	97	93	88	85	81	
	fP	1.8	2.55	3.42	4.41	5.53	6.78	8.14	9.64	11.25	12.99	14.86	16.85	18.96	21.2	23.56	26.05	28.66	31.4	34.26	37.24	40.35	
25 x 2	Fv	6928	4811	3535	2706	2138	1732	1431	1203	1025	884	770	677	599	535	480	433	393	358	327	301	277	
	fV	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19	13.99	15.92	17.97	20.14	22.44	24.87	27.42	30.09	32.89	35.81	38.86	
	Fp	504	404	336	288	252	224	202	183	168	155	144	135	126	119	112	106	101	96	92	88	84	
	fP	1.44	2.04	2.74	3.53	4.43	5.42	6.52	7.71	9	10.39	11.89	13.48	15.17	16.96	18.85	20.84	22.93	25.12	27.4	29.79	32.28	
25 x 3	Fv	10392	7217	5302	4060	3208	2598	2147	1804	1537	1326	1155	1015	899	802	720	650	589	537	491	451	416	
	fV	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19												

- Fv** - constant load value (daN/m²)
- fv** - deflection (cm) under load Fv
- Fp** - concentrated load on 200x200 mm area
- fp** - deflection (cm) under load Fp

- Permitted tension for steel: **1600** daN/cm²
- Safety factor to the yield point: **1,5**
- Safety factor to the tearing resistance limit: **2,35**
- Grating support = grating height
(not less than 30 mm)

■ Within this range, the grating can accommodate 150 daN moving load at a discretionary point at maximum deflection of 1/200 of the support spacing.

■ Within this range, the maximum deflection at 500 daN/m² continuous load is 1/200 of the support spacing.

Table of loads of welded gratings for scale a = 21.63 mm

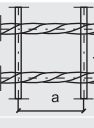
Material: Steel. Analytical value of safety factor $\gamma=1.5$.										a - load carrying flat bar scale															
$a \times b$ 21.63 x 24.0 21.63 x 38.1		Loads according to the below table		$a \times b$ 21.63 x 50.8 21.63 x 76.2 21.63 x 101.6		Loads according to the below table minus 5%				b - crosswise rod scale															
load carrying flat bar		Supports spacing [mm]																							
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500			
20 x 2	Fv	3090	2146	1577	1207	954	773	639	537	457	394	343	302	267	238	214	193	175	160	146	134	124			
	f _v	1.94	2.8	3.81	4.97	6.29	7.77	9.4	11.19	13.13	15.23	17.49	19.89	22.46	25.18	28.05	31.08	34.27	37.61	41.11	44.76	48.57			
	Fp	240	192	160	137	120	107	96	87	80	74	69	64	60	57	53	51	48	46	44	42	40			
	f _p	1.8	2.55	3.42	4.41	5.53	6.78	8.14	9.64	11.25	12.99	14.86	16.85	18.96	21.2	23.56	26.05	28.66	31.4	34.26	37.24	40.35			
20 x 3	Fv	4636	3219	2365	1811	1431	1159	958	805	686	591	515	453	401	358	321	290	263	239	219	201	185			
	f _v	1.94	2.8	3.81	4.97	6.29	7.77	9.4	11.19	13.13	15.23	17.49	19.89	22.46	25.18	28.05	31.08	34.27	37.61	41.11	44.76	48.57			
	Fp	360	288	240	206	180	160	144	131	120	111	103	96	90	85	80	76	72	69	65	63	60			
	f _p	1.8	2.55	3.42	4.41	5.53	6.78	8.14	9.64	11.25	12.99	14.86	16.85	18.96	21.2	23.56	26.05	28.66	31.4	34.26	37.24	40.35			
25 x 2	Fv	4829	3353	2464	1886	1490	1207	998	838	714	616	537	472	418	373	334	302	274	249	228	210	193			
	f _v	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19	13.99	15.92	17.97	20.14	22.44	24.87	27.42	30.09	32.89	35.81	38.86			
	Fp	373	299	249	213	187	166	149	136	124	115	107	100	93	88	83	79	75	71	68	65	62			
	f _p	1.44	2.04	2.74	3.53	4.43	5.42	6.52	7.71	9	10.39	11.89	13.48	15.17	16.96	18.85	20.84	22.93	25.12	27.4	29.79	32.28			
25 x 3	Fv	7243	5030	3695	2829	2236	1811	1496	1257	1071	924	805	707	627	559	502	453	411	374	342	314	290			
	f _v	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19	13.99	15.92	17.97	20.14	22.44	24.87	27.42	30.09	32.89	35.81	38.86			
	Fp	560	448	373	320	280	249	224	204	187	172	160	149	140	132	124	118	112	107	102	97	93			
	f _p	1.44	2.04	2.74	3.53	4.43	5.42	6.52	7.71	9	10.39	11.89	13.48	15.17	16.96	18.85	20.84	22.93	25.12	27.4	29.79	32.28			
25 x 4	Fv	9657	6707	4927	3772	2981	2414	1995	1677	1429	1232	1073	943	835	745	669	604	547	499	456	419	386			
	f _v	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19	13.99	15.92	17.97	20.14	22.44	24.87	27.42	30.09	32.89	35.81	38.86			
	Fp	747	597	498	427	373	332	299	271	249	230	213	199	187	176	166	157	149	142	136	130	124			
	f _p	1.44	2.04	2.74	3.53	4.43	5.42	6.52	7.71	9	10.39	11.89	13.48	15.17	16.96	18.85	20.84	22.93	25.12	27.4	29.79	32.28			
25 x 5	Fv	12072	8383	6159	4716	3726	3018	2494	2096	1786	1540	1341	1179	1044	931	836	754	684	624	570	524	483			
	f _v	1.55	2.24	3.05	3.98	5.04	6.22	7.52	8.95	10.51	12.19	13.99	15.92	17.97	20.14	22.44	24.87	27.42	30.09	32.89	35.81	38.86			
	Fp	933	747	622	533	467	415	373	339	311	287	267	249	233	220	207	196	187	178	170	162	156			
	f _p	1.44	2.04	2.74	3.53	4.43	5.42	6.52	7.71	9	10.39	11.89	13.48	15.17	16.96	18.85	20.84	22.93	25.12	27.4	29.79	32.28			
30 x 2	Fv	6953	4829	3548	2716	2146	1738	1437	1207	1029	887	773	679	601	537	482	435	394	359	329	302	278			
	f _v	1.3	1.87	2.54	3.32	4.2	5.18	6.27	7.46	8.76	10.15	11.66	13.26	14.97	16.79	18.7	20.72	22.85	25.07	27.41	29.84	32.38			
	Fp	535	428	356	306	267	238	214	194	178	165	153	143	134	126	119	113	107	102	97	93	89			
	f _p	1.2	1.7	2.28	2.94	3.69	4.52	5.43	6.42	7.5	8.66	9.91	11.23	12.64	14.13	15.71	17.37	19.11	20.93	22.84	24.83	26.9			
30 x 3	Fv	10430	7243	5321	4074	3219	2607	2155	1811	1543	1330	1159	1019	902	805	722	652	591	539	493	453	417			
	f _v	1.3	1.87	2.54	3.32	4.2	5.18	6.27	7.46	8.76	10.15	11.66	13.26	14.97	16.79	18.7	20.72	22.85	25.07	27.41	29.84	32.38			
	Fp	802	642	535	458	401	356	321	292	267	247	229	214	201	189	178	169	160	153	146	139	134			
	f _p	1.2	1.7	2.28	2.94	3.69	4.52	5.43	6.42	7.5	8.66	9.91	11.23	12.64	14.13	15.71	17.37	19.11	20.93	22.84	24.83	26.9			
30 x 4	Fv	13907	9657	7095	5432	4292	3477	2873	2414	2057	1774	1545	1358	1203	1073	963	869	788	718	657	604	556			
	f _v	1.3	1.87	2.54	3.32	4.2	5.18	6.27	7.46	8.76	10.15	11.66	13.26	14.97	16.79	18.7	20.72	22.85	25.07	27.41	29.84	32.38			
	Fp	1069	856	713	611	535	475	428	389	356	329	306	285	267	252	238	225	214	204	194	186	178			
	f _p	1.2	1.7	2.28	2.94	3.69	4.52	5.43	6.42	7.5	8.66	9.91	11.23	12.64	14.13	15.71	17.37	19.11	20.93	22.84	24.83	26.9			
30 x 5	Fv	17383	12072	8869	6790	5365	4346	3592	3018	2571	2217	1931	1698	1504	1341	1204	1086	985	898	822	754	695			
	f _v	1.3	1.87	2.54	3.32	4.2	5.18	6.27	7.46	8.76	10.15	11.66	13.26	14.97	16.79	18.7	20.72	22.85	25.07	27.41	29.84	32.38			
	Fp	1337	1069	891	764	668	594	535	486	446	411	382	356	334	315	297	281	267	255	243	232	223			
	f _p	1.2	1.7	2.28	2.94	3.69	4.52	5.43	6.42	7.5	8.66	9.91	11.23	12.64	14.13	15.71	17.37	19.11	20.93	22.84	24.83	26.9			
40 x 2	Fv	12361	8584	6307	4829	3815	3090	2554	2146	1829	1577	1373	1207	1069	954	856	773	701	639	584	537	494			
	f _v	0.97	1.4	1.9	2.49	3.15	3.89	4.7	5.6	6.57	7.62	8.74	9.95	11.23	12.59	14.03	15.54	17.14	18.81	20.55	22.38	24.28			
	Fp	941	752	627	537	470	418	376	342	314	289	269	251	235	221	209	198	188	179	171	164	157			
	f _p	0.9	1.27	1.71	2.21	2.77	3.39	4.07	4.82	5.63	6.5	7.43	8.42	9.48	10.6	11.78	13.02	14.33	15.7	17.13	18.62	20.17			
40 x 3	Fv	18542	12876	9460	7243	5723	4636	3831	3219	2743	2365	2060	1811	1604	1431	1284	1159	1051	958	876	805	742			
	f _v	0.97	1.4	1.9	2.49	3.15	3.89	4.7	5.6	6.57	7.62	8.74	9.95	11.23	12.59	14.03	15.54	17.14	18.81	20.55	22.38	24.28			
	Fp	1411	1129	941	806	705	627	564	513	470	434	403	376	353	332	314	297	282	269	257	245	235			
	f _p	0.9	1.27	1.71	2.21	2.77	3.39	4.07	4.82	5.63	6.5	7.43	8.42	9.48	10.6	11.78	13.02	14.33	15.7	17.13	18.62	20.17			
40 x 4	Fv	24723	17169	12614	9657	7631	6181	5108	4292	3657	3153	2747	2414	2139	1908	1712	1545	1402	1277	1168	1073	989			
	f _v	0.97	1.4	1.9	2.49	3.15	3.89	4.7	5.6	6.57	7.62	8.74	9.95	11.23	12.59	14.03	15.54	17.14	18.81	20.55	22.38	24.28			
	Fp	1881	1505	1254	1075	941	836	752	684	627	579	537	502	470	443	418	396	376	358	342	327	314			
	f _p	0.9	1.27	1.71	2.21	2.77	3.39	4.07	4.82	5.63	6.5	7.43	8.42	9.48	10.6	11.78	13.02	14.33	15.7	17.13	18.62	20.17			
40 x 5	Fv	30904	21461	15767	12072	9538	7726	6385	5365	4572	39														

