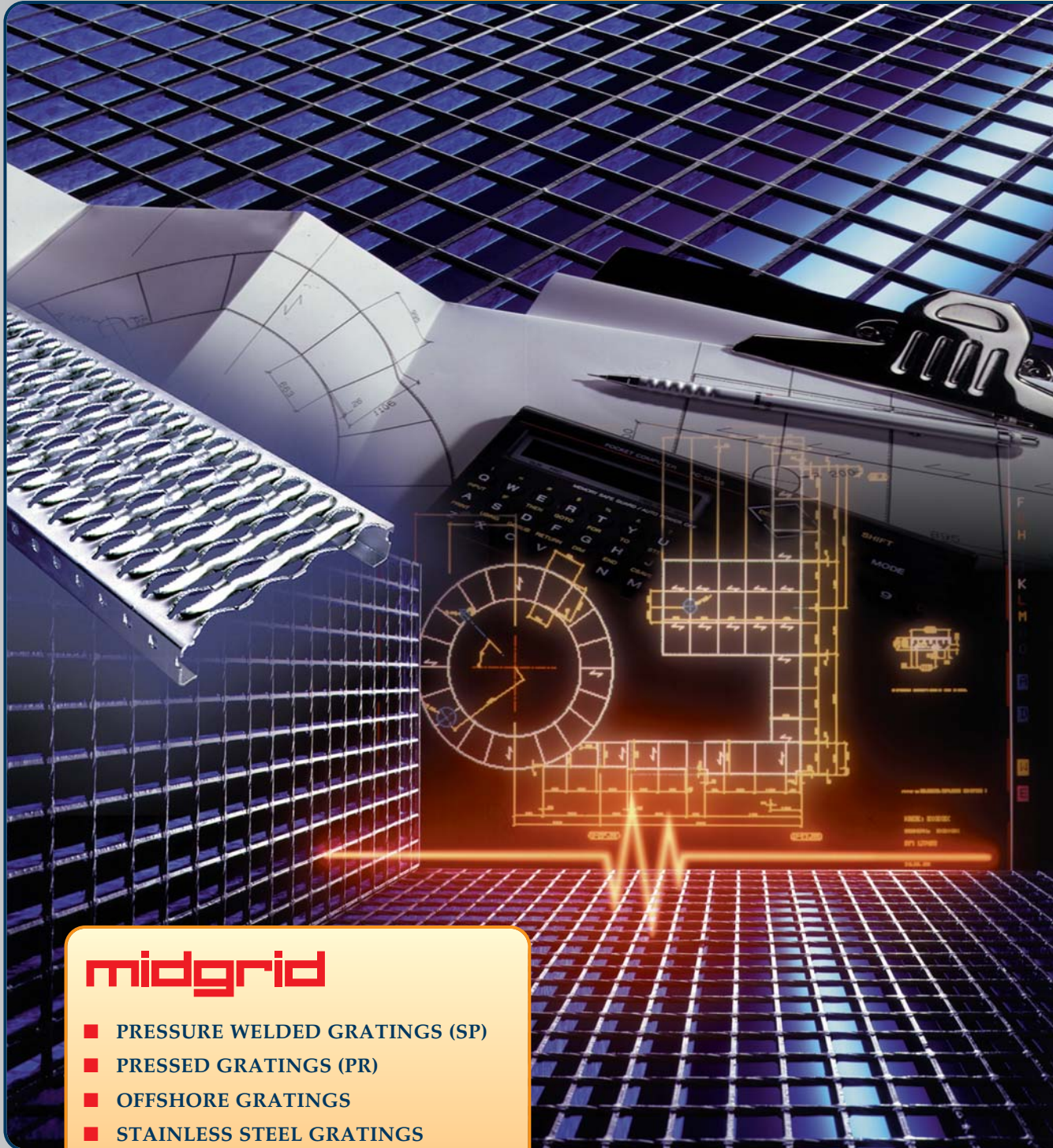


midgrid



MIDGRID EUROPEAN QUALITY

Open Mesh Steel Flooring



midgrid

- PRESSURE WELDED GRATINGS (SP)
- PRESSED GRATINGS (PR)
- OFFSHORE GRATINGS
- STAINLESS STEEL GRATINGS
- ALUMINIUM GRATINGS
- STAIRTREADS
- PRESSED SERRATED PLANKS
- CLIPS AND ACCESSORIES

**HANDRAIL INFORMATION
AVAILABLE ON REQUEST**

MIDGRID EUROPEAN QUALITY

MIDGRID has been established for more than 30 years supplying flooring products of high performance and reliability.

APPLICATIONS

MIDGRID open mesh steel flooring is a modern safety product used for platforms, landings, walkways, stairtreads, trench covers, shelving, partitions, protective guards, security fencing etc. All of which may be present in for example:

- Industrial and general construction
- Plant and conveyor systems
- Offshore installations
- Power stations and boiler rooms
- Desulphurising engineering for environmental protection
- Chemical and petro-chemical plants
- Waste disposal, water and effluent treatment plants
- Mining
- Bridge building
- Storage and warehousing systems
- Screens, security fences and facades
- Heating, ventilating and air-conditioning schemes
- and many others

COMPUTER CONTROLLED PERFORMANCE

MIDGRID, producers of pressure welded steel flooring on the European continent are setting a new trend in the manufacturing technique. MIDGRID's experience, gained over more than 30 years in the industry, is extensive in every area of production. The use of a fully integrated computer data system in administration, CAD for design and CAM/CNC for manufacturing ensures reliability, efficiency and technical superiority.

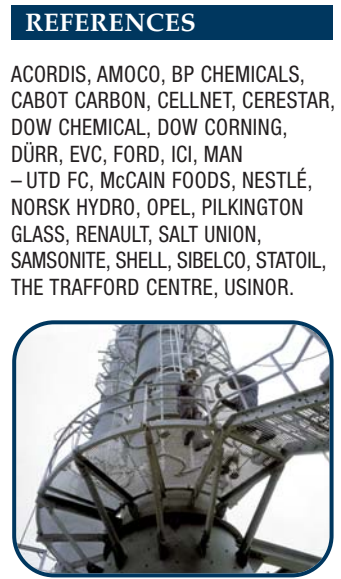
CAD (Computer Aided Design)

MIDGRID designs the layout of flooring using modern computer technology. As a result of graphical data processing (CAD) MIDGRID's drawings are of a high quality and clearly distinct.

CAM (Computer Aided Manufacturing)

The central processor unit directs the CNC processed units of the production, incorporating also the defined cutouts and make-up pieces quickly without transcription faults. This new advanced way into the future of Computer Aided Design and Manufacturing gives extensive customer benefits:

- Complete flexibility to incorporate modifications in the layout drawings.
- Transcription faults are minimised due to the internal data processing system.
- Integration of all relevant construction data into the layout drawings results in savings in the time required for approval. Multi-Color, high contrast finish layout plans are possible.
- Superior appearance of the layout plans in respect of outline exactness, high contrast and sharpness of image.
- Prompt deliveries due to the constant and complete computer survey of despatch dates.
- Maximum precision in the production process.
- Higher level of efficiency.



REFERENCES

ACORDIS, AMOCO, BP CHEMICALS, CABOT CARBON, CELLNET, CERESTAR, DOW CHEMICAL, DOW CORNING, DÜRR, EVC, FORD, ICI, MAN – UTD FC, McCAIN FOODS, NESTLÉ, NORSK HYDRO, OPEL, PILKINGTON GLASS, RENAULT, SALT UNION, SAMSONITE, SHELL, SIBELCO, STATOIL, THE TRAFFORD CENTRE, USINOR.



The MIDGRID range covers all technical requirements.

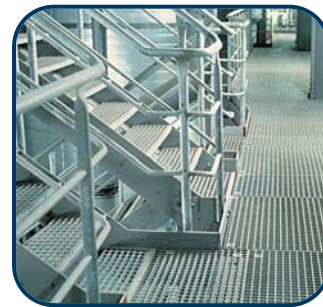
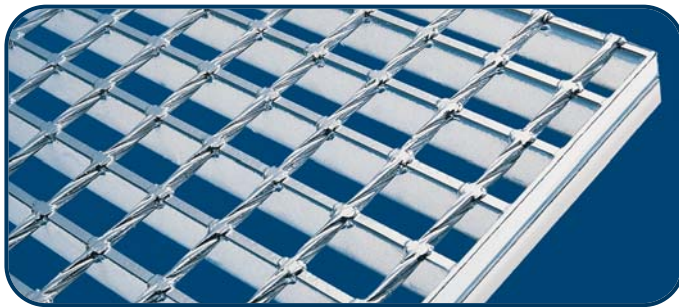
STANDARD PATTERNS

Type	Pitch ¹⁾	Load bearing bar section
SP 3438	34 x 38 mm	20-25-30-35-40-50-60 mm a.o.
SP 41100	40 x 100 mm	2-3-4-5 mm a.o.
SP 3450	34 x 50 mm	20-25-30-35-40-50-60 mm a.o.
SP 30100	30 x 100 mm	2-3-4-5 mm a.o.