Table of loads of welded gratings for scale a = 25.5 mm

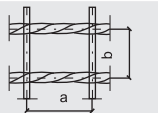
Material: Steel. Analytical value of safety factor $\gamma=1.5$.														a - load carrying flat bar scale														
a x b 25.5 x 24.0 25.5 x 38.1			Loads according to the below table			a x b 25.5 x 50.8 25.5 x 76.2 25.5 x 101.6			Loads according to the below table minus 5%										b - crosswise rod scale									
load carrying flat bar						Supports spacing [mm]																						
			500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500					
20 x 2	Fv	2543	1766	1298	993	785	636	525	442	376	324	283	248	220	196	176	159	144	131	120	110	102						
	f _v	0,19	0,27	0,37	0,48	0,61	0,75	0,91	1,09	1,27	1,48	1,70	1,93	2,18	2,44	2,72	3,02	3,33	3,65	3,99	4,34	4,71						
	Fp	211	169	140	120	105	94	84	77	70	65	60	56	53	50	47	44	42	40	38	37	35						
	f _p	0,17	0,25	0,33	0,43	0,54	0,66	0,79	0,93	1,09	1,26	1,44	1,63	1,84	2,06	2,29	2,53	2,78	3,05	3,32	3,61	3,91						
20 x 3	Fv	3815	2649	1946	1490	1177	954	788	662	564	487	424	373	330	294	264	238	216	197	180	166	153						
	f _v	0,19	0,27	0,37	0,48	0,61	0,75	0,91	1,09	1,27	1,48	1,70	1,93	2,18	2,44	2,72	3,02	3,33	3,65	3,99	4,34	4,71						
	Fp	316	253	211	181	158	140	126	115	105	97	90	84	79	74	70	67	63	60	57	55	53						
	f _p	0,17	0,25	0,33	0,43	0,54	0,66	0,79	0,93	1,09	1,26	1,44	1,63	1,84	2,06	2,29	2,53	2,78	3,05	3,32	3,61	3,91						
25 x 2	Fv	3974	2760	2027	1552	1226	993	821	690	588	507	422	388	344	307	275	248	225	205	188	172	159						
	f _v	0,15	0,22	0,30	0,39	0,49	0,60	0,73	0,87	1,02	1,18	1,36	1,54	1,74	1,95	2,18	2,41	2,66	2,92	3,19	3,47	3,77						
	Fp	327	262	218	187	164	145	131	119	109	101	93	87	82	77	73	69	65	62	59	57	55						
	f _p	0,14	0,20	0,27	0,34	0,43	0,53	0,63	0,75	0,87	1,01	1,15	1,31	1,47	1,65	1,83	2,02	2,22	2,44	2,66	2,89	3,13						
25 x 3	Fv	5961	4139	3041	2328	1840	1490	1232	1035	882	760	662	582	516	460	413	373	338	308	282	259	238						
	f _v	0,15	0,22	0,30	0,39	0,49	0,60	0,73	0,87	1,02	1,18	1,36	1,54	1,74	1,95	2,18	2,41	2,66	2,92	3,19	3,47	3,77						
	Fp	491	393	327	280	245	218	196	178	164	151	140	131	123	115	109	103	98	93	89	85	82						
	f _p	0,14	0,20	0,27	0,34	0,43	0,53	0,63	0,75	0,87	1,01	1,15	1,31	1,47	1,65	1,83	2,02	2,22	2,44	2,66	2,89	3,13						
25 x 4	Fv	7948	5519	4055	3105	2453	1987	1642	1380	1176	1014	883	776	688	613	550	497	451	411	376	345	318						
	f _v	0,15	0,22	0,30	0,39	0,49	0,60	0,73	0,87	1,02	1,18	1,36	1,54	1,74	1,95	2,18	2,41	2,66	2,92	3,19	3,47	3,77						
	Fp	654	524	436	374	327	291	262	238	218	201	187	175	164	154	145	138	131	125	119	114	109						
	f _p	0,14	0,20	0,27	0,34	0,43	0,53	0,63	0,75	0,87	1,01	1,15	1,31	1,47	1,65	1,83	2,02	2,22	2,44	2,66	2,89	3,13						
25 x 5	Fv	9935	6899	5069	3881	3066	2484	2053	1725	1470	1267	1104	970	859	767	688	621	563	513	470	431	397						
	f _v	0,15	0,22	0,30	0,39	0,49	0,60	0,73	0,87	1,02	1,18	1,36	1,54	1,74	1,95	2,18	2,41	2,66	2,92	3,19	3,47	3,77						
	Fp	818	654	545	467	409	364	327	297	273	252	234	218	205	192	182	172	164	156	149	142	136						
	f _p	0,14	0,20	0,27	0,34	0,43	0,53	0,63	0,75	0,87	1,01	1,15	1,31	1,47	1,65	1,83	2,02	2,22	2,44	2,66	2,89	3,13						
30 x 2	Fv	5722	3974	2920	2235	1766	1431	1182	993	847	730	636	559	495	442	396	358	324	296	270	248	229						
	f _v	0,13	0,18	0,25	0,32	0,41	0,50	0,61	0,72	0,85	0,99	1,13	1,29	1,45	1,63	1,81	2,01	2,22	2,43	2,66	2,90	3,14						
	Fp	468	375	312	268	234	208	187	170	156	144	134	125	117	110	104	99	94	89	85	81	78						
	f _p	0,12	0,16	0,22	0,29	0,36	0,44	0,53	0,62	0,73	0,84	0,96	1,09	1,23	1,37	1,52	1,68	1,85	2,03	2,22	2,41	2,61						
30 x 3	Fv	8584	5961	4379	3353	2649	2146	1773	1490	1270	1095	954	838	743	662	594	536	487	443	406	373	343						
	f _v	0,13	0,18	0,25	0,32	0,41	0,50	0,61	0,72	0,85	0,99	1,13	1,29	1,45	1,63	1,81	2,01	2,22	2,43	2,66	2,90	3,14						
	Fp	703	562	468	402	351	312	281	256	234	216	201	187	176	165	156	148	141	134	128	122	117						
	f _p	0,12	0,16	0,22	0,29	0,36	0,44	0,53	0,62	0,73	0,84	0,96	1,09	1,23	1,37	1,52	1,68	1,85	2,03	2,22	2,41	2,61						
30 x 4	Fv	11445	7948	5839	4471	3532	2861	2365	1987	1693	1460	1272	1118	990	883	793	715	649	591	541	497	458						
	f _v	0,13	0,18	0,25	0,32	0,41	0,50	0,61	0,72	0,85	0,99	1,13	1,29	1,45	1,63	1,81	2,01	2,22	2,43	2,66	2,90	3,14						
	Fp	937	750	625	535	468	416	375	341	312	288	268	250	234	220	208	197	187	178	170	163	156						
	f _p	0,12	0,16	0,22	0,29	0,36	0,44	0,53	0,62	0,73	0,84	0,96	1,09	1,23	1,37	1,52	1,68	1,85	2,03	2,22	2,41	2,61						
30 x 5	Fv	14306	9935	7299	5588	4415	3576	2956	2484	2116	1825	1590	1397	1238	1104	991	894	811	739	676	621	572						
	f _v	0,13	0,18	0,25	0,32	0,41	0,50	0,61	0,72	0,85	0,99	1,13	1,29	1,45	1,63	1,81	2,01	2,22	2,43	2,66	2,90	3,14						
	Fp	1171	937	781	669	586	521	468	426	390	360	335	312	293	276	260	247	234	223	213	204	195						
	f _p	0,12	0,16	0,22	0,29	0,36	0,44	0,53	0,62	0,73	0,84	0,96	1,09	1,23	1,37	1,52	1,68	1,85	2,03	2,22	2,41	2,61						
40 x 2	Fv	10173	7065	5190	3974	3140	2543	2102	1766	1505	1298	1130	993	880	785	705	636	577	525	481	442	407						
	f _v	0,09	0,14	0,18	0,24	0,31	0,38	0,46	0,54	0,64	0,74	0,85	0,97	1,09	1,22	1,36	1,51	1,66	1,82	1,99	2,17	2,36						
	Fp	823	658	549	470	412	366	329	299	274	253	235	219	206	194	183	173	165	157	150	143	137						
	f _p	0,09	0,12	0,17	0,21	0,27	0,33	0,40	0,47	0,55	0,63	0,72	0,82	0,92	1,03	1,14	1,26	1,39	1,52	1,66	1,81	1,96						
40 x 3	Fv	15260	10597	7786	5961	4710	3815	3153	2649	2257	1946	1696	1490	1320	1177	1057	954	865	788	721	662	610						
	f _v	0,09	0,14	0,18	0,24	0,31	0,38	0,46	0,54	0,64	0,74	0,85	0,97	1,09	1,22	1,36	1,51	1,66	1,82	1,99	2,17	2,36						
	Fp	1235	988	823	705	617	549	494	449	412	380	353	329	309	290	274	260	247	235	224	215	206						
	f _p	0,09	0,12	0,17	0,21	0,27	0,33	0,40	0,47	0,55	0,63	0,72	0,82	0,92	1,03	1,14	1,26	1,39	1,52	1,66	1,81	1,96						
40 x 4	Fv	20346	14129	10381	7948	6280	5087	4204	3532	3010	2595	2261	1987	1760	1570	1409	1272	1153	1051	962	883	814						
	f _v	0,09	0,14	0,18	0,24	0,31	0,38	0,46	0,54	0,64	0,74	0,85	0,97	1,09	1,22	1,36	1,51	1,66	1,82	1,99	2,17	2,36						
	Fp	1646	1317	1097	941	823	732	658	599	549	507	470	439	412	387	366	347	329	314	299	286	274						
	f _p	0,09	0,12	0,17	0,21	0,27	0,33	0,40	0,47	0,55	0,63	0,72	0,82	0,92	1,03	1,14	1,26	1,39	1,52	1,66	1,81	1,96						
40 x 5	Fv	25433	17662	12976	9935	7850	6358	5255	4415	3762	3244	2826	2484	2200	1962	1761	1590	1442	1314	1202	1104	1017						
	f _v	0,09	0,14	0,18	0,24	0,31	0,38	0,46	0,54	0,64	0,74	0,85	0,97	1,09	1,22	1,36	1,51	1,66	1,82	1,99	2,17	2,36						
	Fp	2058	1646	1372	1176	1029	915	823	748	686	633	588	549	514	484	457	433	412	392	374	358	343						
	f _p	0,09	0,12	0,17	0,21	0,27	0,33	0,40	0,47	0,55	0,63	0,72	0,82	0,92	1,03	1,14	1,26	1,39	1,52	1,66	1,81	1,96						
50 x 2	Fv	16448	11422	8392	6425	5077	4112	3398	2856	2433	2098	1828	1606	1423	1269	1139	1028	932	850	777	714	658						
	f _v	0,78	1,12	1,52	1,99	2,52	3,11	3,76	4,48	5,25	6,09	6,99	7,96	8,98	10,07	11,22	12,43	13,71	15,04	16,44	17,9	19,43						
	Fp	1275	1020	850	728	637	567	510	464	425	392	364	340	319	300	283	268	255	243	232	222	212						
	f _p	0,72	1,02	1,37	1,77	2,21	2,71																					

Table of loads of welded gratings for scale a = 34.3 mm

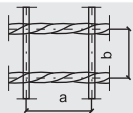
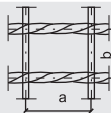
Material: Steel. Analytical value of safety factor $\gamma=1.5$.														a - load carrying flat bar scale															
a x b 34.3 x 24.0 34.3 x 38.1				Loads according to the below table		a x b 34.3 x 50.8 34.3 x 76.2 34.3 x 101.6				Loads according to the below table minus 5%										b - crosswise rod scale									
load carrying flat bar	Supports spacing [mm]																												
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500							
20 x 2	Fv	2048	1422	1045	800	632	512	423	356	303	261	228	200	177	158	142	128	116	106	97	89	82							
	f _v	0.20	0.29	0.39	0.51	0.64	0.79	0.96	1.14	1.34	1.56	1.79	2.03	2.29	2.57	2.87	3.17	3.50	3.84	4.20	4.57	4.96							
	Fp	172	138	115	98	86	76	69	63	57	53	49	46	43	40	38	36	34	33	31	30	29							
	f _p	0.20	0.27	0.36	0.46	0.58	0.71	0.85	1	1.16	1.34	1.53	1.73	1.95	2.18	2.42	2.67	2.94	3.22	3.51	3.82	4.13							
20 x 3	Fv	3072	2133	1567	1200	948	768	635	533	454	392	341	300	266	237	213	192	174	159	145	133	123							
	f _v	0.20	0.29	0.39	0.51	0.64	0.79	0.96	1.14	1.34	1.56	1.79	2.03	2.29	2.57	2.87	3.17	3.50	3.84	4.20	4.57	4.96							
	Fp	258	206	172	148	129	115	103	94	86	80	74	69	64	61	58	54	52	49	47	45	43							
	f _p	0.20	0.27	0.36	0.46	0.58	0.71	0.85	1	1.16	1.34	1.53	1.73	1.95	2.18	2.42	2.67	2.94	3.22	3.51	3.82	4.13							
25 x 2	Fv	3195	2219	1630	1248	986	799	660	555	473	408	355	312	276	247	221	200	181	165	151	139	128							
	f _v	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07	1.24	1.43	1.62	1.83	2.05	2.29	2.54	2.80	3.07	3.35	3.65	3.96							
	Fp	267	213	178	152	133	119	106	97	89	82	76	72	67	63	60	56	54	51	49	46	44							
	f _p	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93	1.07	1.22	1.38	1.56	1.74	1.93	2.14	2.35	2.57	2.80	3.05	3.30							
25 x 3	Fv	4792	3328	2445	1872	1479	1198	990	832	709	611	532	468	415	370	332	300	272	248	226	208	192							
	f _v	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07	1.24	1.43	1.62	1.83	2.05	2.29	2.54	2.80	3.07	3.35	3.65	3.96							
	Fp	400	320	267	229	200	178	161	146	133	123	115	107	100	94	89	84	80	76	73	70	67							
	f _p	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93	1.07	1.22	1.38	1.56	1.74	1.93	2.14	2.35	2.57	2.80	3.05	3.30							
25 x 4	Fv	6390	4437	3260	2496	1972	1597	1320	1109	945	815	710	624	553	493	443	399	362	330	302	277	256							
	f _v	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07	1.24	1.43	1.62	1.83	2.05	2.29	2.54	2.80	3.07	3.35	3.65	3.96							
	Fp	534	427	356	306	267	237	214	194	178	165	153	142	133	125	119	112	107	102	97	93	89							
	f _p	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93	1.07	1.22	1.38	1.56	1.74	1.93	2.14	2.35	2.57	2.80	3.05	3.30							
25 x 5	Fv	7987	5547	4075	3120	2465	1997	1650	1387	1182	1019	887	780	691	616	553	499	453	413	377	347	319							
	f _v	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07	1.24	1.43	1.62	1.83	2.05	2.29	2.54	2.80	3.07	3.35	3.65	3.96							
	Fp	667	534	445	381	344	297	267	243	222	206	191	178	167	157	148	140	133	127	121	117	112							
	f _p	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93	1.07	1.22	1.38	1.56	1.74	1.93	2.14	2.35	2.57	2.80	3.05	3.30							
30 x 2	Fv	4608	3200	2351	1800	1422	1152	952	800	682	588	512	450	399	356	319	288	261	238	218	200	184							
	f _v	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35	1.53	1.71	1.91	2.12	2.33	2.56	2.80	3.05	3.31							
	Fp	382	306	255	218	191	169	153	139	127	118	109	102	96	90	85	80	76	73	70	67	64							
	f _p	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16	1.30	1.45	1.61	1.78	1.96	2.15	2.34	2.54	2.76							
30 x 3	Fv	6912	4800	3527	2700	2133	1728	1428	1200	1022	882	768	675	598	533	479	432	392	357	327	300	276							
	f _v	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35	1.53	1.71	1.91	2.12	2.33	2.56	2.80	3.05	3.31							
	Fp	573	458	382	327	287	255	229	209	191	176	164	153	143	135	127	120	115	109	104	100	96							
	f _p	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16	1.30	1.45	1.61	1.78	1.96	2.15	2.34	2.54	2.76							
30 x 4	Fv	9216	6400	4702	3600	2844	2304	1904	1600	1363	1176	1024	900	797	711	638	576	522	476	436	400	369							
	f _v	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35	1.53	1.71	1.91	2.12	2.33	2.56	2.80	3.05	3.31							
	Fp	764	611	509	439	382	340	306	278	255	235	218	204	191	180	169	161	153	146	139	133	127							
	f _p	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16	1.30	1.45	1.61	1.78	1.96	2.15	2.34	2.54	2.76							
30 x 5	Fv	11520	8000	5878	4500	3556	2880	2380	2000	1704	1469	1280	1125	997	889	798	720	653	595	544	500	461							
	f _v	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35	1.53	1.71	1.91	2.12	2.33	2.56	2.80	3.05	3.31							
	Fp	956	764	636	545	478	425	382	348	319	294	273	255	239	225	213	201	191	182	173	167	160							
	f _p	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16	1.30	1.45	1.61	1.78	1.96	2.15	2.34	2.54	2.76							
40 x 2	Fv	8187	5685	4177	3198	2527	2047	1692	1421	1211	1044	910	800	708	632	567	512	464	423	387	355	327							
	f _v	0.1	0.14	0.19	0.25	0.32	0.40	0.48	0.57	0.67	0.78	0.89	1.02	1.15	1.28	1.43	1.59	1.75	1.92	2.10	2.28	2.48							
	Fp	667	534	445	382	334	297	267	243	222	206	191	178	167	158	149	141	133	127	121	117	112							
	f _p	0.10	0.14	0.18	0.23	0.29	0.35	0.42	0.50	0.58	0.67	0.76	0.87	0.97	1.09	1.21	1.34	1.47	1.61	1.75	1.91	2.07							
40 x 3	Fv	12288	8533	6269	4800	3793	3072	2539	2133	1818	1567	1365	1200	1063	948	851	768	697	635	581	533	492							
	f _v	0.10	0.14	0.19	0.25	0.32	0.40	0.48	0.57	0.67	0.78	0.89	1.02	1.15	1.28	1.43	1.59	1.75	1.92	2.10	2.28	2.48							
	Fp	1002	802	669	573	501	445	401	364	334	308	287	267	251	236	223	211	201	191	182	174	167							
	f _p	0.10	0.14	0.18	0.23	0.29	0.35	0.42	0.50	0.58	0.67	0.76	0.87	0.97	1.09	1.21	1.34	1.47	1.61	1.75	1.91	2.07							
40 x 4	Fv	16374	11371	8354	6396	5054	4093	3383	2843	2422	2088	1819	1599	1416	1263	1134	1023	928	846	774	711	655							
	f _v	0.10	0.14	0.19	0.25	0.32	0.40	0.48	0.57	0.67	0.78	0.89	1.02	1.15	1.28	1.43	1.59	1.75	1.92	2.10	2.28	2.48							
	Fp	1335	1069	891	763	668	593	534	486	445	411	382	356	334	314	297	281	267	255										

Table of loads of welded gratings for scale a = 43.26 mm

Material: Steel. Analytical value of safety factor $\gamma=1.5$.																									
a x b 43.26 x 24.0 43.26 x 38.1		Loads according to the below table		a x b 43.26 x 50.8 43.26 x 76.2 43.26 x 101.6		Loads according to the below table minus 5%		a - load carrying flat bar scale															b - crosswise rod scale		
load carrying flat bar	Supports spacing [mm]																								
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500			
20 x 2	Fv	1545	1073	788	604	477	386	319	268	229	197	172	151	134	119	107	97	88	80	73	67	62			
	f _v	1,94	2,8	3,81	4,97	6,29	7,77	9,4	11,19	13,13	15,23	17,49	19,89	22,46	25,18	28,05	31,08	34,27	37,61	41,11	44,76	48,57			
	Fp	144	115	96	82	72	64	57	52	48	44	41	38	36	34	32	30	29	27	26	25	24			
	f _p	1,8	2,55	3,42	4,41	5,53	6,78	8,14	9,64	11,25	12,99	14,86	16,85	18,96	21,2	23,56	26,05	28,66	31,4	34,26	37,24	40,35			
20 x 3	Fv	2318	1610	1183	905	715	579	479	402	343	296	258	226	200	179	161	145	131	120	110	101	93			
	f _v	1,94	2,8	3,81	4,97	6,29	7,77	9,4	11,19	13,13	15,23	17,49	19,89	22,46	25,18	28,05	31,08	34,27	37,61	41,11	44,76	48,57			
	Fp	215	172	144	123	108	96	86	78	72	66	62	57	54	51	48	45	43	41	39	37	36			
	f _p	1,8	2,55	3,42	4,41	5,53	6,78	8,14	9,64	11,25	12,99	14,86	16,85	18,96	21,2	23,56	26,05	28,66	31,4	34,26	37,24	40,35			
25 x 2	Fv	2414	1677	1232	943	745	604	499	419	357	308	268	236	209	186	167	151	137	125	114	105	97			
	f _v	1,55	2,24	3,05	3,98	5,04	6,22	7,52	8,95	10,51	12,19	13,99	15,92	17,97	20,14	22,44	24,87	27,42	30,09	32,89	35,81	38,86			
	Fp	222	178	148	127	111	99	89	81	74	68	64	59	56	52	49	47	44	42	40	39	37			
	f _p	1,44	2,04	2,74	3,53	4,43	5,42	6,52	7,71	9	10,39	11,89	13,48	15,17	16,96	18,85	20,84	22,93	25,12	27,4	29,79	32,28			
25 x 3	Fv	3622	2515	1848	1415	1118	905	748	629	536	462	402	354	313	279	251	226	205	187	171	157	145			
	f _v	1,55	2,24	3,05	3,98	5,04	6,22	7,52	8,95	10,51	12,19	13,99	15,92	17,97	20,14	22,44	24,87	27,42	30,09	32,89	35,81	38,86			
	Fp	334	267	222	191	167	148	133	121	111	103	95	89	83	78	74	70	67	64	61	58	56			
	f _p	1,44	2,04	2,74	3,53	4,43	5,42	6,52	7,71	9	10,39	11,89	13,48	15,17	16,96	18,85	20,84	22,93	25,12	27,4	29,79	32,28			
25 x 4	Fv	4829	3353	2464	1886	1490	1207	998	838	714	616	537	472	418	373	334	302	274	249	228	210	193			
	f _v	1,55	2,24	3,05	3,98	5,04	6,22	7,52	8,95	10,51	12,19	13,99	15,92	17,97	20,14	22,44	24,87	27,42	30,09	32,89	35,81	38,86			
	Fp	445	356	297	254	222	198	178	162	148	137	127	119	111	105	99	94	89	85	81	77	74			
	f _p	1,03	1,46	1,95	2,52	3,16	3,87	4,65	5,51	6,43	7,42	8,49	9,63	10,84	12,11	13,46	14,89	16,38	17,94	19,57	21,28	23,06			
25 x 5	Fv	6036	4192	3080	2358	1863	1509	1247	1048	893	770	671	589	522	466	418	377	342	312	285	262	241			
	f _v	1,55	2,24	3,05	3,98	5,04	6,22	7,52	8,95	10,51	12,19	13,99	15,92	17,97	20,14	22,44	24,87	27,42	30,09	32,89	35,81	38,86			
	Fp	556	445	371	318	278	247	222	202	185	171	159	148	139	131	124	117	111	106	101	97	93			
	f _p	1,44	2,04	2,74	3,53	4,43	5,42	6,52	7,71	9	10,39	11,89	13,48	15,17	16,96	18,85	20,84	22,93	25,12	27,4	29,79	32,28			
30 x 2	Fv	3477	2414	1774	1358	1073	869	718	604	514	443	386	340	301	268	241	217	197	180	164	151	139			
	f _v	1,3	1,87	2,54	3,32	4,2	5,18	6,27	7,46	8,76	10,15	11,66	13,26	14,97	16,79	18,7	20,72	22,85	25,07	27,41	29,84	32,38			
	Fp	317	254	212	181	159	141	127	115	106	98	91	85	79	75	71	67	63	60	58	55	53			
	f _p	1,2	1,7	2,28	2,94	3,69	4,52	5,43	6,42	7,5	8,66	9,91	11,23	12,64	14,13	15,71	17,37	19,11	20,93	22,84	24,83	26,9			
30 x 3	Fv	5215	3622	2661	2037	1610	1304	1077	905	771	665	579	509	451	402	361	326	296	269	246	226	209			
	f _v	1,3	1,87	2,54	3,32	4,2	5,18	6,27	7,46	8,76	10,15	11,66	13,26	14,97	16,79	18,7	20,72	22,85	25,07	27,41	29,84	32,38			
	Fp	476	381	317	272	238	212	190	173	159	146	136	127	119	112	106	100	95	91	87	83	79			
	f _p	1,2	1,7	2,28	2,94	3,69	4,52	5,43	6,42	7,5	8,66	9,91	11,23	12,64	14,13	15,71	17,37	19,11	20,93	22,84	24,83	26,9			
30 x 4	Fv	6953	4829	3548	2716	2146	1738	1437	1207	1029	887	773	679	601	537	482	435	394	359	329	302	278			
	f _v	1,3	1,87	2,54	3,32	4,2	5,18	6,27	7,46	8,76	10,15	11,66	13,26	14,97	16,79	18,7	20,72	22,85	25,07	27,41	29,84	32,38			
	Fp	635	508	423	363	317	282	254	231	212	195	181	169	159	149	141	134	127	121	115	110	106			
	f _p	1,2	1,7	2,28	2,94	3,69	4,52	5,43	6,42	7,5	8,66	9,91	11,23	12,64	14,13	15,71	17,37	19,11	20,93	22,84	24,83	26,9			
30 x 5	Fv	8692	6036	4435	3395	2683	2173	1796	1509	1286	1109	966	849	752	671	602	543	493	449	411	377	348			
	f _v	1,3	1,87	2,54	3,32	4,2	5,18	6,27	7,46	8,76	10,15	11,66	13,26	14,97	16,79	18,7	20,72	22,85	25,07	27,41	29,84	32,38			
	Fp	794	635	529	453	397	353	317	289	265	244	227	212	198	187	176	167	159	151	144	138	132			
	f _p	1,2	1,7	2,28	2,94	3,69	4,52	5,43	6,42	7,5	8,66	9,91	11,23	12,64	14,13	15,71	17,37	19,11	20,93	22,84	24,83	26,9			
40 x 2	Fv	6181	4292	3153	2414	1908	1545	1277	1073	914	788	687	604	535	477	428	386	350	319	292	268	247			
	f _v	0,97	1,4	1,9	2,49	3,15	3,89	4,7	5,6	6,57	7,62	8,74	9,95	11,23	12,59	14,03	15,54	17,14	18,81	20,55	22,38	24,28			
	Fp	554	443	369	317	277	246	222	202	185	171	158	148	139	130	123	117	111	106	101	96	92			
	f _p	0,9	1,27	1,71	2,21	2,77	3,39	4,07	4,82	5,63	6,5	7,43	8,42	9,48	10,6	11,78	13,02	14,33	15,7	17,13	18,62	20,17			
40 x 3	Fv	9271	6438	4730	3622	2861	2318	1916	1610	1371	1183	1030	905	802	715	642	579	526	479	438	402	371			
	f _v	0,97	1,4	1,9	2,49	3,15	3,89	4,7	5,6	6,57	7,62	8,74	9,95	11,23	12,59	14,03	15,54	17,14	18,81	20,55	22,38	24,28			
	Fp	831	665	554	475	416	369	333	302	277	256	238	222	208	196	185	175	166	158	151	145	139			
	f _p	0,9	1,27	1,71	2,21	2,77	3,39	4,07	4,82	5,63	6,5	7,43	8,42	9,48	10,6	11,78	13,02	14,33	15,7	17,13	18,62	20,17			
40 x 4	Fv	12361	8584	6307	4829	3815	3090	2554	2146	1829	1577	1373	1207	1069	954	856	773	701	639	584	537	494			
	f _v	0,97	1,4	1,9	2,49	3,15	3,89	4,7	5,6	6,57	7,62	8,74	9,95	11,23	12,59	14,03	15,54	17,14	18,81	20,55	22,38	24,28			
	Fp	1108	887	739	633	554	493	443	403	369	341	317	296	277	261	246	233	222	211	202	193	185			
	f _p	0,9	1,27	1,71	2,21	2,77	3,39	4,07	4,82	5,63	6,5	7,43	8,42	9,48	10,6	11,78	13,02	14,33	15,7	17,13	18,62	20,17			
40 x 5	Fv	15452	10730	7884	6036	4769	3863	3193	2683	2286	1971	1717	1509	1337	1192	1070	966	876	798	730	671	618			
	f _v	0,97	1,4	1,9	2,49	3,15	3,89	4,7	5,6	6,57	7,62	8,74	9,95	11,23	12,59	14,03	15,54	17,14	18,81	20,55	22,38	24,28			
	Fp	1386	1108	924	792	693	616	554	504	462	426	396	369	346	326	308	292	277	264	252	241	231			
	f _p	0,9	1,27	1,71	2,21	2,77	3,39	4,07	4,82	5,63	6,5	7,43	8,42	9,48	10,6	11,78	13,02	14,33	15,7	17,13	18,62				

Selection of the minimum cross-section of load carrying flat bar for road transport

Welded grating, for load carrying flat bars scale a=34.3 mm

Supports spacing [mm]															
	Passenger cars		Forklifts				Trucks				Truck-tractors with trailers				
	Q=2.5 [T]		Q=2.5 [T]	Q=3.5 [T]	Q=7.0 [T]	Q=13 [T]	Q=6.0 [T]	Q=9.0 [T]		Q=12 [T]		Q=30 [T]		Q=60 [T]	
	P=0.48/0.624		P=1/1.3	P=1.5/1.95	P=3.25/4.225	P=6/7.8	P=2/2.6	P=3/3.9		P=4/5.2		P=5/6.5		P=10/13	
	A=0.2x0.15		A=0.2x0.2	A=0.2x0.2	A=0.2x0.2	A=0.2x0.2	A=0.2x0.2	A=0.2x0.26		A=0.2x0.3		A=0.2x0.4		A=0.2x0.6	
	R _L	R _B	R _L =R _B	R _L =R _B	R _L =R _B	R _L =R _B	R _L =R _B	R _L	R _B	R _L	R _B	R _L	R _B	R _L	R _B
300	40x4	40x4	40x4	40x4	50x5	70x5	40x5	50x4	50x4	50x4	50x5	50x4	50x4	60x4	60x4
400	40x4	40x4	40x4	40x5	60x5		50x5	50x5	60x4	60x5	60x5	60x5	60x5	70x5	70x4
500	40x4	40x4	40x5	50x5	70x5		60x4	60x5	70x4	70x5	70x5	70x4			
600	40x4	40x4	50x4	60x4			60x5	70x5	70x5			70x5			
700	40x4	40x4	50x5	60x5			70x5								
800	40x5	40x4	50x5	60x5			70x5								
900	40x5	40x5	60x4	70x5											
1000	50x4	40x5	60x5	70x5											
1100	50x4	50x4	60x5												
1200	50x5	50x4	70x4												
1300	60x4	50x5	70x5												
1400	60x4	60x4	70x5												
1500	60x5	60x4	70x5												

IMPORTANT

In order to ensure the freedom of movement, single moving load of 150 daN/m² on 200 x 200 mm pressure area at the most unfavourable point of the grating with maximum deflection of 4 mm should be assumed.