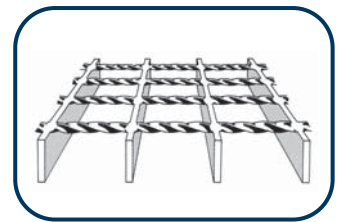
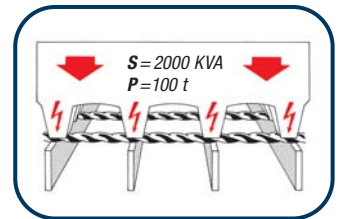
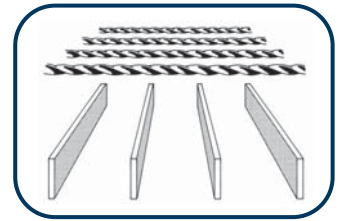
Other patterns are available upon request.

All pattern dimensions are measured center to center of load bearing and transverse bars (pitch).

- 1) The dimension center-to-center of the load bearing and transverse bars is the pitch.



DESIGN PRINCIPLE



During pressure welding, the twisted transverse bars are fully welded to the bearing bars under high pressure at every junction point. The result is a “one-piece construction” with a higher loadability and stability than other types of grating. MIDGRID SP Grating is distinguishing itself by its extreme durability and torsional rigidity. The application of this type of grating permits the total statical loading of structural units to be increased.

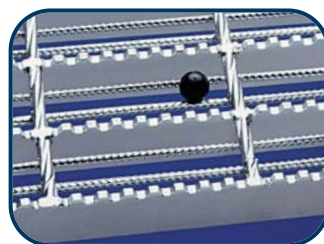
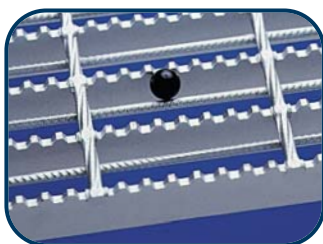
SPECIAL PATTERNS

MIDGRID produces special patterns of flooring designed to prevent a ball of 15 mm diameter, or other similarly dimensioned objects from passing through the apertures. Manufacture involves a round bar or bars being pressure welded to the underside of the transverse bars between adjacent load bearing bars. This special pattern of flooring is in accordance with the safety requirements for offshore installations etc. Special patterns are available with the following pitches:

Type	Pitch ²⁾
SPSU 34100	17 x 100 mm with single round bar
SPSU 43100 Utility Model 83 37 286	14 x 100 mm with two round bars

The load bearing bars and the transverse bars are produced in all practical sizes.

- 2) The dimension center-to-center of the load bearing, transverse and round bars is the pitch.



DET NORSKE VERITAS: MIDGRID Offshore Grating is certified according to the specifications of the Norwegian Institute “Det Norske Veritas” and complies with the requirements set forth by the “Norwegian Petroleum Directorate”.

Upon request, MIDGRID Grating is manufactured also in accordance with British Standard, Norme Française or other European standards.



MIDGRID EUROPEAN QUALITY

Economical and technical advantages can be achieved by utilising the **standard production programme**: planning the layout of panels to suit this programme can be extremely cost effective.

FLOORING IN STANDARD MAT FORM

Standard mats in economical and transportable lengths ranging from 3000 mm to 6000 mm can be obtained. MIDGRID can also provide standard mats or panels direct from stock.



STANDARD PANEL WIDTH

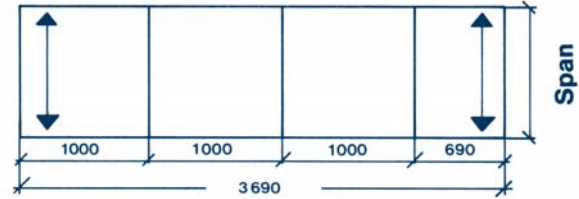
MIDGRID open mesh flooring is manufactured in standard panels of 1000 mm nominal width (i.e. measured in the direction of the transverse bars). The actual width of standard panels is approximately 998 mm, thus allowing the designer the advantage of setting-out his flooring on a 1000 mm grid system whilst having incorporated a clearance between adjacent panels.



LAYOUT OF FLOORING

When laying-out flooring it is highly recommended that the standard panel width be used wherever possible (1000 mm grid). The make-up piece can be easily cut out of a standard width, on site if necessary or supplied with a minimum of delay from our works.

Layout Example



ECONOMICAL OVERALL PANEL WIDTHS

The most economical, and therefore cost effective panel widths, are those which after being cut have a load bearing bar at each side (i.e. 1000 mm nominal width). The table below shows intermediate widths less than 1000 mm which also fulfil the above conditions and therefore should be used whenever possible. Widths other than those shown can be used, however these would be more cost intensive.

MEASUREMENTS ACCORDING TO REQUIREMENTS

Bearing bar thickness								
3 mm			4 mm			5 mm		
Pitch of bearing bars								
30	34	41	30	34	41	30	34	41
214	208	210	215	209	211	216	210	212
244	243	251	245	244	252	246	245	253
274	277	293	275	278	294	276	279	295
304	311	334	305	312	335	306	313	336
334	346	376	335	347	377	336	348	378
364	380	417	365	381	418	366	382	419
394	414	458	395	415	459	396	416	460
424	449	500	425	450	501	426	451	502
455	483	541	456	484	542	457	485	543
485	517	583	486	518	584	487	519	585
515	552	624	516	553	625	517	554	626
545	586	665	546	587	666	547	588	667
575	620	707	576	621	708	577	622	709
605	655	748	606	656	749	607	657	750
635	689	790	636	690	791	637	691	792
665	723	831	666	724	832	667	725	833
695	758	872	696	759	873	697	760	874
725	792	914	726	793	915	727	794	916
756	826	955	757	827	956	758	828	957
786	861	997	787	862	998	788	863	999
816	895		817	896		818	897	
846	929		847	930		848	931	
876	964		877	965		878	966	
906	998		907	999		908	1000	
936			937			938		
966			967			968		
996			997			998		

Tolerances +0 -4 mm based on 1000 mm standard panel width.

MIDGRID SP GRATING



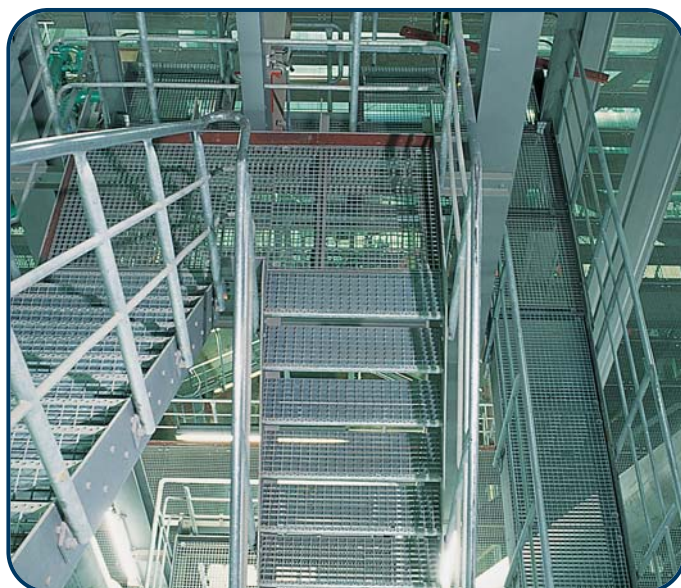
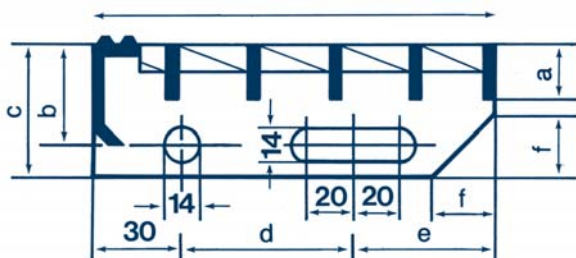
All stairtreads are available in the same patterns as those MIDGRID supplies for platforms, landings, walkways etc.

STANDARD STAIRTREADS

Stairtreads with 30 x 3 mm and 40 x 3 mm load bearing bars are available from stock, whilst other sections are available on request. We reserve the right (without any price increase) to supply stairtreads with stronger load bearing bars than those ordered.