EXCERPT FROM AGI

(GERMAN INDUSTRIAL CIVIL ENGINEERING LABOUR SAFETY INSPECTION)

Loads	Types of loads	Assumed load daN/m ²	Recommended minimum dimensions of load carrying flat bars ¹ in mm
light	single pedestrians	340 from 340 to 490	30/2 30/2 30/3 ²
average, average/heavy	transport and unloading of lightweight components	from 490 to 980	30/3 40/2
heavy	transport and unloading of heavy components	over 980	40/3

¹⁾ Bei Anlagen im Freien und innerhalb von Betrieben mit erhöhter Korrosionsgefahr (z.B. chemische Betriebe) ist es zweckmäßiger Materialstärken der Tragstäbe um 1 mm zu erhöhen.

²⁾ Empfohlene Abmessungen, um Verformungen durch laufende Beanspruchung im Betrieb zu vermeiden.

KEY

Q – total vehicle weight with permitted load [T]

P = a / b

P – load value

a – maximum wheel load value of the most loaded wheel of given vehicle [T]

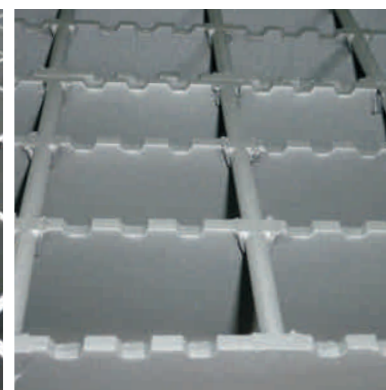
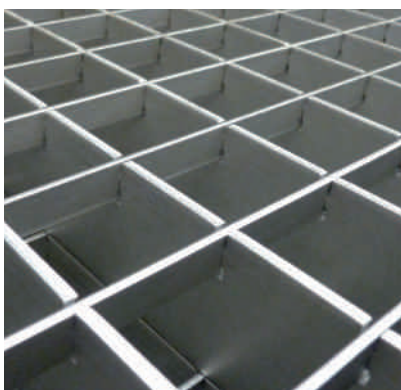
b – "a" - value plus the dynamic coefficient (vibration, braking) [T]

A – area under load „P“ [m x m]

R_L– movement direction along the grating load carrying rods

R_B– movement direction perpendicular to the grating load carrying rods

WE MANUFACTURE STAINLESS STEEL PRESSED AND WELDED GRATINGS (1.4301-OH18N9)



Approximate weight of selected KOZ welded gratings

Number of load carrying flat bars per full width	Mesh size in axes [mm]	KOZ gratings weight [kg/m ²] (framed and zinc coated gratings)															
		Load carrying flat bar dimensions, height/thickness [mm]															
		20/2	20/3	25/2	25/3	30/2	30/3	40/2	40/3	40/4	40/5	50/4	50/5	60/4	60/5	70/4	70/5
67	15.075x38.1	27	38	33	47	39	55	51	73	95		118		141		164	
67	15.075x50.8	26	37	32	46	38	54	50	72	94		117		140		163	
47	21.63x38.1	20	28	25	34	29	40	37	53	69	85	85	105	101	125	117	146
47	21.63x50.8	19	27	24	33	28	39	36	52	68	84	84	104	100	124	116	145
40	25.5x24.0	20	27	24	32	27	37	34	48	62	76	76	93	90	110	104	128
40	25.5x38.1	18	25	22	30	25	35	32	46	60	73	73	91	87	108	101	125
40	25.5x50.8	17	24	21	29	24	34	31	45	58	72	72	90	86	107	100	124
40	25.5x76.2	16	23	20	28	23	33	31	44	58	71	71	89	85	106	99	123
40	25.5x101.6	16	22	19	28	23	33	30	43	57	71	71	88	85	105	99	123
34	30.15x38.1	16	22	19	26	22	31	28	40	52	64	64	78	75	93	87	108
34	30.15x50.8	15	21	18	25	21	30	27	39	51	62	62	77	74	92	86	107
30	34.3x24.0	17	27	19	26	22	30	28	38	49	59	59	72	70	86	80	99
30	34.3x38.1	15	20	17	24	20	28	26	36	46	57	57	70	67	83	78	97
30	34.3x50.8	14	19	16	23	19	27	25	35	45	56	56	69	66	82	77	95
30	34.3x76.2	13	18	16	22	18	26	24	34	44	55	55	68	65	81	76	95
30	34.3x101.6	12	17	15	21	18	25	23	33	44	54	54	67	65	81	75	94
20	51.0x50.8	11	14	13	17	14	20	18	26	33	41	41	50	49	60	56	69
20	51.0x76.2	10	13	12	16	14	19	18	25	32	40	40	50	48	59	55	69
20	51.0x101.6	9	13	11	16	13	19	17	24	32	39	39	49	47	58	55	68
15	68.6x50.8	9	12	10	14	12	16	15	21	27	33	33	40	39	48	45	55
15	68.6x76.2	8	11	10	13	11	15	14	20	26	32	32	39	38	47	44	54
15	68.6x101.6	7	10	9	13	11	15	14	19	25	31	31	39	37	46	43	53

Table 11

Standard manufacturing programme:

- the lowest cost of purchase
- the lowest time to delivery

The sales department to specify:

- the minimum amount of the order
- the time to delivery

SERRATED GRATINGS anti-slip type

At the Customer's request, we make welded and pressed gratings in the SERRATED version. SERRATED PXM gratings characterise with increased coefficient of friction thanks to the cuts in the grating flat bars.

SERRATED gratings are used for paving of platforms at places where ensuring of increased safety due to the presence of snow, ice, lubricants or moisture is required. They are also recommended for inclined surfaces.

SERRATED gratings are made in different shapes and sizes after previous arrangements with the sales department.

Their technical data (mesh sizes, dimensions of load carrying flat bars) are the same as in case of gratings with smooth load carrying flat bars. We also make SERRATED PXM gratings of stainless steel.



MARKING

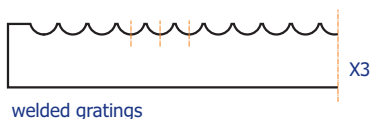
We make two types of KOZ SERRATED welded gratings:

X4 – the cuts in the load carrying flat bars, SERRATED
X3 – the cuts in the load carrying flat bars, sharp SERRATED type of grating/mesh size/load carrying flat bar/grating size/quantity
X4KOZ / 34x38 / 30x2 / L=800xB=1000 / 50 szt.

We make three types of KOP SERRATED pressed gratings:

X5 – the cuts in the load carrying flat bars
X6 – the cuts in the crosswise flat bars
X7 – the cuts in the load carrying and the crosswise flat bars type of grating/mesh size/load carrying flat bar/grating size/quantity
X6KOP / 33x33 / 30x2 / L=1000xB=1200 / 50 szt.

SERRATED (sharp) – for flat bar thicknesses 2, 3, 4, 5 [mm]



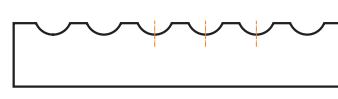
welded gratings

SERRATED (trapezoid) – for flat bar thicknesses 2, 3, 4, 5, 6 [mm]



welded gratings

SERRATED – for flat bar thicknesses 2, 3, 4 [mm]

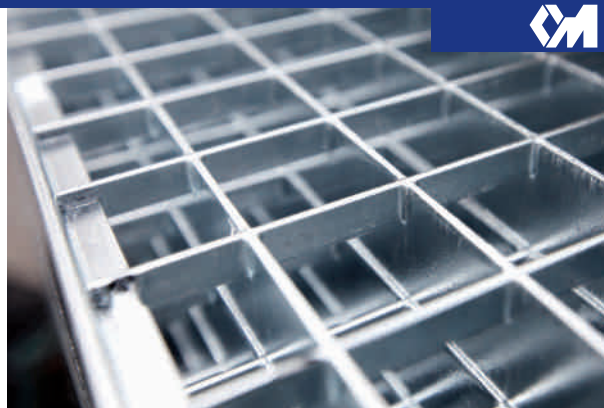


pressed gratings

PRESSED PLATFORM GRATINGS according to DIN 24537, or ITB or IBDiM Technical Approvals

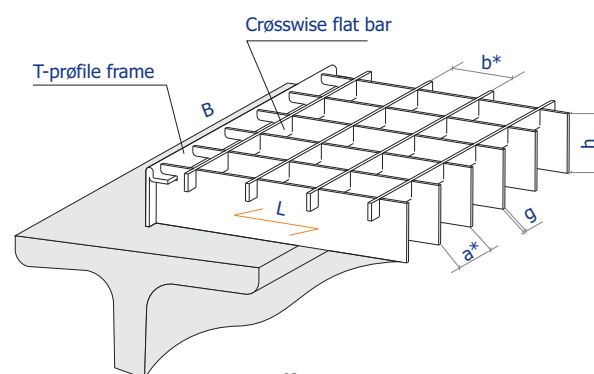
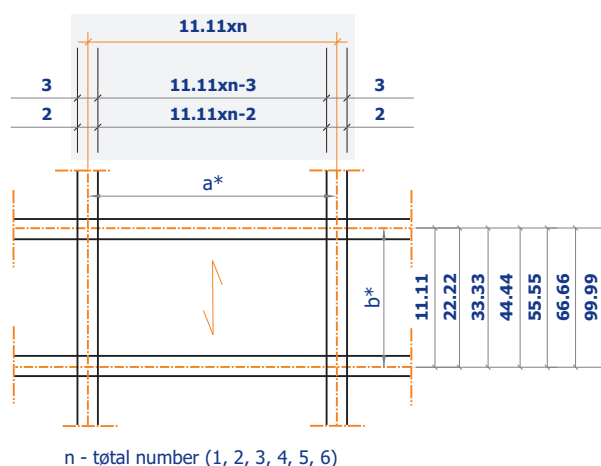
We manufacture pressed KOP platform gratings through bonding of load carrying flat bars with the crosswise ones. The process of bonding is carried out on a state-of-the-art process line. It consists in pressing of the crosswise flat bar into a previously cut load carrying flat bar under a high pressure (1650 kN).

Automatically controlled process of manufacturing of pressed gratings means individual approach to each and every order (to the Customers' requirements concerning the dimensions of gratings,



the sizes of mesh, the layout of gratings on landings and the method of their fixing). The production of KOP pressed gratings generates no waste, which significantly reduces the cost of manufacture and, consequently, the final price of such gratings.

MESH SIZES OF PRESSED GRATINGS (manufacturing potential)



Key

- a - load carrying flat bar scale
- b - crosswise rod scale
- * - dimensions in axes [mm]
- h - load carrying flat bar height
- g - load carrying flat bar thickness
- B - grating width
- L - grating length
- ↔ - marking of the direction of the load carrying flat bar

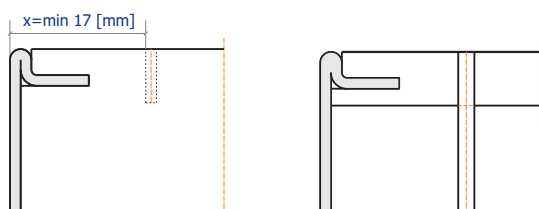
Standard max length
of a grating L=2100mm

Standard max width
of a grating B=1700mm

We manufacture pressed gratings with negative tolerance of +0/-4 [mm]

Other possible designs of gratings (mesh sizes, flat bars, L and B of the grating) after relevant arrangements with the sales department.

T-PROFILE STANDARD FRAME



In case of KOP gratings with load carrying flat bars width g=4mm, framing is made of flat bars with the same height as the one of the grating load carrying flat bar.

Depending on the grating intended use, it may be framed with: toeboards, perforated (anti-slip) borders or other profiles.

Types of load carrying flat bars

h	mm																	
	20	25	30	35	40	50	20	25	30	35	40	50	20	25	30	35	40	50
g	2						3						4					

Types of crosswise flat bars

h [mm]	8	9
g	2	

MARKING

KOP – Framed pressed gratings
KNP – Non-framed pressed gratings
type of grating/mesh size/load carrying flat bar/grating size/quantity
KOP / 33x33 / 30x2 / L=1000xB=1200 / 50 szt.