Length +0/-3	Width +/-5	a	b	c	d	e	f
600	252	50	65	100	N/A	40	40
	275	50	65	125	N/A	40	40
	292	50	65	125	N/A	40	40
800	252	50	65	100	N/A	40	40
	275	50	65	125	N/A	40	40
	292	50	65	125	N/A	40	40
1000	252	50	65	100	N/A	40	40
	275	50	65	125	N/A	40	40
	292	50	65	125	N/A	40	40
1200	252	50	65	100	N/A	40	40
	275	50	65	125	N/A	40	40
	292	50	65	125	N/A	40	40

Layout Example



SLOTTED HOLE

MIDGRID stairtreads are supplied complete with welded-on end plates incorporating one circular and one slotted hole. The slotted hole allows some lateral tolerances and makes for easier bolting to the staircase stringers.

SPECIAL SAFETY NOSING

Stairtreads are fitted with a perforated safety nosing. This particular nosing has a raised edge around the perforation thus providing a nonslip surface in oily, icy and humid conditions.



Stairtreads are available according to: AFNOR, ASTM, BS, DIN or to your individual demands.

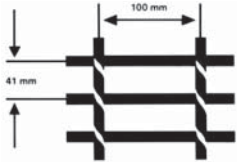


MIDGRID SP GRATING

SAFE-LOAD & DEFLECTION TABLES

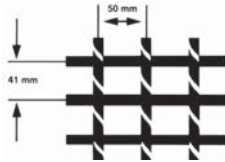
TYPE 41100 (GE)

Bearing bars at 41 mm centres.
Transverse bars at 100 mm centres.



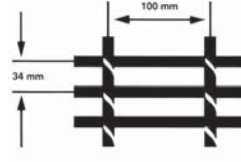
TYPE 4150 (GC)

Bearing bars at 41 mm centres.
Transverse bars at 50 mm centres.



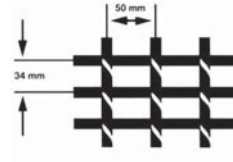
TYPE 34100 (AE)

Bearing bars at 34 mm centres.
Transverse bars at 100 mm centres.



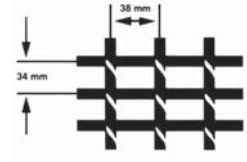
TYPE 3450 (AC)

Bearing bars at 34 mm centres.
Transverse bars at 50 mm centres.



TYPE 3438 (AA)

Bearing bars at 34 mm centres.
Transverse bars at 38 mm centres.



► Other pitches like 34 x 16 mm, 22 x 26 mm etc. are equally available.

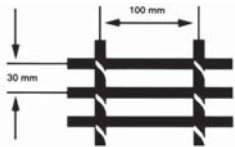
TYPES 41100 AND 4150

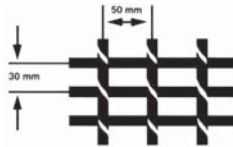
Section	Weight in kg/sq m		Clear span in millimetres																		
			300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700		
20 x 3	Type 41	U	70.0	31.0	17.5	11.2	7.8	5.7													
	14	d	0.7	1.6	3.0	4.7	6.7	9.2													
20 x 3	Type 34	C	10.5	7.0	5.3	4.2	3.5	3.0													
	17	d	0.6	1.3	2.4	3.8	5.4	7.3													
20 x 5	Type 41	U	116.0	52.0	29.1	18.6	12.9	9.5	7.3												
	22	d	0.7	1.6	3.0	4.6	6.7	9.2	11.9												
20 x 5	Type 34	C	17.4	11.6	8.7	7.0	5.8	5.0	4.4												
	27	d	0.6	1.3	2.4	3.7	5.4	7.3	9.6												
25 x 3	Type 41	U	110.0	48.8	27.4	17.6	12.3	9.0	6.8												
	18	d	0.6	1.4	2.6	3.9	5.9	7.9	10.0												
25 x 3	Type 34	C	16.6	11.0	8.2	6.6	5.5	4.7	4.1												
	20	d	0.5	1.1	2.0	3.1	4.3	6.1	8.0												
25 x 5	Type 41	U	183.0	81.0	45.6	29.2	20.2	14.9	11.5	8.5											
	29	d	0.6	1.4	2.5	3.9	5.6	7.5	10.0	12.7											
25 x 5	Type 34	C	27.4	18.2	13.7	11.0	9.1	7.8	6.9	5.7											
	33	d	0.5	1.1	2.0	3.1	4.3	6.1	8.0	10.5											
30 x 3	Type 41	U	158.0	71.0	39.5	25.2	17.5	12.9	9.9	7.8	6.3										
	21	d	0.5	1.1	2.1	3.2	4.7	6.3	8.2	10.5	12.9										
30 x 3	Type 34	C	23.7	15.8	11.8	9.5	7.9	6.7	5.9	5.2	4.7										
	24	d	0.4	0.9	1.6	2.6	3.7	5.0	6.6	8.3	10.3										
30 x 5	Type 41	U	228.0	117.0	65.8	42.1	29.2	21.5	16.4	13.0	10.5	8.6									
	32	d	0.5	1.1	2.1	3.2	4.7	6.3	8.2	10.5	12.9	16.3									
30 x 5	Type 34	C	30.5	26.3	19.7	15.8	13.1	11.3	9.8	8.7	7.8	7.1									
	38	d	0.4	0.9	1.6	2.6	3.7	5.0	6.6	8.3	10.3	13.3									
35 x 3	Type 41	U	215.0	95.7	53.2	34.4	23.9	17.6	13.4	10.6	8.6	7.1									
	24	d	0.4	1.0	1.8	2.8	3.9	5.4	7.1	9.0	11.1	13.5									
35 x 3	Type 34	C	32.2	21.5	16.1	12.9	10.7	9.2	8.0	7.1	6.4	5.8									
	27	d	0.3	0.8	1.4	2.3	3.2	4.3	5.7	7.2	8.6	10.8									
35 x 5	Type 41	U	385.0	159.0	89.0	57.0	39.8	29.2	22.4	17.7	14.3	11.8	9.9	8.4							
	37	d	0.4	1.0	1.8	2.8	3.9	5.4	7.1	9.0	11.1	13.5	16.6	19.6							
35 x 5	Type 34	C	53.8	35.8	26.8	21.5	17.9	15.3	13.4	11.9	10.7	9.8	8.9	8.2							
	44	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							
40 x 3	Type 41	U	281.0	125.0	71.0	44.9	31.0	22.8	17.4	13.8	11.2	9.2	7.7	6.6							
	27	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							
40 x 3	Type 34	C	42.0	28.0	21.1	16.9	14.0	12.0	10.5	9.3	8.4	7.6	7.0	6.4							
	31	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							
40 x 5	Type 41	U	472.0	208.0	117.0	75.0	52.0	38.2	29.2	23.1	18.6	16.5	12.3	11.0	9.5	8.3					
	42	d	0.3	0.8	1.5	2.4	3.8	4.8	6.2	7.9	9.7	11.8	13.8	16.4	19.0	20.6					
40 x 5	Type 34	C	70.0	46.8	35.1	28.0	23.3	20.1	17.5	15.6	14.0	12.7	10.8	10.0	9.3						
	50	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					
45 x 5	Type 41	U	592.0	263.0	148.0	95.0	65.0	48.3	37.0	29.2	23.6	19.5	16.4	14.0	12.1	10.5	9.6				
	47	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				
45 x 5	Type 34	C	89.0	59.0	44.4	35.5	29.6	25.3	22.2	19.7	17.6	16.1	14.8	13.7	12.7	11.8	11.1				
	56	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				
50 x 5	Type 41	U	731.0	325.0	183.0	117.0	81.0	59.0	45.7	36.1	29.2	24.1	20.3	17.3	14.9	13.0	11.4	10.2			
	52	d	0.3	0.7	1.2	2.0	2.8	3.8	5.0	6.3	7.8	10.4	11.2	13.2	15.2	17.5	19.9	22.4	25.2		
50 x 5	Type 34	C	109.0	75.0	55.0	43.8	36.6	31.3	27.4	24.3	21.9	19.9	18.3	16.9	15.6	14.6	13.7	12.9	12.2		
	62	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	18.0	20.1		
60 x 5	Type 41	U	1066.7	474.1	266.6	170.6	118.5	87.0	66.6	52.6	42.6	35.2	29.6	25.2	21.7	18.9	16.6	14.7	13.1		
	62	d	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.2	5.5		
60 x 5	Type 34	C	160.2	106.7	80.0	64.0	53.3	45.7	40.0	35.5	32.0	29.1	26.6	24.6	22.8	21.3	20.0	18.8	17.7		
	74	d	0.2	0.3	0.6	0.9	1.3	1.8	2.3	3.0	3.6	4.4	5.2	6.2	7.1	8.2	9.3	10.6	11.8		

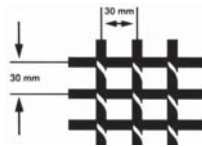
U Uniformly distributed load in KN/Sq Metre.
C Concentrated load in KN/Metre width at mid-span.
d Deflection in Millimetres.

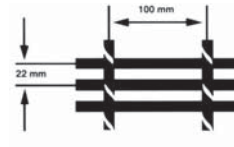
■ Areas to the left of the red lines represent the possible spans complying with the requirements of BS 4592 1987 in respect of load and deflection i.e. the minimum uniformly distributed load of 5 kn/m² limiting deflection to 10 mm or 1/200 of the span, whichever is the lesser.

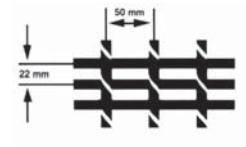
TYPE 30100 (BE)

 Bearing bars at 30 mm centres.
 Transverse bars at 100 mm centres.

TYPE 3050 (BC)

 Bearing bars at 30 mm centres.
 Transverse bars at 50 mm centres.

TYPE 3030 (BA)

 Bearing bars at 30 mm centres.
 Transverse bars at 30 mm centres.

TYPE 22100 (KE)

 Bearing bars at 22 mm centres.
 Transverse bars at 100 mm centres.

TYPE 2250 (KC)

 Bearing bars at 22 mm centres.
 Transverse bars at 50 mm centres.

TYPES 30100 AND 3050

Section	Weight in kg/sq m		Clear span in millimetres																
			300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
20 x 3	Type 30	U	94.0	41.9	23.5	15.1	10.5	7.7	5.9										
	19	d	0.7	1.6	3.0	4.7	6.7	9.2	11.9										
20 x 5	Type 22	C	14.1	9.4	7.1	5.7	4.7	4.0	3.51										
	26	d	0.6	1.3	2.4	3.8	5.4	7.3	9.6										
20 x 5	Type 30	U	157.0	70.0	39.2	35.1	17.4	12.8	9.8										
	30	d	0.7	1.6	3.0	4.6	6.7	9.2	11.9										
25 x 3	Type 22	C	23.5	15.7	11.8	9.4	7.8	6.7	5.9										
	41	d	0.6	1.3	2.4	3.7	5.4	7.3	9.6										
25 x 3	Type 30	U	148.0	67.0	37.1	23.7	16.6	12.1	9.3	7.4									
	23	d	0.6	1.3	2.4	3.7	5.4	7.3	9.6	12.2									
25 x 5	Type 22	C	22.3	14.8	11.2	8.9	7.4	6.3	5.5	5.0									
	31	d	0.5	1.0	1.9	3.0	4.3	5.9	7.6	9.7									
25 x 5	Type 30	U	248.0	110.0	62.0	39.6	27.5	20.2	15.5	12.2	9.9								
	37	d	0.6	1.3	2.4	3.7	5.4	7.3	9.6	12.2	14.9								
30 x 3	Type 22	C	37.1	24.7	18.6	14.9	12.4	10.6	9.3	8.3	7.4								
	50	d	0.6	1.0	1.9	3.0	4.3	5.9	7.6	9.7	12.0								
30 x 3	Type 30	U	214.0	95.0	53.0	34.2	23.8	17.4	13.3	10.5	8.5	7.0							
	27	d	0.5	1.1	2.0	3.1	4.5	6.1	7.9	10.1	12.4	15.0							
30 x 5	Type 22	C	32.0	21.4	16.1	12.8	10.7	9.2	8.0	7.1	6.4	5.8							
	37	d	0.4	0.9	1.6	2.5	3.6	4.9	6.3	8.0	10.0	12.1							
30 x 5	Type 30	U	356.0	158.0	89.0	57.0	39.6	29.1	22.3	17.6	14.2	11.7	9.9						
	43	d	0.5	1.1	2.0	3.1	4.5	6.1	7.9	10.1	12.4	15.0	17.9						
35 x 3	Type 22	C	54.0	35.7	26.7	21.4	17.8	15.2	13.3	11.9	10.7	9.7	8.8						
	59	d	0.4	0.9	1.6	2.5	3.6	4.9	6.3	8.0	10.0	12.1	14.3						
35 x 3	Type 30	U	291.0	130.0	73.0	46.6	32.4	23.8	18.2	14.3	11.7	9.3	8.1						
	31	d	0.4	0.9	1.7	2.7	3.8	5.2	6.8	8.7	10.7	13.0	15.3						
35 x 5	Type 22	C	43.7	29.1	21.9	17.5	14.5	12.5	10.9	9.7	8.7	8.0	7.3						
	42	d	0.3	0.7	1.4	2.2	3.1	4.2	5.5	6.9	8.6	10.4	12.2						
35 x 5	Type 30	U	486.0	216.0	122.0	78.0	54.0	39.6	30.3	23.9	19.4	16.0	13.4	11.4	9.9				
	50	d	0.4	0.9	1.7	2.7	3.8	5.2	6.8	8.7	10.7	13.0	15.3	18.1	21.0				
40 x 3	Type 22	C	73.0	48.5	36.4	29.1	24.3	20.7	18.2	16.2	14.6	13.2	12.1	11.2	10.4				
	68	d	0.3	0.7	1.4	2.2	3.1	4.2	5.5	6.9	8.6	10.4	12.2	14.5	16.7				
40 x 3	Type 30	U	380.0	170.0	96.0	61.0	42.1	30.9	23.9	18.8	15.2	12.6	10.5	9.0	7.7				
	35	d	0.4	0.8	1.5	2.3	3.4	4.6	5.9	7.6	9.3	11.3	13.4	15.7	18.2				
40 x 5	Type 22	C	57.0	37.8	28.8	22.8	18.9	16.2	14.2	12.6	11.3	10.3	9.5	8.8	8.2				
	48	d	0.3	0.6	1.2	1.9	2.7	3.7	4.7	6.1	7.5	9.1	10.8	12.5	14.5				
40 x 5	Type 30	U	635.0	282.0	158.0	101.0	70.7	52.0	39.6	31.3	25.4	21.0	17.6	15.0	12.9	11.2	9.9		
	57	d	0.4	0.8	1.5	2.3	3.4	4.6	5.9	7.6	9.3	11.3	13.4	15.7	18.2	20.8	23.8		
45 x 5	Type 22	C	95.0	64.0	47.5	38.0	31.6	27.2	23.7	21.2	19.0	17.3	15.9	14.6	13.6	12.7	11.8		
	78	d	0.3	0.6	1.2	1.9	2.7	3.7	4.7	6.1	7.5	9.1	10.8	12.5	14.5	16.7	19.1		
45 x 5	Type 30	U	803.0	375.0	201.0	128.0	89.0	65.0	50.0	39.6	32.1	26.4	22.2	18.9	16.3	14.2	12.5	11.0	
	63	d	0.3	0.7	1.3	2.1	3.0	4.0	5.4	6.7	8.3	10.1	11.9	14.1	16.3	18.7	21.2	24.0	
50 x 5	Type 22	C	120.0	80.0	60.0	48.1	40.1	34.4	30.1	26.8	24.1	21.8	20.0	18.5	17.2	16.0	15.0	14.1	
	86	d	0.2	0.6	1.0	1.6	2.4	3.2	4.3	5.4	6.7	8.0	9.6	11.3	13.0	14.9	17.0	19.2	
50 x 5	Type 30	U	991.0	440.0	247.0	159.0	110.0	81.0	62.0	48.9	39.6	32.7	27.5	23.4	20.2	17.6	15.4	13.7	12.2
	70	d	0.3	0.7	1.2	1.9	2.7	3.7	4.8	6.1	7.5	9.1	10.8	12.7	14.6	16.8	19.2	21.6	24.2
60 x 5	Type 22	C	148.0	99.0	75.0	60.0	49.5	42.5	37.2	32.8	29.7	27.0	24.7	22.8	21.2	19.8	18.5	17.5	16.5
	95	d	0.2	0.6	1.0	1.4	2.1	3.0	3.9	4.8	6.0	7.2	8.6	10.1	11.7	13.4	15.3	17.3	19.4
60 x 5	Type 30	U	1305.6	644.8	362.7	232.1	161.1	118.4	90.6	71.6	58.0	47.9	40.2	34.3	29.6	25.7	22.6	20.0	17.9
	83	d	0.1	0.9	1.2	1.5	1.8	2.1	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.5
60 x 5	Type 22	C	217.9	145.2	108.8	87.1	72.5	62.2	54.4	48.3	43.5	39.5	36.2	33.4	31.0	29.0	27.2	25.6	24.1
	112	d	0.2	0.4	0.6	0.9	1.3	1.8	2.4	3.0	3.7	4.4	5.3	6.2	7.2	8.2	9.3	10.5	11.8

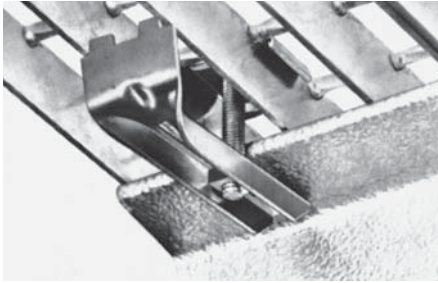
■ The yellow lines represent the same criteria for serrated pattern grids.