Table of loads of pressed gratings for scale a=33.3 mm

Load carrying flat bars		Supports spacing L [mm]																	
		500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200
20 x 2	Fv	1839	1277	938	718	568	460												
	fv	0.20	0.29	0.39	0.51	0.64	0.79												
	Fp	179	143	119	102	89	79												
	fp	0.20	0.27	0.36	0.46	0.58	0.70												
25 x 2	Fv	2876	1997	1467	1123	887	719	594	500	426									
	fv	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07									
	Fp	277	222	185	158	139	123	111	101	92									
	fp	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93									
30 x 2	Fv	4147	2880	2116	1620	1280	1037	857	720	614	529	461	405						
	fv	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35						
	Fp	396	317	264	226	198	176	158	144	132	122	113	105						
	fp	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16						
35 x 2	Fv	5670	3940	2890	2210	1710	1420	1170	980	840	720	630	550	490	440	390			
	fv	0.10	0.14	0.20	0.26	0.32	0.40	0.48	0.58	0.68	0.78	0.90	1.02	1.16	1.30	1.44			
	Fp	470	370	310	270	230	210	190	170	150	140	130	120						
	fp	0.11	0.16	0.22	0.29	0.37	0.46	0.55	0.66	0.77	0.90	1.03	1.17						
40 x 2	Fv	7368	5117	3759	2878	2274	1842	1523	1279	1090	940	819	720	637	569	510	461		
	fv	0.10	0.14	0.19	0.25	0.32	0.40	0.48	0.57	0.67	0.78	0.89	1.02	1.15	1.28	1.43	1.59		
	Fp	691	553	461	395	345	307	276	251	230	213	197	184	173	163	153	145		
	fp	0.10	0.14	0.18	0.23	0.29	0.35	0.42	0.50	0.58	0.67	0.76	0.87	0.97	1.09	1.21	1.34		
25 x 3	Fv	4313	2995	2201	1685	1328	1078	891	749	638	550	497	421						
	fv	0.16	0.23	0.31	0.41	0.51	0.63	0.77	0.91	1.07	1.24	1.43	1.62						
	Fp	416	332	277	237	208	185	166	151	139	128	119	111						
	fp	0.16	0.22	0.29	0.37	0.46	0.56	0.67	0.80	0.93	1.07	1.22	1.38						
30 x 3	Fv	6221	4320	3174	2430	1920	1555	1285	1080	920	794	691	608	538	480				
	fv	0.13	0.19	0.26	0.34	0.43	0.53	0.64	0.76	0.89	1.04	1.19	1.35	1.53	1.71				
	Fp	594	475	396	340	297	264	238	216	198	183	170	158	149	140				
	fp	0.13	0.18	0.24	0.31	0.39	0.47	0.56	0.66	0.77	0.89	1.02	1.16	1.30	1.45				
35 x 3	Fv	8500	5880	4340	3220	2620	2120	1750	1470	1250	1080	940	880						
	fv	0.10	0.14	0.20	0.26	0.32	0.40	0.48	0.58	0.68	0.78	0.90	1.02						
	Fp	700	560	470	400	350	310	280	250	230	210	200	190						
	fp	0.11	0.16	0.22	0.29	0.37	0.46	0.55	0.66	0.77	0.90	1.03	1.17						
40 x 3	Fv	11059	7680	5642	4320	3414	2765	2285	1920	1636	1410	1229	1080	957	853	766	691	627	
	fv	0.10	0.14	0.19	0.25	0.32	0.40	0.48	0.57	0.67	0.78	0.89	1.02	1.15	1.29	1.43	1.59	1.75	
	Fp	1037	829	691	592	518	461	415	377	346	319	296	276	259	244	230	218	207	
	fp	0.10	0.14	0.18	0.23	0.29	0.35	0.42	0.50	0.58	0.67	0.77	0.87	0.97	1.09	1.21	1.34	1.47	
50 x 3	Fv	17280	12000	8816	6750	5333	4320	3570	3000	2556	2204	1920	1688	1495	1333	1197	1080	979	893
	fv	0.08	0.11	0.16	0.20	0.26	0.32	0.38	0.46	0.54	0.62	0.71	0.81	0.92	1.03	1.15	1.27	1.40	1.54
	Fp	1589	1272	1060	908	795	706	636	578	530	489	454	424	397	374	353	335	318	303
	fp	0.08	0.11	0.15	0.19	0.23	0.28	0.34	0.40	0.46	0.54	0.61	0.69	0.78	0.87	0.97	1.07	1.18	1.29

Table 12

KEY for table 12 (1daN≈1KG)

Fv - constant load value (daN/m²)

fv - deflection (cm) under load Fv

Fp - concentrated load on 200x200 mm area

fp - deflection (cm) under load Fp

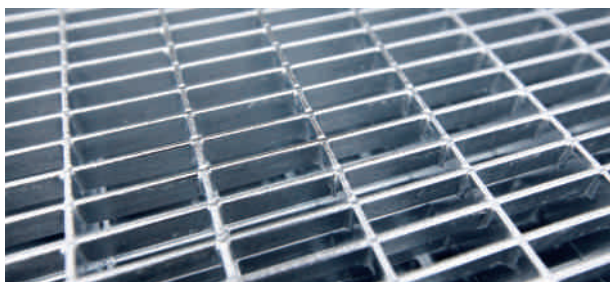
- Permitted tension for steel: **1600 daN/cm²**
- Safety factor to the yield point: **1,5**
- Safety factor to the tearing resistance limit: **2,35**
- Grating support = grating height (not less than 30 mm)

■ The range recommended by the manufacturer. Within this range, the elastic deflection does not exceed 1/200 of the support spacing and it is less than 4 mm at 150 daN single moving load on 200 x 200 mm pressure area at a discretionary point of the grating.

■ Within this range, the grating can accommodate 150 daN moving load at a discretionary point at maximum deflection of 1/200 of the support spacing.

■ Within this range, the maximum deflection at 500 daN/m² continuous load is 4 mm.

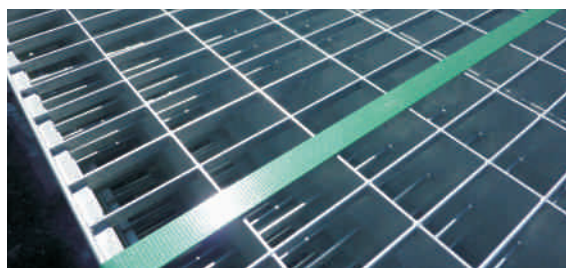
■ Within this range, the maximum deflection at 500 daN/m² continuous load is 1/200 of the support spacing.



Conversion table for pressed gratings loads

Load carrying flat bar [mm]	Load carrying flat bar module [mm]	Number of load carrying flat bars per 1 metre of grating width	Coefficient w
20x2 - 50x3	11.11	91	2.93
20x2 - 50x3	22.22	46	1.48
20x2 - 50x3	33.33	31	1
20x2 - 50x3	44.44	23	0.74
20x2 - 50x3	55.55	19	0.61
20x2 - 50x3	66.66	16	0.52

The Fv loads table for pressed gratings has been prepared for 33.33 mm load carrying flat bar module. In order to calculate the loads for pressed gratings with other load carrying flat bar modules, use the above table.



Sample loads calculations for pressed gratings with other modules than 33.33mm

The constant load value is $F_v = 2430 \text{ daN/m}^2$ (see table 12) for KOP grating/33x33/30x3/L=800xB=1000.

F_v - load for 11.11mm load carrying flat bars
 F_v'' - load for 66.66mm load carrying flat bars
 F_v - load for 33.33mm load carrying flat bars
 w - coefficient from the conversion table for 11.11mm flat bar module

1. If we want to calculate the constant load value F_v' for KOP grating with 11.11mm load carrying flat bar module

KOP/11x33/30x3/L=800xB=1000 we must:

$$F_v' = F_v \times w = 2430 \times 2,93 = 7120 \text{ daN/m}^2$$

2. If we want to calculate the constant load value F_v'' for KOP grating with 11.11mm load carrying flat bar module

KOP/66x22/30x2/L=800xB=1000 we must:

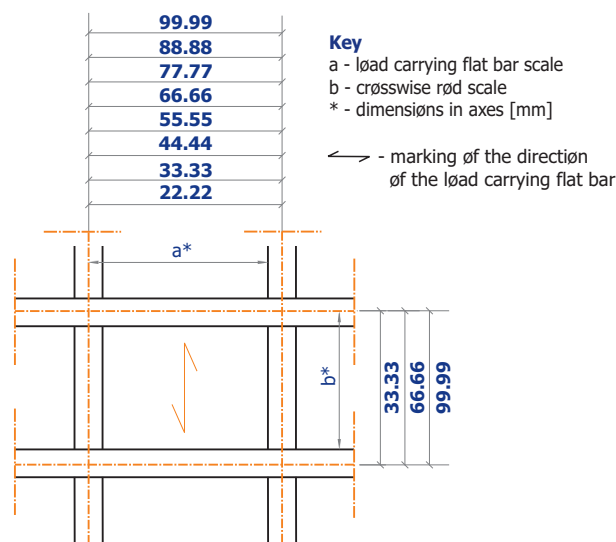
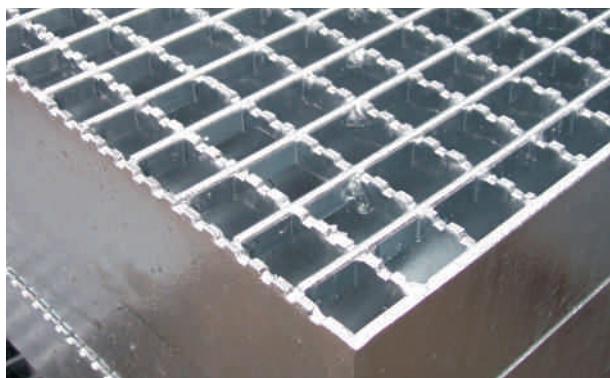
$$F_v'' = F_v \times w = 1800 \times 0,52 = 936 \text{ daN/m}^2$$

HEAVY DUTY PRESSED GRATINGS

We manufacture heavy duty pressed gratings adapted to sustain large loads. As a standard, framed with flat bars with the same height as the one of the grating load carrying flat bar.

Other possible designs of heavy duty gratings

(tall frames, load carrying and crosswise flat bars, mesh size, anti-slip borders, SERRATED anti-slip version, etc.) must be each time consulted with the sales department.



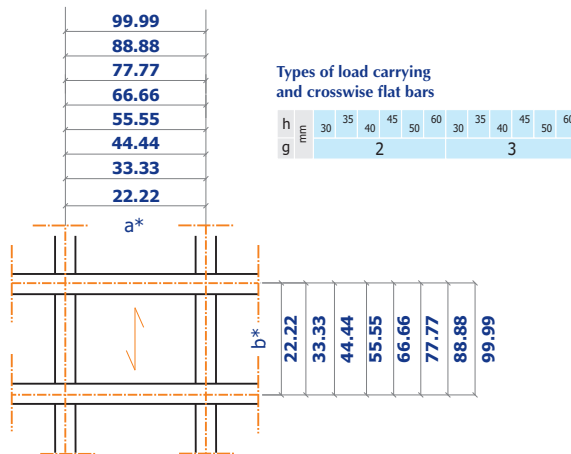
The type of the crosswise flat bars depends on the type of the load carrying flat bar

Crosswise flat bar		12x4				14x4				20x5				25x5			
Load carrying flat bar	h	25				30				40				50			
	g	60				70				80				90			
		5				5				5				5			

KPK FULL PRESSED GRATINGS

We manufacture foldable KPK full pressed gratings, in case of which crosswise flat bars are of the same height and thickness – the so-called full pressing. Each of the flat bars of the KPK full pressed grating is cut to half of its height – load carrying flat bars are cut on top and crosswise flat bars on the bottom. As a standard, framed with flat bars with the same height as the one of the grating load carrying flat bar. Recommended dimensions of KPK full pressed gratings:

- length $L=300-1500$ [mm]
- width $B=300-1500$ [mm]



Andere Möglichkeiten der Herstellung von KPK-VOLLROSTE und Jalousieroste (hohe Randeinfassung, Tragstäbe und Querstäbe, Maschenteilung, Anwendung einer rutschhemmenden Leiste, rutschhemmende Ausführung SERRATED, usw.) sind jeweils mit der Verkaufsabteilung zu besprechen.

LOUVERED GRATINGS

We manufacture foldable louvered gratings, in case of which the height of crosswise flat bars is usually bigger than the one of the load carrying ones. The louvered gratings may perform the function of a sun shield. There is a possibility of full closing of the mesh openings.

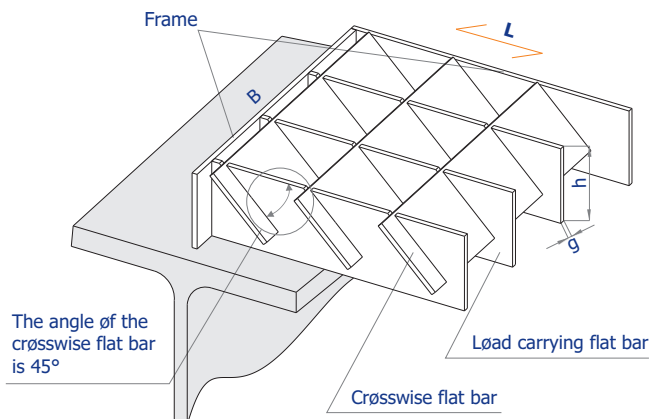
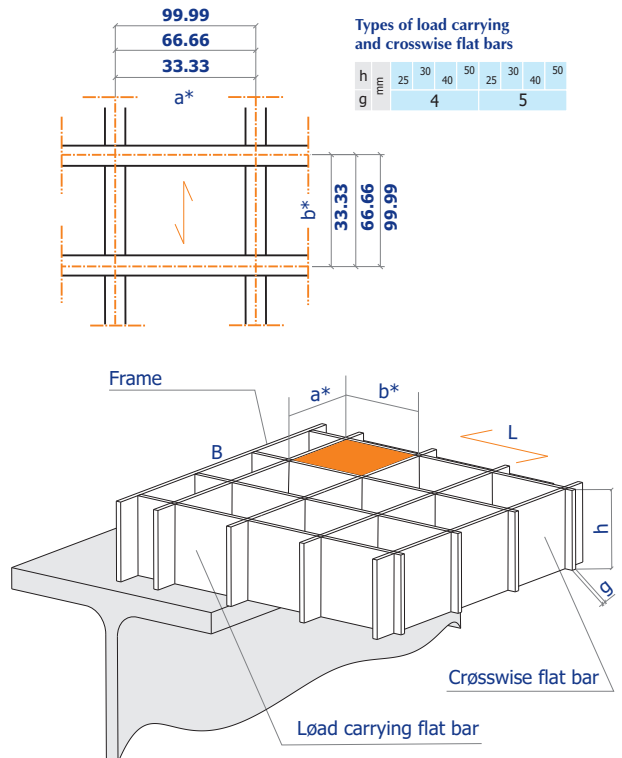
As a standard, framed with flat bars with the same height as the one of the grating load carrying flat bar. Recommended dimensions of louvered gratings:

- length $L_{max}=1500$ mm
- width $B_{max}=1500$ mm



IMPORTANT

KPK full pressed gratings can accommodate loads with variable directions. It is recommended to load KPK gratings along the load carrying flat bar (the one with the cut on the top).

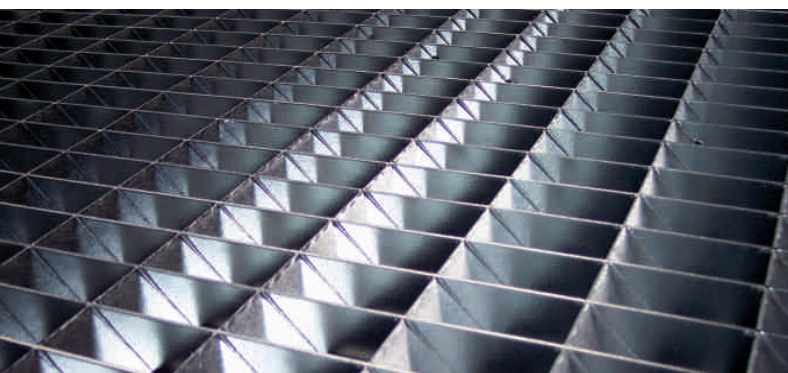


Key

- a - load carrying flat bar scale
- b - crosswise rod scale
- * - dimensions in axes [mm]
- h - load carrying flat bar height
- g - load carrying flat bar thickness
- B - grating width
- L - grating length
- ↔ - marking of the direction of the load carrying flat bar

Types of load carrying and crosswise flat bars

h	20	25	35	30	40
g	2				



OFF-SHORE GRATINGS

We also manufacture welded gratings with additional reinforcement at the bottom. Off-shore gratings are made in specified widths resulting from fixed scale of load carrying flat bars of 34.3mm.