■ For grids type 34100, 3450, 3438 (bearing bars at 34 mm centres) the tabulated loads should be increased by about 25%.

■ For grids type 22100, 2250 (bearing bars at 22 mm centres) the tabulated loads should be increased by about 35%.

MIDGRID FIXING CLIPS

STANDARD CLAMP



Consists of clip, bolt with nut, and robust angle clamp.

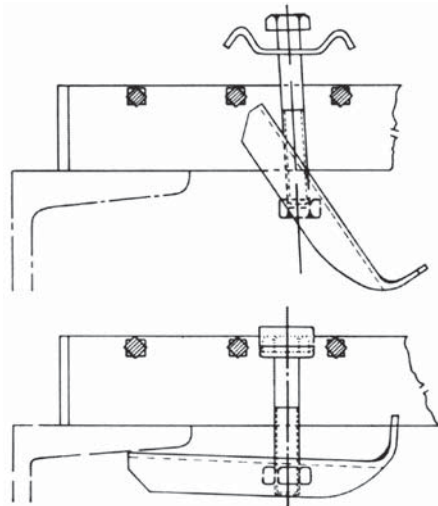
MATERIAL:

Hot dipped galvanised steel.

APPLICATION:

For fixing panels on platforms, gangways, etc, is fixed from above the grid when laid in position.

Assembly drawing



SAFETY CLAMP



Combined fixing and anti-slip clamp consists of clip with U-shaped safety lock, bolt with nut, angle clamp. TOUGH CONSTRUCTION.

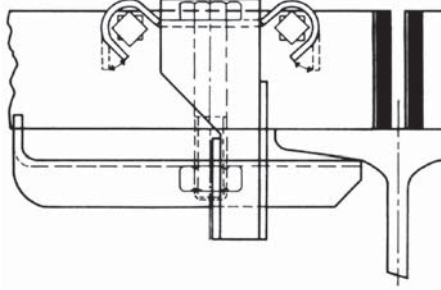
MATERIAL:

Hot dipped galvanised steel.

APPLICATION:

Stairways, platforms, etc., as protection against slipping. Clip is attached firmly to grid by means of lever. The tough safety piece prevents slipping even if nut works loose. Also prevents sliding of grids when stacked. PROTECTS MATERIAL AND HUMAN LIFE. Is mounted like standard clamp shown above.

Assembly drawing



DOUBLE CLAMP



Consists of two clips, two bolts with nuts, and one clamping bar.

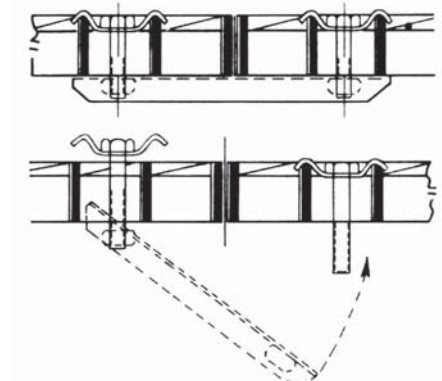
MATERIAL:

Hot dipped galvanised steel.

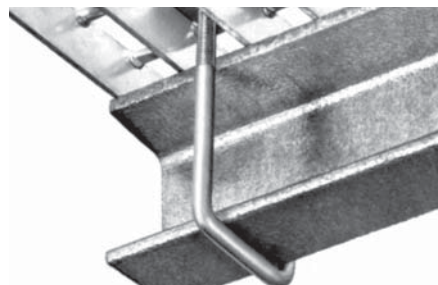
APPLICATION:

1-Load distribution at points where panels join, this increases load carrying capacity and offers the possibility of larger span widths.
2-In grid plates which have large sections cut out (from 300 mm square Ø and more) for load distribution to adjacent panels.

Assembly drawing



HOOK BOLTS



Supplied on request as a special fixing element for U-profiles.

THREADED BOLTS

The firing or welding in of threaded bolts to secure grid plates can be carried out if specified in the order. Special information available on request.

DIN

DIN: MIDGRID will comply with the following DIN standards subject to a prior agreement to this effect:

- DIN 24537 – Grating
- DIN 24530 – Steel stairs
- DIN 24531 – Treads made of grating
- DIN 24533 – Steel railings
- EN 10048 – Hot-rolled steel strip
- DIN EN ISO 1461 (DIN 50 976) – Hot-galvanizing of component parts
- DIN 1055 – Live or traffic loads
- DIN EN 10025 – Hot-rolled products of non-alloyed structural steels
- DIN EN ISO 14122 Part 1 – 3 – Safety of machinery – Permanent means of access to machines

MIDGRID can offer the appropriate product to suit all practical requirements.

COMPLETE LIST OF FIXING CLIPS

Fixing clips are designed and supplied to suit the specific requirements. The MIDGRID range includes:

fixing clips

- standard clips
- safety clips
- double clips (jointing channels)
- studs (fired)
- welded studs
- hook bolts
- and others

security and safety devices

- locking chain
- locking hooks
- box spanner locking (locking to be operated from top or underside)
- special box spanner
- hinges
- and others

FINISHES

The flooring is in general Self Colour or Hot Dip Galvanised Finish.



BINDING

The ends of load bearing bars are generally closed by binding with a double profiled steel flat. In this process each load bearing bar is slag free automatically welded twice in its depth through the profiled binding. The points of welding are arranged so that they fall into the tension stressed area of the main bars. Flooring panels can be bound with:

Normal binding

- ▶ Same depth as load bearing bar.

Deep binding

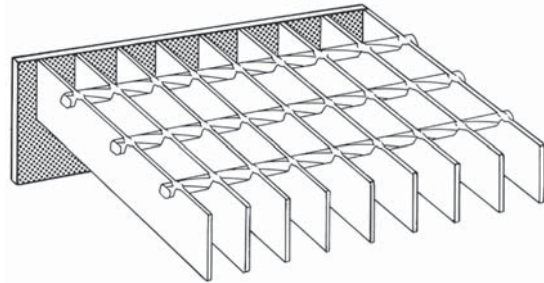
- ▶ Greater depth than load bearing bar and projecting below the underside.

Kick flat (toe plate)

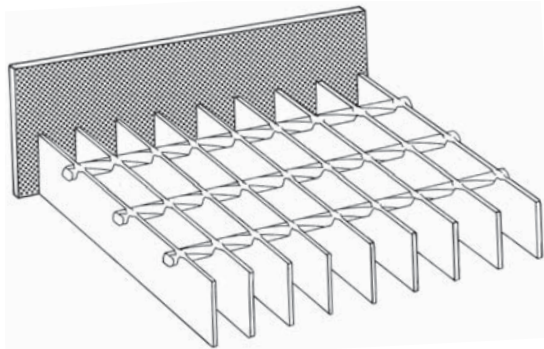
- ▶ Greater depth than load bearing bar and projecting above top of flooring.

Angle iron etc.

DEEP BINDING

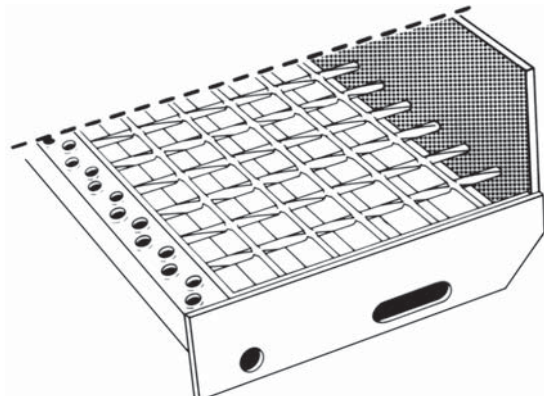


KICK FLAT (TOE PLATE)



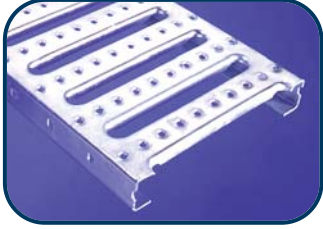
TREAD UP END BINDING

A flat iron will be welded to the rear edge of tread if requested in full length, in order to prevent objects from falling down or skidding between treads.



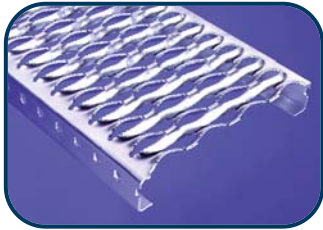
MIDGRID PRESSED PLANKS AND SAFETY LADDER RUNGS

PRESSED PLANKS



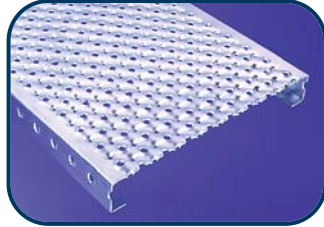
Pressed Planks of the «**Slotted**» type can be used for pedestrian overhead crossings on railway bridges.

The Pressed Planks are recommended as an ideal covering for drainage channels on Car Parks, on buildings and garages.

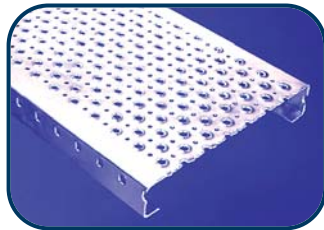


Pressed Planks of the «**Serrated**» type can be used for catwalks in sewage purification/water treatment plants.

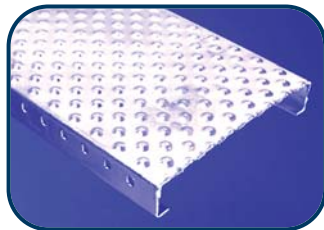
MIDGRID supplies Pressed Planks in basic finish (Black), galvanised, stainless steel or aluminium.



«**Round**» Type



«**Offshore**» Type

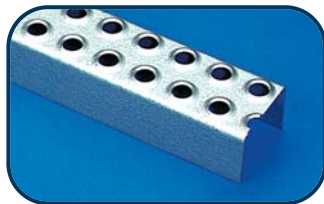


«**Closed**» Type

Pressed Planks Type	Length L max. [mm]	Width B [mm]	Height H [mm]	Thickness S [mm]
« Slotted »	3000	150/200/250/300	25/40/50/75	1.5/2.0/2.5
« Serrated »	3000	200/250/300/400/480	40/50/75	1.5/2.0/2.5
« Round »	3000	150/200/250/300	40/50/75	1.5/2.0/2.5
« Offshore »	3000	150/200/250/300	40/50/75	1.5/2.0/2.5
« Closed »	3000	150/200/250/300	40/50/75	1.5/2.0/2.5



SAFETY LADDER RUNGS (STEEL, UNFINISHED AND STAINLESS STEEL)



Nominal rung size: 500 mm with straight ends. Also available in 2000 mm standard length to be cut to size on site.



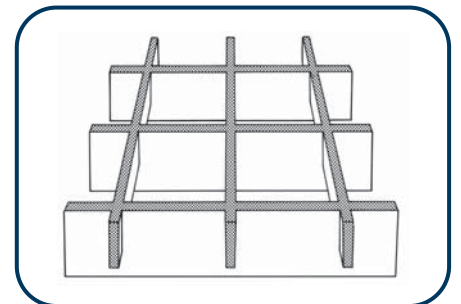
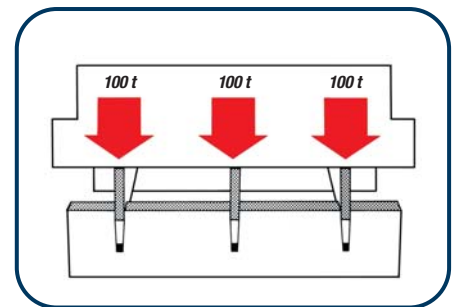
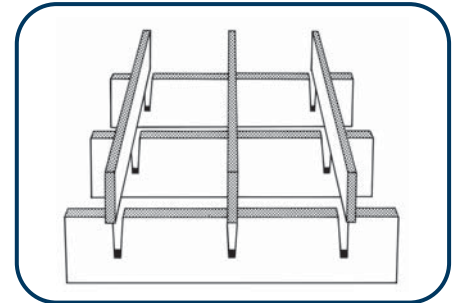
Nominal rung size: 500 mm, with notched ends, suitable for welding to Ø 48.3 mm metal tubes.



Nominal rung size: 300 mm with straight ends. Also available in 2000 mm standard length to be cut to size on site.

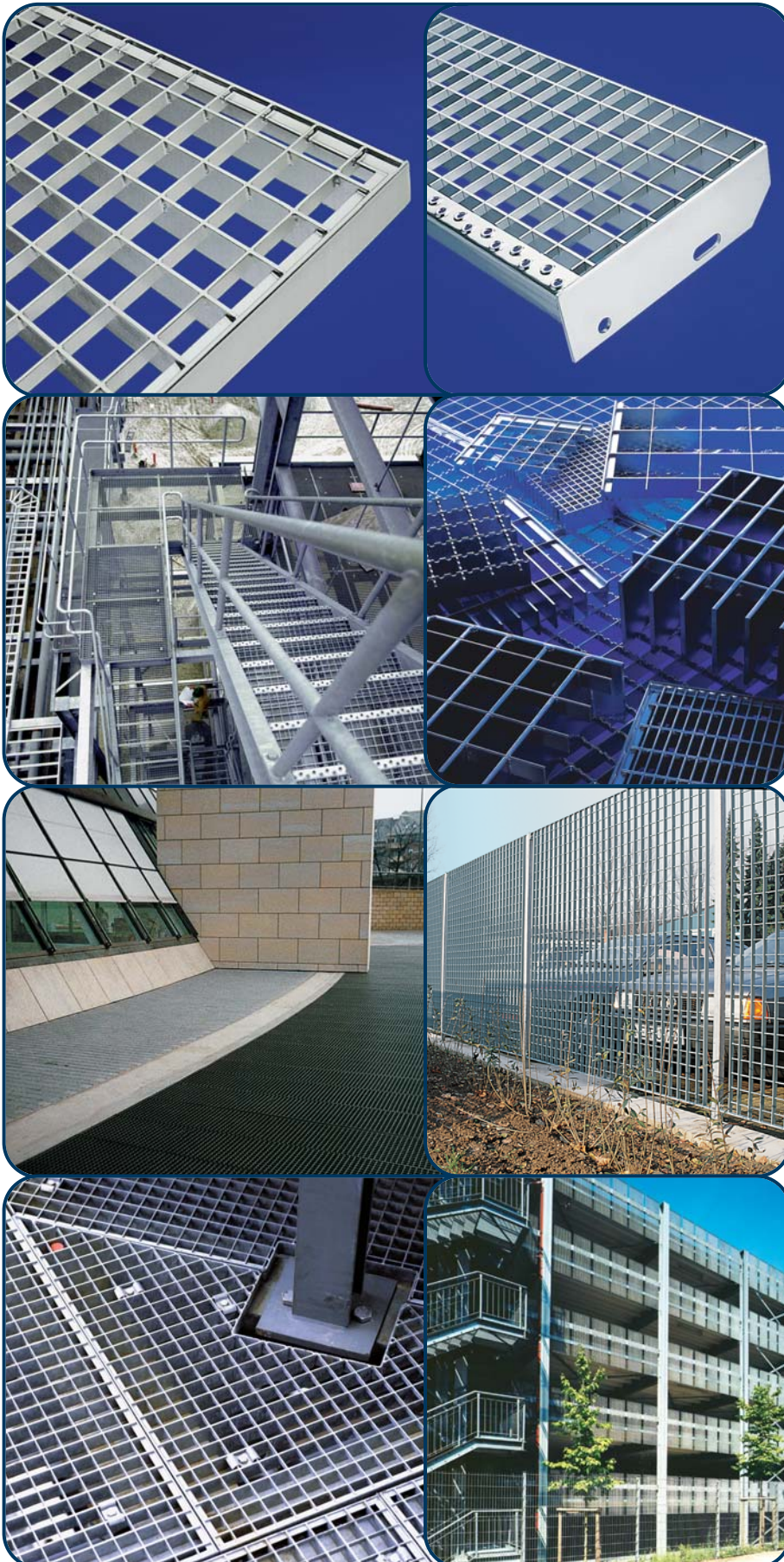
Product Description	Steel, unfinished Stainless steel 1.4301 (untreated) Stainless steel 1.4571 (untreated)		
	Ladder rung featuring two rows of punched holes	Nominal size: 500 mm straight 497/50/37/2 mm	Nominal size: 500 mm round, with notches suitable for Ø 48.3 mm size round tubes 484/50/37/2 mm
Ladder rung featuring one row of punched holes	Nominal size: 300 mm straight 298/25/37/2 mm		Standard length: 2000 mm 2000/25/37/2 mm

DESIGN PRINCIPLE



The transverse bars are pressed into the serrated slots of bearing bars under high pressure. As a result of this high pressure ("cold welding") MIDGRID grates feature a high loadability and stability and offer two essential benefits, namely:

1. the grating is well suited for any further processing such as sawing,
2. disturbing clattering or rattling noises are avoided permanently.