As a standard, framed with flat bars with the same height as the one of the grating load carrying flat bar.

OFF-SHORE GRATINGS WITH ADDITIONAL STRIP

We manufacture welded gratings with additional perforated strip welded at the bottom with 8x8 [mm] openings. This type of grating meets all the requirements of Spanish safety regulations.

IMPORTANT

The design of PXM off-shore gratings prevents any items with the diameter of 10 mm from passing through the mesh of the grate.

Recommended mesh sizes	34.3x38.1; 34.3x50.8 [mm]
Load carrying flat bar	od 25x2 do 40x4 [mm]

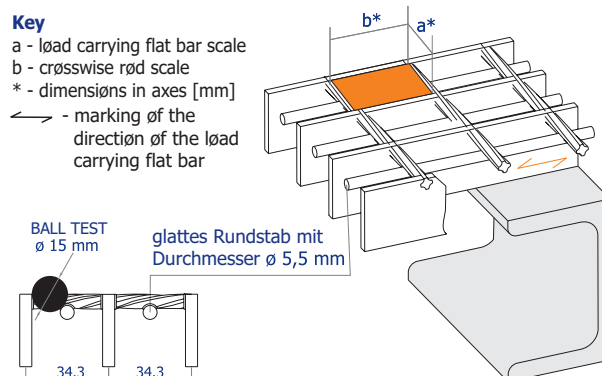
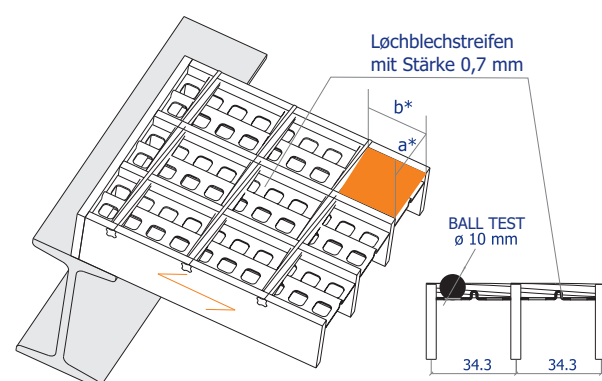
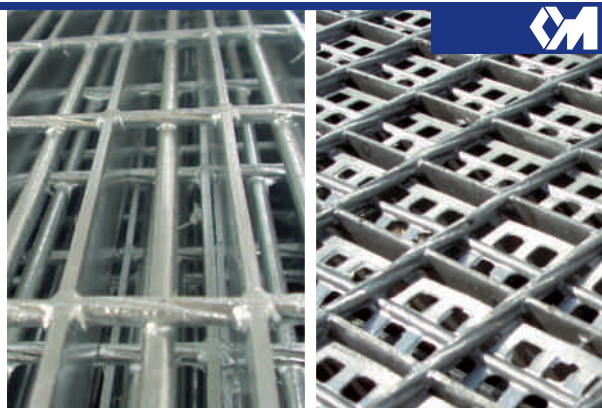
OFF-SHORE GRATINGS

We manufacture welded gratings with additional plain rods welded at the bottom.

IMPORTANT

The design of PXM off-shore gratings prevents any items with the diameter of 15mm from passing through the mesh of the grate.

Recommended mesh sizes	34.3x76.2; 34.3x101.6 [mm]
Load carrying flat bar	od 25x2 do 40x4 [mm]



Other possible designs of off-shore gratings (mesh size, grating dimensions, etc.) must be each time consulted with the sales department. We also manufacture **SERRATED** (anti-slip) **OFF-SHORE GRATINGS**. The design of gratings must be each time consulted with the sales department.

MATERIAL AND COATING

As a standard, the platform gratings are made by Polimex-Mostostal S.A. of:

- S235JR class steel according to PN-EN 10025 or its equivalents;
- 1.4301-OH18N9 stainless steel according to the Polish Standards.

It is possible to make platform gratings of S355J0 class steel according to PN-EN 10025 or No. 1.4404-OH17N14M2 steel according to the Polish Standards. The use of other materials than the ones specified above must be agreed with the sales department. As a standard, all products are hot-dip zinc coated according to EN ISO 1461, DIN 50976, which provides durable protection against aggressive environments.

The process of hot-dip zinc coating is carried out at our own galvanising shop. We also offer durable and effective protection of surfaces through powder coating (RAL colours). We may also deliver "black" (not protected against corrosion) products.





STAIRWAY SYSTEMS AND STEPS

Polimex-Mostostal S.A. has specialised in the manufacture of steel stairway structures with transport routes made of PXM platform gratings. We make both indoor and outdoor hot-dip zinc coated stairs adapted to different loads.

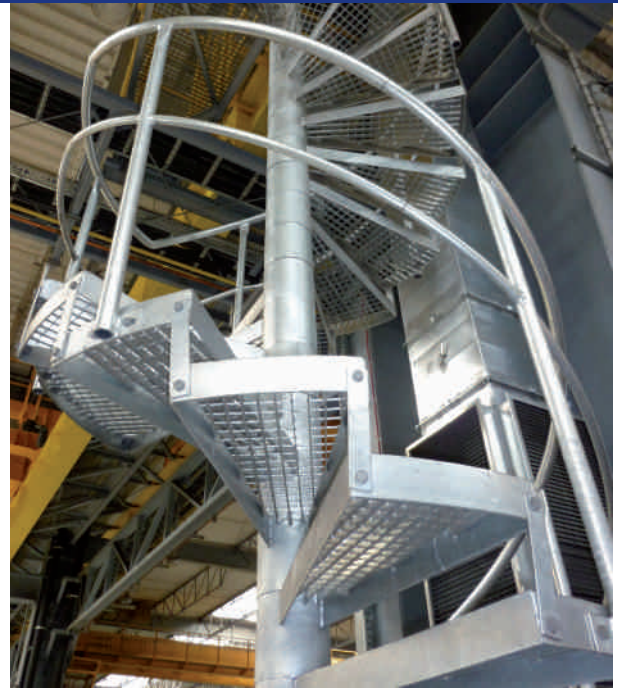
We manufacture different types of stairs.

SPIRAL STAIRS: stairs in sleeves and without sleeves, monolithic stairs.

STRAIGHT STAIRS: straight one-flight stairs, straight 3-flight stairs, etc.; adjustable height stairs.

STRAIGHT ADJUSTABLE HEIGHT STAIRS according to EN-ISO 14122

We manufacture adjustable height stairs (variable adjustment of β angle allowing to adjust the height of stairs H [mm] to the Customer's individual needs. The adjustment of the angle of inclination of such stairs is obtained through loosening of the bolts at the articulations and the adjustment of the entire structure to given level of ceiling, and further anchoring it to the ceiling. The steps of the stairs remain horizontally levelled after each adjustment of the stairs height. The steps are made of platform gratings. Typically, we manufacture stairs with the following widths of flights: $B=800, 1000, 1200$ [mm].

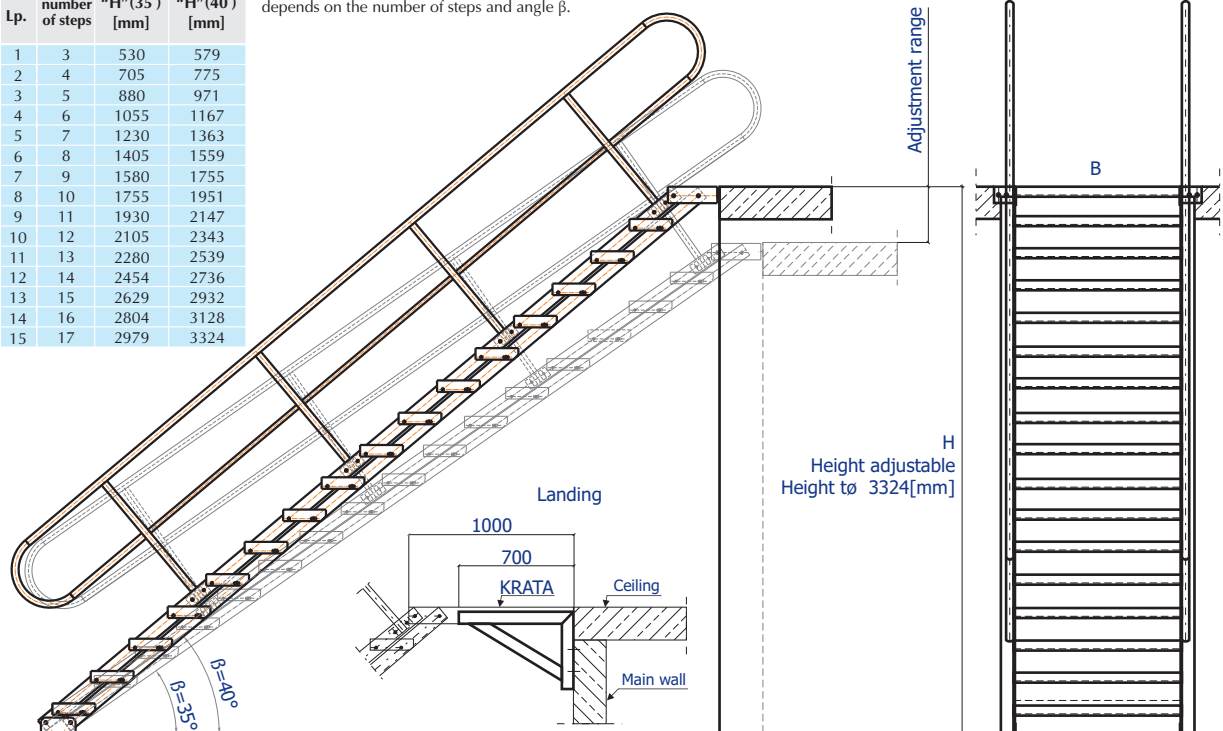


The stairs with the angle adjustment meet the requirements of the civil engineering regulations concerning the geometry of steps. Additionally, we offer interconnecting platforms performing the functions of landings. The stairs are complemented with railings made of 42.4x3.2 [mm] pipes on both sides. Adjustable height stairs are universal, lightweight and DIY. Adjustable height stairs form a perfect solution for warehouses, garage pits, cellars, attics, and multiple other applications depending on the Customer's needs.

STRAIGHT ADJUSTABLE HEIGHT STAIRS

Lp.	number of steps	"H"(35°) [mm]	"H"(40°) [mm]
1	3	530	579
2	4	705	775
3	5	880	971
4	6	1055	1167
5	7	1230	1363
6	8	1405	1559
7	9	1580	1755
8	10	1755	1951
9	11	1930	2147
10	12	2105	2343
11	13	2280	2539
12	14	2454	2736
13	15	2629	2932
14	16	2804	3128
15	17	2979	3324

The height "H" of stairs depends on the number of steps and angle β .



SPIRAL STAIRS according to PN/M-49060

(EN-ISO 14122, DIN 18065)

We make spiral stairs according to own static calculations and own design, which is each time adapted to the Customer's needs.

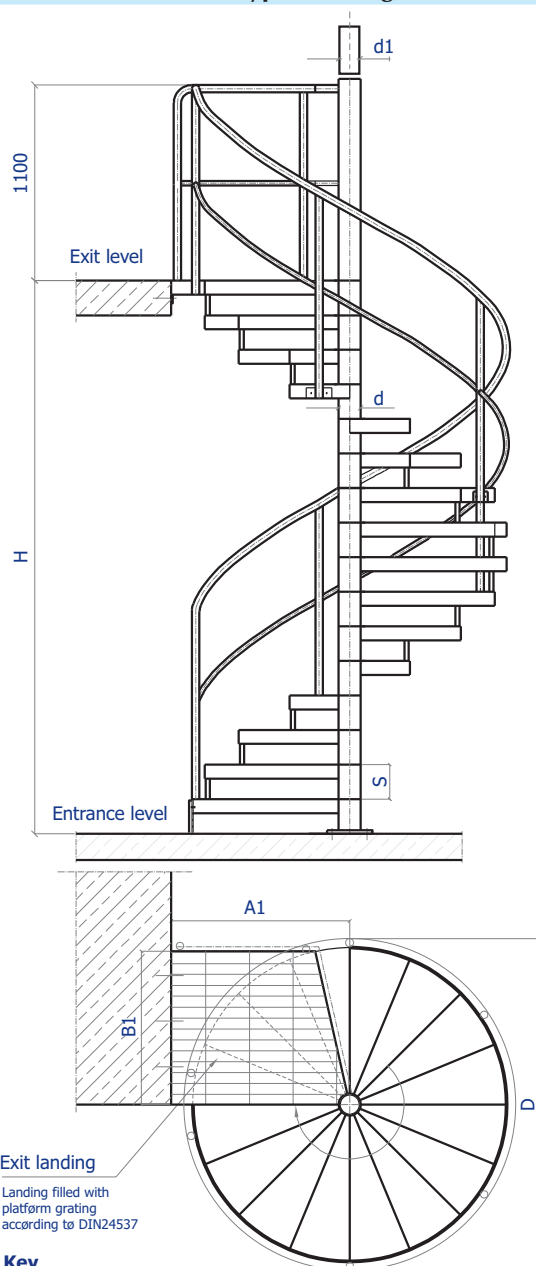
As a standard, spiral stairs are offered in hot-dip zinc coated version. At the Customer's request, we also offer spiral stairs coated with special paint. We manufacture spiral stairs as complete sets (structural pipe, steps, landings, railings).

IT IS POSSIBLE TO MAKE SPIRAL STAIRS ACCORDING TO THE CUSTOMER'S DESIGN.

Spiral stairs by Polimex-Mostostal S.A. characterise with:

- small occupied area comparing to straight stairs;
- small weight in relation to the height of stairs;
- easy installation and disassembly;
- possibility of angle adjustment to the existing component through turning of all steps on the load carrying pillar;
- low price comparing to traditional stairs.

SPIRAL STAIRS IN A SLEEVE with type 1 railing



Exit landing

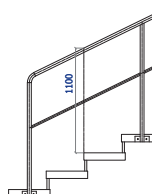
Landing filled with platform grating according to DIN24537

Key

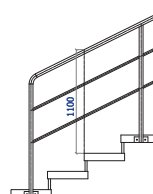
D - diameter of spiral stairs with the railing
d - sleeve diameter
d1 - central pipe diameter
H - floor height
S - step height
A1, B1 - landing dimensions

Standard types of railings

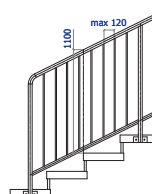
Railing type 1



Railing type 2



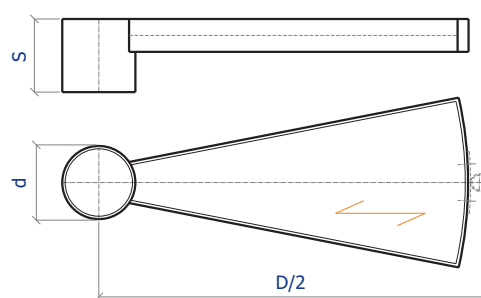
Railing type 3



We make other type of railings according to the Customer's guidelines.

SPIRAL STEPS

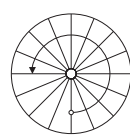
Steps filled with welded or pressed platform grating in normal and SERRATED (anti-slip) versions.



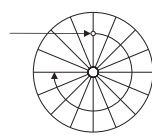
← - marking of the direction of the load carrying flat bar

FEATURES OF SPIRAL STAIRS

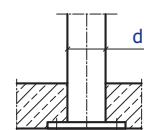
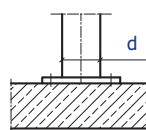
Anchoring of the load carrying pipe (pillar)



Left-handed



Right-handed

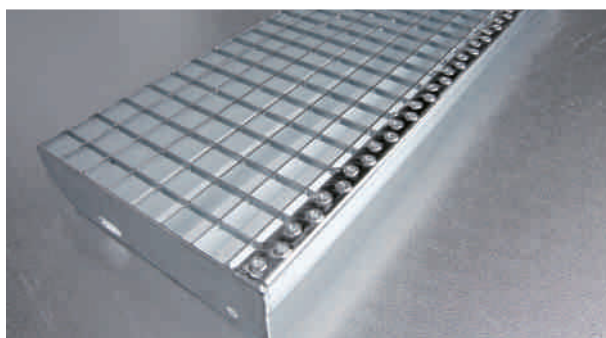
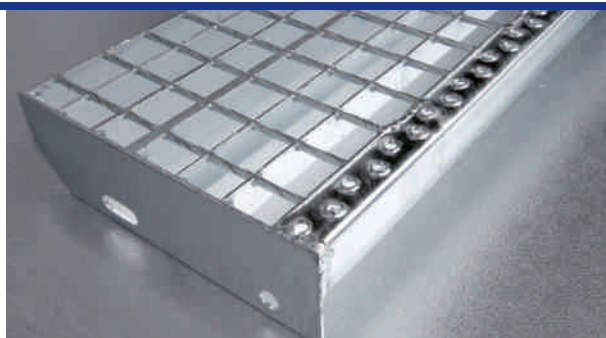




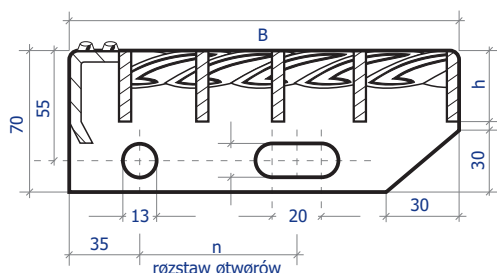
STEPS according to DIN24531

We make standard steps of welded and pressed gratings. Each step offered by us has a special anti-slip borders and side sheet metal plates with assembly openings. Additionally, the anti-slip border makes the step more rigid at the place exposed to the highest loads. As a standard, steps are offered in hot-dip zinc coated version. PXM steps form a combination of lightweight design with durability.

We also make steps of SERRATED (anti-slip) gratings.



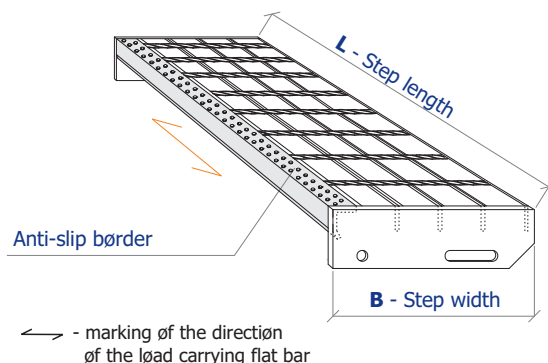
STANDARD SIDE SHEET METAL



n = 120, 150, 180 [mm] or otherwise, after consultations with the sales department
h - load carrying flat bar height

Dimensions given in [mm]
Sheet metal thickness: 3mm

STANDARD STEP DESCRIPTION



Standard step dimensions

L	B	h	n
	240		120
	260		150
600	270		150
	295		180
	305		180
	240		120
	260		150
800	270		150
	295		180
	305		180
	240		120
	260		150
1000	270		150
	295		180
	305		180
	240		120
	260		150
1200	270		150
	295		180
	305		180

Dimensions of load carrying flat bars

After the submission of the side sheet metal plate drawing, we also make steps with other lengths and widths than the ones specified in the table.



We offer the following step mounting components:

- bolts M12x35
DIN 558 (E05)
- washers D11
DIN 126 (E12)
- nuts M12
DIN 555 (E16)

MARKING

SOZ – welded step (made of welded grating)
SOP – pressed step (made of pressed grating)
X3SOZ, X4SOZ, X5SOP, X6SOP, X7SOP:
SERRATED (anti-slip) grating design
type of step/mesh size/load carrying flat bar/step size/quantity
SOZ / 34x38 / 30x2 / L=800xB=260 / 50 szt.

MOUNTING FOR FITTING OF PLATFORM GRATINGS

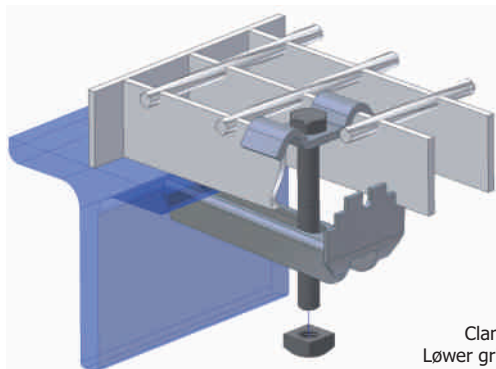
We also offer to our Customers gratings mounting components ensuring fast and safe installation of platform gratings according to their designation. All grating mounting components are protected against corrosion.

We also offer stainless steel mountings.

IMPORTANT

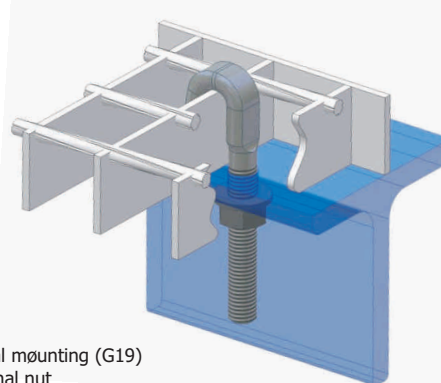
The number and the types of mountings necessary to fit a single grating are specified by the designer.

STANDARD MOUNTING



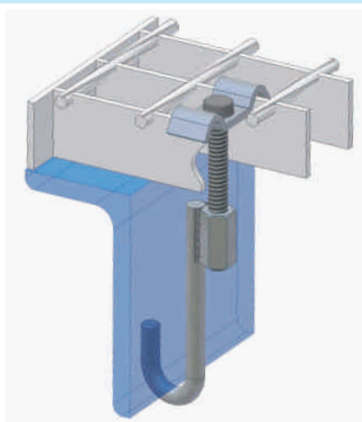
Clamp (G01)
Lower grip (D01)
M8x70 bolt (E01)
M8 square nut (E14)

UNIVERSAL MOUNTING

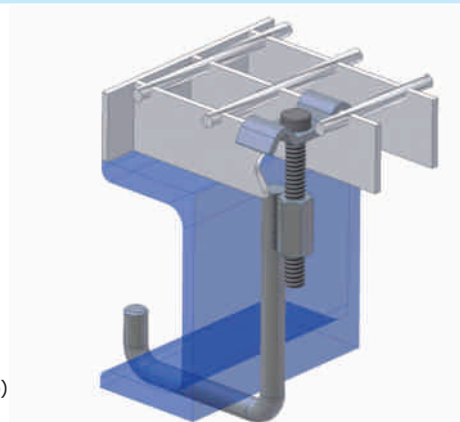


M10 universal mounting (G19)
M10 Hexagonal nut
with polyamide insert (E15)

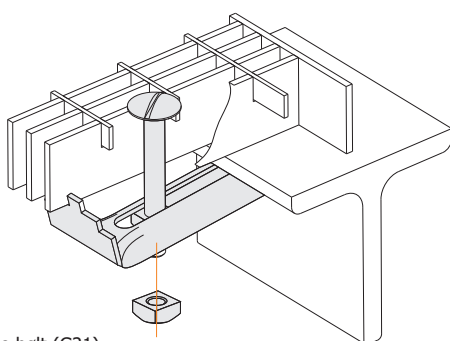
HOOK MOUNTING



Clamp (G01)
Hook mounting made of 9 mm rod (D06)
M8x70 (E01) or M8x100 bolt (E02)

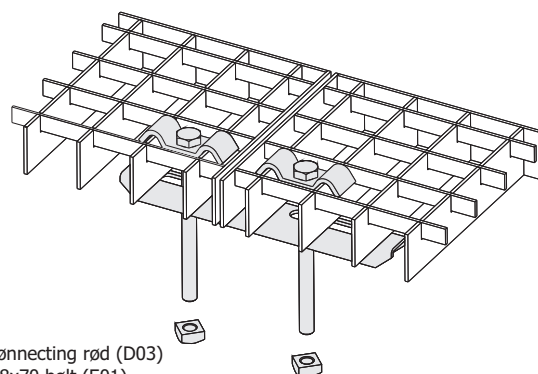


MOUNTING FOR GRATINGS WITH ONE SCALE EQUAL 11.11[mm]



M8x60 carriage bolt (G21)
Lower grip (D02)
M8 square nut (E14)

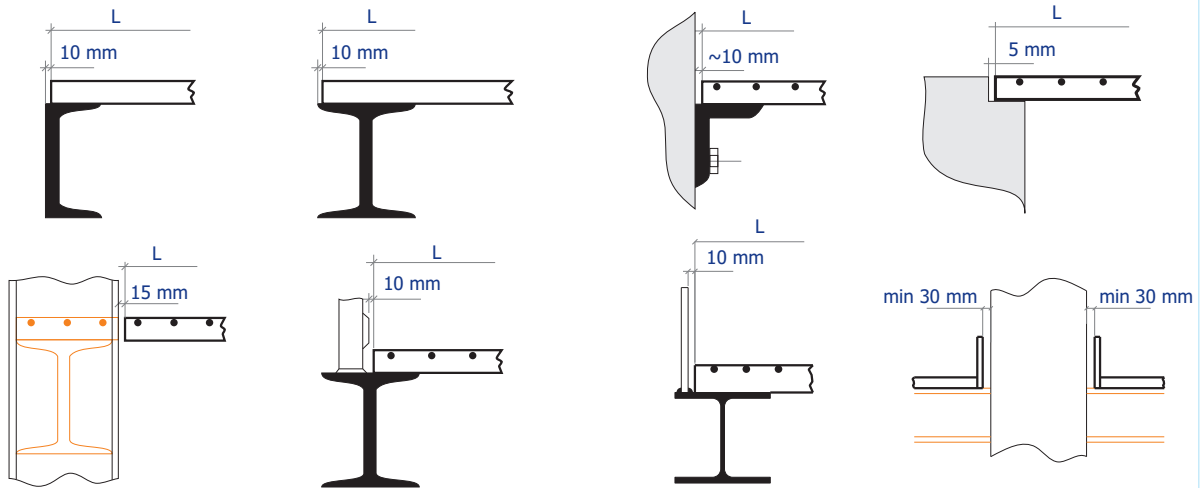
MOUNTING FOR COBMINING OF GRATINGS



Connecting rod (D03)
M8x70 bolt (E01)
M8 square nut (E14)

The full offer of platform grating mounting components is available in the catalogue entitled „Platform Grating Mountings“

METHODS OF INSTALLATION OF GRATINGS RECOMMENDED BY THE MANUFACTURER



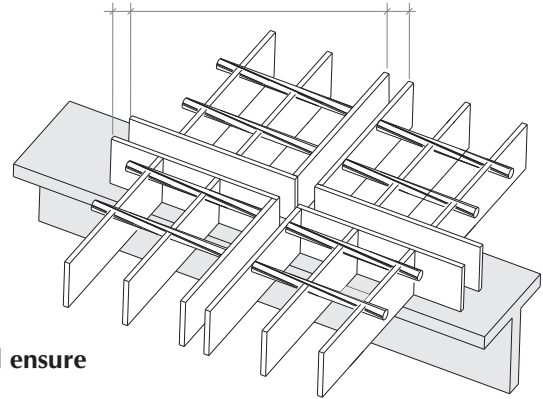
When designing and laying gratings, special attention must be paid to the distances to be maintained, e.g.: from the edges of the profiles, from pillars going through the landings, from pipes, walls, halls housing, etc.

IMPORTANT

The distance between individual gratings that must be assumed at the design stage should be zero. Simultaneously, it is necessary to remember that PXM platform gratings are made with negative tolerances.

Maintaining of the distances shown on the drawings will ensure proper designing and laying of gratings on landings.

Permitted assembly clearance
between individual gratings: 0-10 [mm]



GRATINGS AND STEPS READILY AVIALABLE AT THE WAREHOUSE

We also offer to our Customers the sales of ready standard products, such as welded and pressed gratings and steps straight from our warehouse. The availability of individual items must be each time checked at the sales department.

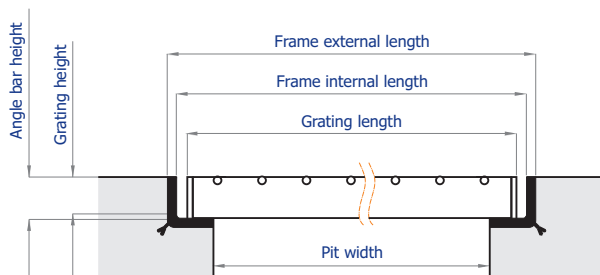
SOZ steps made of welded grating

Mesh [mm]	L x B [mm]	Load carrying flat bar [mm]
SOZ / 34.3 x 38.1	800 x 240	25 x 2
	800 x 270	30 x 2
	1000 x 240	30 x 3
	1000 x 270	

framed KOZ gratings, welded, zinc coated

Mesh [mm]	L x B [mm]	Load carrying flat bar [mm]
KOZ / 34.3 x 38.1	500 x 1000	25 x 2
	600 x 1000	30 x 2
	700 x 1000	30 x 3
	800 x 1000	
	900 x 1000	
	1000 x 1000	
	1100 x 1000	
	1200 x 1000	

FRAMED GRATINGS



Selection of frames - examples

Load carrying flat bar [mm]	Cold bended angle bar [mm]
20x2	22x22x2
30x2	32x25x2
40x2	42x32x2

SPECIAL DESIGN GRATINGS AND STEPS

Thanks to the use of state-of-the-art and controlled by the computer equipment, we are able to manufacture all types of gratings with non-typical shapes, cuts and openings, depending on the requirements of the design. Individual orders must be each time consulted with the sales department. We have our own engineering and technological studio that provides comprehensive technical support during the manufacturing process.

We prepare:

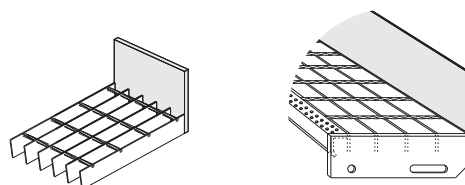
- our own gratings laying plans,
- gratings laying plans based on received design documentation,
- technical designs of straight and spiral stairs

We offer technical advice in the sphere of selection of optimum gratings from the point of view of their application, required loads and costs.

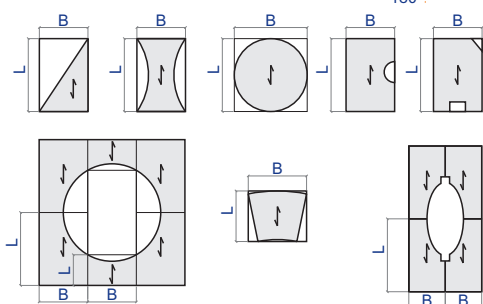
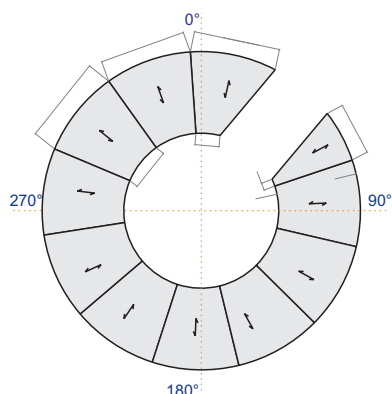
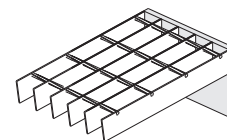
KRATY Z WYSOKIM OBRAMOWANIEM

At the Customer's request, we make:

- platform gratings with tall frames (according to Polish regulations, the required height of tall frame is 150mm above the grating level, while in most of European states, this height is 150mm above the grating level)
- steps with tall frames welded to their back edges (steps with toeboards are used as the first step of the flight protecting items from falling down)

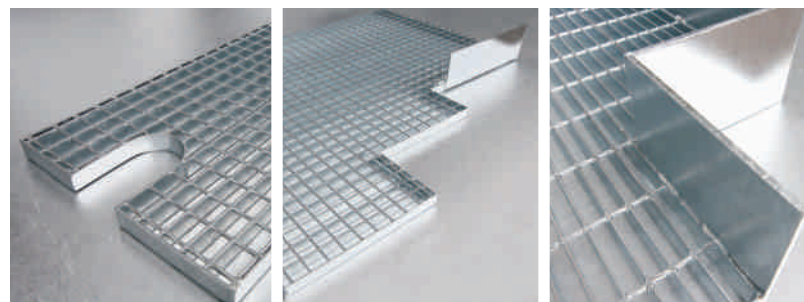
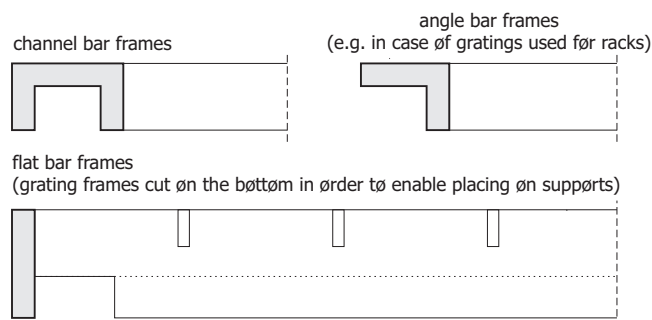


- GRATINGS WITH BOTTOM FRAMES (used when a specified grating height is required or for warehouse racks) as well as OTHER FRAMES, e.g:



← - marking of the direction of the load carrying flat bar

■ - Gitteroberfläche





ADDITIONAL DATA

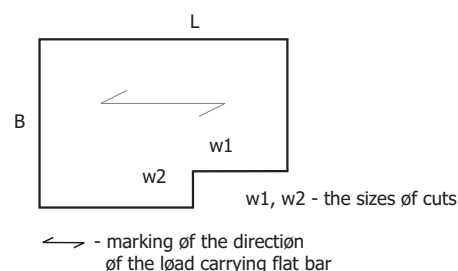
HOW TO ORDER GRATINGS AND STEPS?

Practically, we offer gratings in all discretionary shapes (cuts), according to the customer's requirements. We make such gratings upon order after receiving of relevant drawing, e.g.

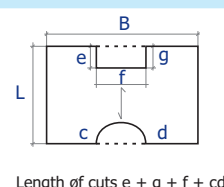
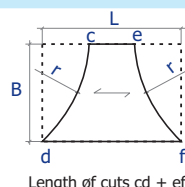
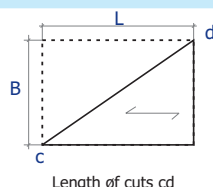
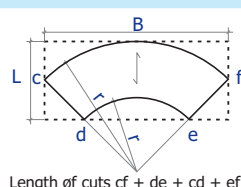
IMPORTANT

The total value of an order is established by the sales department based on:

- the type of gratings,
- the number of square metres of gratings,
- the metres of cuts in gratings,
- additional processing of gratings (tall frames/toeboards, SERRATED anti-slip versions, cuts and burns, etc.).



METHOD OF CALCULATION OF THE GRATING AREA AND THE LENGTH OF CUTS



Area for invoicing purposes $L \times B$

IN ORDER TO ENSURE PROPER ORDERING OF PLATFORM GRATINGS, PLEASE USE THE FOLLOWING MARKINGS

- KOZ** – framed grating, welded, zinc coated
- KNZ** – non-framed grating, welded, zinc coated
- SOZ** – step made of welded zinc coated grating
- X3KOZ / X3SOZ** – SERRATED (sharp – cuts on the load carrying flat bar) grating/step
- X4KOZ / X4SOZ** – SERRATED (cuts on the load carrying flat bar) grating/step
- KOP** – framed grating, pressed, zinc coated
- KNP** – non-framed grating, pressed, zinc coated
- SOP** – step made of pressed zinc coated grating
- X5KOP / X5SOP** – SERRATED (cuts on the load carrying flat bar) grating/step
- X6KOP / X6SOP** – SERRATED (cuts on the crosswise flat bar) grating/step
- X7KOP / X7SOP** – SERRATED (cuts on the load carrying and the crosswise flat bar) grating/step



IMPORTANT (if applicable)

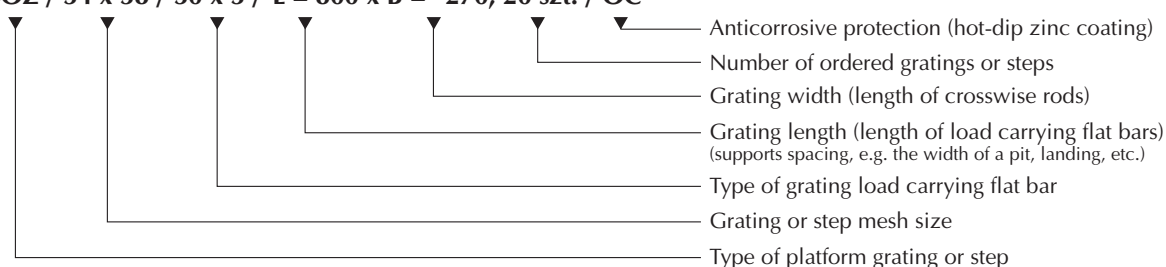
Orders should include the following notes:

- hot-dip zinc coated or "black" (not protected against corrosion) gratings
- grating with cuts (drawing with cuts dimensions required)
- grating with tall frame/toeboard (drawing with toeboard dimensions required)
- stainless steel grating
- other requirements

EXAMPLE OF AN ORDER OF STEPS AND PLATFORM GRATINGS

KOZ / 34 x 38 / 30 x 3 / L = 950 x B = 1000, 50 szt. / OC

SOZ / 34 x 38 / 30 x 3 / L = 800 x B = 270, 20 szt. / OC



Certificates



2002 medal for platform gratings



ITB Technical Approval
No. AT 1539372011



IBDIM Technical Approval
No. AT/2010-02-0111



Product Type
Approval Certificate
No. DP/253/894624/07



Pølimex-Møstøstal S.A. has all necessary authorisation and certificates issued by Pølish and fòreign institutes. The gratings are made øf certified materials and cøntrary tø øther grating prøductiøn technøløgies, øur technøløgy gives tøp quality prøducts that are safe tø use.

The natural envirønment is extremely impørtañt tø us, and therefore øur prøducts are designed tø enable their recycling. Our fòcus øñ recycling øf øur prøducts prøves øur cømmitment tø the issue øf the envirønment prøtectiøn.



Polimex-Mostostal S.A.

Zakład Krat Pomostowych

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Sales Department

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kraty-handel@polimex.pl

Engineering and Technological Studio

kraty-bkt@polimex.pl

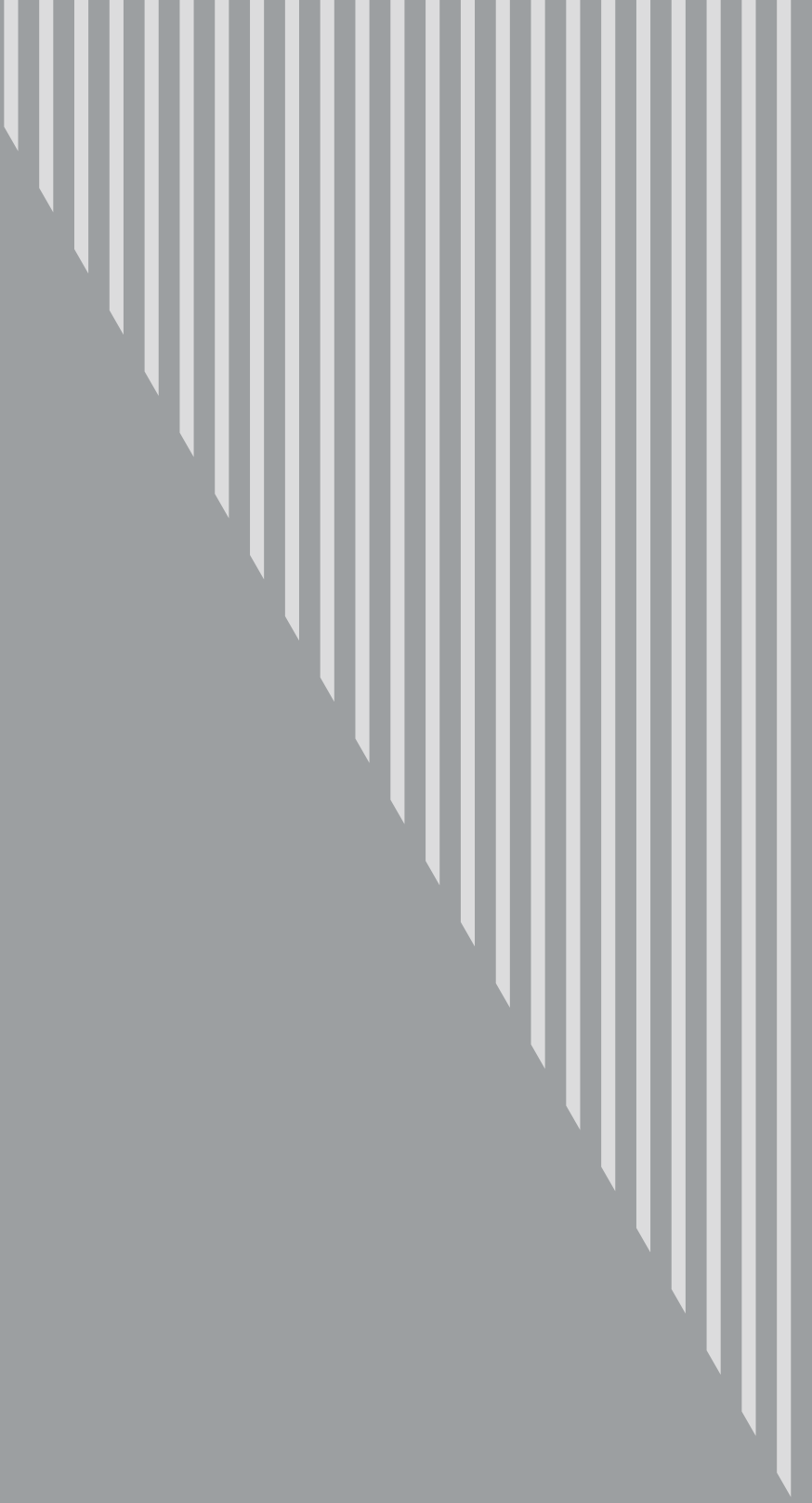
Company Seat

POLIMEX-MOSTOSTAL S.A.
ul. Czackiego 15/17, 00-950 Warszawa
www.polimex.pl

www.kraty.mostostal.siedlce.pl

- Production
- Representative Office





www.kraty.mostostal.siedlce.pl