MIDGRID PR GRATING MANUFACTURING PROGRAM

Meshes Distance between bar centers	Bearing bar height and thickness Grating weight /m ²																			
	20 x 2	25 x 2	30 x 2	35 x 2	40 x 2	50 x 2	20 x 3	25 x 3	30 x 3	35 x 3	40 x 3	50 x 3	25 x 4	30 x 4	40 x 4	50 x 4	25 x 5	30 x 5	40 x 5	50 x 5
33 x 33	16 C	18 C	21 C	23 C	26 C	31 C	21 C	25 C	27 C	32 C	35 C	41 C	33	36	47	61	40	46	61	81
35 x 33	16	18	20	22	25	30	20	24	26	30	33	39	31	34	45	57	38	44	57	77
33 x 11	27	29	32	34	37	42	31	36	38	43	46	52	-	-	-	-	-	-	-	-
33 x 22	19	21	24	26	28	34	23	27	30	35	38	43	-	-	-	-	-	-	-	-
33 x 55	14	16	19	21	24	29	19	23	25	30	33	39	-	-	-	-	-	-	-	-
33 x 66	14	16	18	21	23	29	18	22	25	29	32	38	29	32	43	57	36	42	57	72
33 x 100	13	15	18	20	22	28	17	21	24	28	31	37	28	31	42	56	35	41	56	70
22 x 22	24 C	27 C	31 C	34 C	37 C	46 C	30 C	36 C	40 C	47 C	51 C	60 C	-	-	-	-	-	-	-	-
22 x 33	21	24	28	31	35	43	27	33	38	44	48	57	45	50	66	85	55	64	85	105
22 x 44	20	23	27	31	33	42	26	32	36	43	47	56	-	-	-	-	-	-	-	-
22 x 55	19	22	26	30	32	41	25	31	35	42	46	55	-	-	-	-	-	-	-	-
22 x 66	18	21	25	29	31	40	24	30	34	41	45	54	45	50	62	81	55	64	81	101
22 x 100	17	21	25	28	31	39	24	30	34	40	45	53	40	45	61	80	54	63	80	100
44 x 11	25	27	29	31	33	37	28	31	34	37	39	44	-	-	-	-	-	-	-	-
44 x 22	17	19	21	22	24	29	20	23	25	29	31	36	-	-	-	-	-	-	-	-
44 x 33	14	16	18	20	22	26	17	21	23	26	28	33	28	31	40	51	36	39	51	62
44 x 44	13 C	15 C	17 C	19 C	20 C	25 C	16 C	19 C	21 C	25 C	27 C	32 C	-	-	-	-	-	-	-	-
44 x 55	12	14	16	18	19	24	15	18	20	24	26	31	-	-	-	-	-	-	-	-
44 x 66	11	13	15	17	19	23	14	18	19	23	26	30	23	27	36	46	32	35	47	57
44 x 100	11	12	14	16	18	22	14	17	18	22	25	29	22	26	35	45	31	34	46	56
55 x 22	16	17	19	20	22	26	18	21	23	26	28	32	-	-	-	-	-	-	-	-
55 x 33	13	14	16	18	19	23	16	18	20	23	25	29	24	26	33	43	29	33	43	52
55 x 44	12	13	15	16	18	22	14	17	19	22	24	28	-	-	-	-	-	-	-	-
55 x 55	11	12	14	16	17	21	14	16	18	21	23	27	-	-	-	-	-	-	-	-

Meshes Distance between bar centers	Bearing bar height and thickness Grating weight /m ²																			
	20 x 2	25 x 2	30 x 2	35 x 2	40 x 2	50 x 2	20 x 3	25 x 3	30 x 3	35 x 3	40 x 3	50 x 3	25 x 4	30 x 4	40 x 4	50 x 4	25 x 5	30 x 5	40 x 5	50 x 5
	55 x 100	10	11	13	14	16	20	12	15	17	19	21	25	19	21	28	38	24	28	38
66 x 22	14	16	17	18	20	23	16	18	20	22	24	27	-	-	-	-	-	-	-	-
66 x 33	12	13	14	16	17	20	14	16	18	20	22	25	21	23	28	36	25	29	36	44
66 x 44	10	12	13	15	16	19	13	15	17	19	21	24	-	-	-	-	-	-	-	-
66 x 55	10	11	12	14	15	18	12	14	16	18	20	23	-	-	-	-	-	-	-	-
66 x 66	9	10	12	13	14	17	11	13	15	17	19	22	17	19	24	33	21	25	33	43
66 x 100	8	9	11	12	13	16	10	12	14	16	18	21	16	18	23	32	20	24	32	42

Standard program: The grating types shown in yellow are part of our standard program.

Our line of tailor-made grates. For minimum ordering quantities and delivery times please consult our Technical Service Department.

MATERIAL

Steel ST 37.2

- Hot galvanized acc. to DIN 50976 as well as ISO 1460

Aluminium AlMg3.5

- Pickled
- Anodized

Stainless Steel

AISI 304 (1.4301), 316 (1.4401) and 316 L (1.4404)

- Pickled



The weights of grates made of stainless steel need to be reduced by approx. 7 % galvanizing allowance.

The normal thickness of bearing bars for stainless steel grates is 2 or 3 mm. Bearing bars of 4 or 5 mm thickness are also available. Please contact our Technical Service Department for corresponding information.

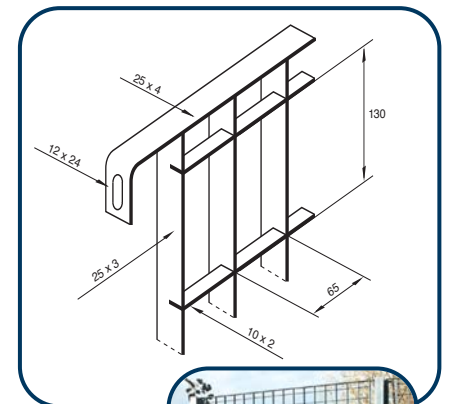
FULL GRATES



Grating types designated by letter "C" may also be produced as full grates. In such a case the bearing bars and transverse bars will have the same height.

- Higher bearing bars for higher loads are also available. Our Technical Service Department will calculate the appropriate grate thickness upon request (heights of up to 150 mm possible).
- Insertion type grates/heavy-duty grates (see page 14) of higher strength material will be capable of accommodating still heavier loads.
- Further information on stainless steel grates is shown on page 10.

SECURITY FENCING ELEMENTS



MIDGRID fencing elements:

- offer a high standard of safety
- are extremely stable
- feature a high torsional rigidity
- are designed for a long service life
- are provided with optimal corrosion protection
- may be given individual paint coatings
- give an aesthetic and attractive appearance

MIDGRID HEAVY-DUTY GRATES FOR EXTREME LOADS

	Passenger cars	Vans	Trucks	Trucks				
Wheel load	450 daN	1000 daN	2000 daN	3000 daN	4000 daN	5000 daN	10000 daN	
Contact area	200 x 200 mm	200 x 200 mm	200 x 200 mm	200 x 260 mm	200 x 300 mm	200 x 400 mm	200 x 600 mm	
Bearing bar spacing	33 22	33 22	33	33	33	33	33	
Span, in mm	Bearing bars		Bearing bars		Bearing bars		Bearing bars	
300	30 x 2 30 x 3	30 x 2 30 x 3	35 x 2 30 x 3	30 x 3 30 x 3	40 x 3	40 x 4	40 x 5	40 x 4 40 x 4
400	30 x 3	30 x 2	35 x 3	40 x 2	40 x 5	50 x 4	50 x 5	50 x 5 60 x 4
500	30 x 3	35 x 2	40 x 3	35 x 3	50 x 4	60 x 4	60 x 5	60 x 5 70 x 5
600	40 x 2 30 x 3	35 x 2	50 x 3 40 x 4	40 x 3	50 x 5	60 x 5 70 x 4	70 x 5	70 x 5 80 x 4
700	40 x 2 35 x 3	40 x 2 35 x 3	50 x 3	40 x 4	60 x 4	70 x 5 80 x 4	80 x 4	80 x 5 90 x 4
800	35 x 3	40 x 2	50 x 4	50 x 3	60 x 5	70 x 5	80 x 5	90 x 5 110 x 5
900	40 x 3	35 x 3	50 x 4	50 x 3	70 x 4	80 x 5	90 x 5	100 x 5 120 x 5
1000	40 x 3	35 x 3	50 x 5	50 x 4	70 x 5	80 x 5	90 x 5	100 x 5 -
1100	50 x 3	40 x 3	50 x 5	50 x 4	70 x 5	90 x 5 100 x 4	100 x 5	110 x 5 -
1200	50 x 3 40 x 4	40 x 3	60 x 4		80 x 4	100 x 4 90 x 5	100 x 5	110 x 5 -
1300	50 x 3 40 x 4	50 x 3	60 x 4	50 x 5	80 x 5	100 x 5	110 x 5	120 x 5 -
1400	50 x 3 40 x 5		60 x 5	50 x 5	80 x 5	100 x 5	110 x 5	120 x 5 -
1500	50 x 3 40 x 5	50 x 3	60 x 5		90 x 4	100 x 5	120 x 5	- -

INSERTION TYPE GRATES

As an alternative to our detailed pressed grating program (with a maximum bearing bar height of 150 mm and 5 mm thickness) we are offering our insertion type grates for extreme loads (see photograph).

These grates are capable of withstanding loads such as those of aeroplanes, dredgers and excavators and caterpillar or tracklaying vehicles.



COEFFICIENT OF OSCILLATION AND VIBRATION

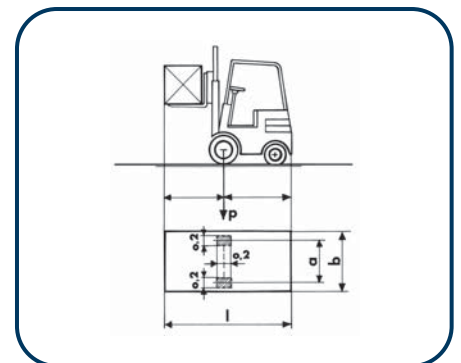
Should the roadway contain sections particular susceptible to local brake loads (e.g. crossings, gratings or the like), the wheel loads of standard vehicle need to be multiplied by 1.3 to obtain the brake loads applied to the individual sections.

Enquiries for passable gratings should contain the following information:

- Wheel pressure
- Contact area
- Span (spacing between supports)

STANDARD FORKLIFT TRUCKS

Permissible gross vehicle weight	Nominal capacity	Static axle load (standard load)	Mean tread	Overall width	Overall length	Uniformly distributed live load (standard load)
daN	daN	P daN	a m	b m	l m	daN
2500	600	2000	0.8	1.0	2.4	1000
3500	1000	3000	0.8	1.0	2.8	1250
7000	2500	6500	1.0	1.2	3.4	1500
13000	5000	12000	1.2	1.5	3.6	2500



MIDGRID SERRATED GRATING: SLIP RESISTANCE EVERYWHERE



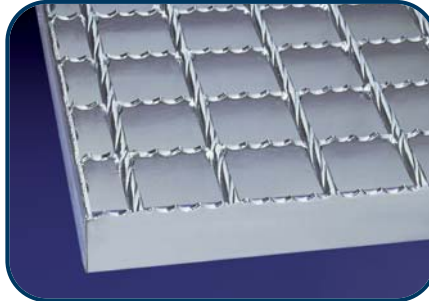
When oil, moisture, icing or similar conditions render walking on platforms or catwalks difficult, MIDGRID Serrated Grates offer better nonskidding properties.

MIDGRID SERRATED TRAPEZOID

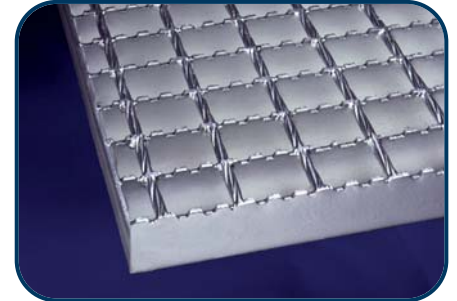
With the Serrated Trapezoid Grates (Type S3) we are introducing a new generation of non-slip pressure welded grating. A manufacturing process developed by ourselves permits the transverse bars to be welded in position clearly below bearing bar level. As compared with other pressure welded grates, your feet will be in optimal contact with the non-skidding surface in case of the MIDGRID Serrated Trapezoid Grating (see illustration on the right). MIDGRID Serrated Trapezoid Grates are extremely safe, since sharp notches and recesses have been avoided. The blunt recesses guarantee both good nonskidding properties and a high passive safety to prevent injuries in case of falling. A safety plus that will convince you in practice immediately.

SP SERRATED GRATES AND TREADS

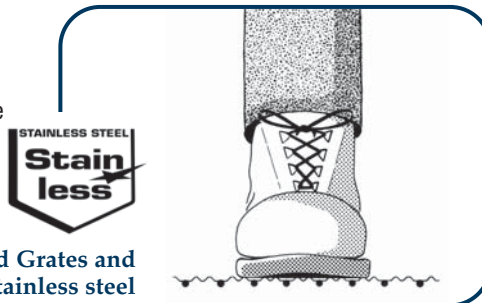
Type SP/S4: Serrated standard



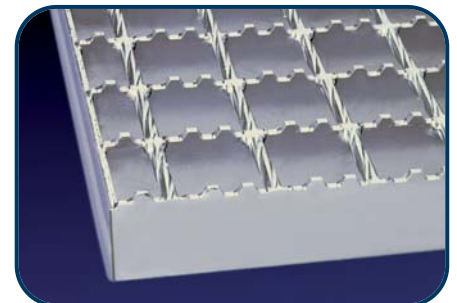
Type SP/S5: Serrated interrupted



MIDGRID Serrated Trapezoid



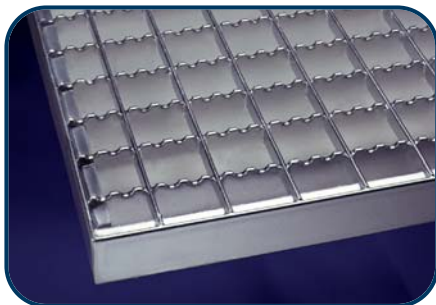
Type SP/S6: Serrated Trapezoid



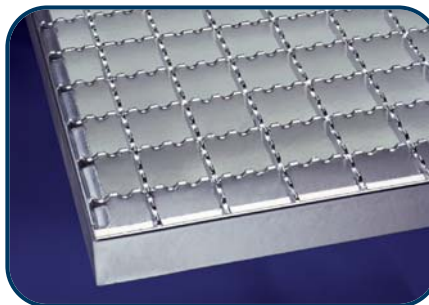
MIDGRID SP and PR Serrated Grates and Treads also available in stainless steel

PR SERRATED GRATES AND TREADS

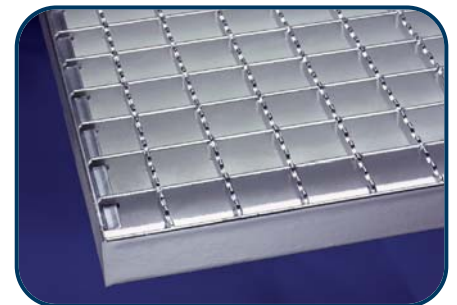
Type PR/S1: Bearing bar serrated



Type PR/S2: Bearing and transverse bars serrated



Type PR/S3: Transverse bars serrated



Notches and recesses as well as specifications other than shown herein, upon request.

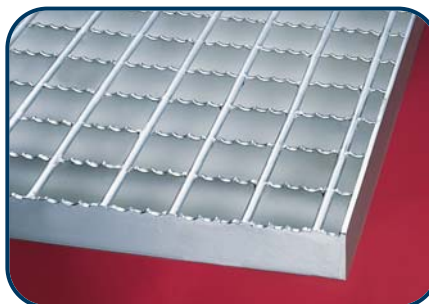
STAINLESS STEEL GRATES

Optimal surface properties.

MIDGRID stainless steel grates do not require any additional corrosion protection. The chromium contents of at least 10.5 % in stainless steel form a colourless and transparent oxide layer on the surface. This protective layer is highly corrosion-resistant.



Type S1 (SP/S1 3032):
Stainless Steel Grating SP
3032 Serrated



Preferred material grades for stainless steel grates

Material no.	International designation	Short designation
1.4301	Inox 304	x 5 CrNi 18 10
1.4401	Inox 316	x 5 CrNiMo 17 12 2

Other stainless steel grades are available upon request.

midgrid

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MIDGRID EUROPEAN QUALITY

