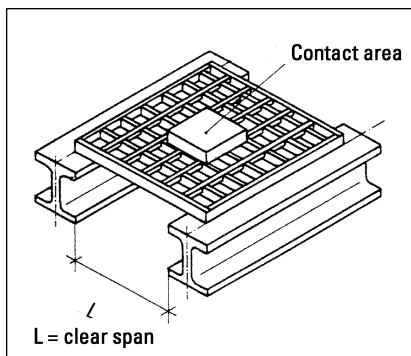
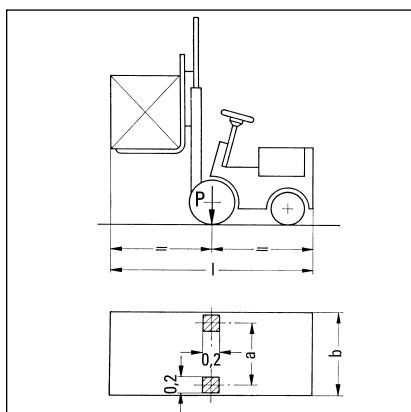
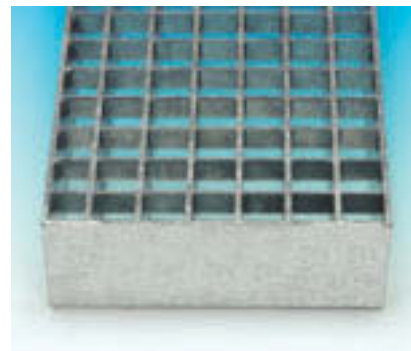


SP P Heavy-Duty Gratings

Heavy-duty gratings with appropriate sizes correctly determined, are suitable for wheel loading and other heavy-duty loads. Specific details of various loading and load areas can be obtained from the relevant DIN instructions.

Load table page 30
for material S235JR \triangle St 37-2
Load table page 31
for material S355J2G3 \triangle St 52-3
(only pressure-locked gratings)



Extract from DIN 1055-5/A1

Fork lift - standard vehicles

Allowable total weight	Nominal load capacity	Static axial load (standard load) P	Central trace width a	Total width b	Total length l	Uniformly distributed traffic load (standard load)
kN	kN	kN	m	m	m	kN/m ²
25	6	20	0,8	1,0	2,4	10
35	10	30	0,8	1,0	2,8	12,5
70	25	65	1,0	1,2	3,4	15
130	50	120	1,2	1,5	3,6	25

Extract from DIN 1072

Oscillation value	Bridge class*	Wheel load	Load area ⁺
If traffic lane contains construction parts that are particularly susceptible to localised brake loading (e.g. parts of traffic lane crossings, gratings, etc.), wheel loads should be multiplied by 1,4 to determine brake loading occurring on single parts.	60	100 kN	200 x 600 mm
	45	75 kN	200 x 500 mm
	30	50 kN	200 x 400 mm
	24	40 kN	200 x 300 mm
	16	50 kN	200 x 400 mm
	12	40 kN	200 x 300 mm
	9	30 kN	200 x 260 mm
	6	20 kN	200 x 200 mm
	3	10 kN	200 x 200 mm

* Bridge class = total weight of the vehicle

+ Load area = Load contact area

Lichtgitter load table for wheel loads

How to use Lichtgitter load table for wheel loads (see pages 30 & 31)

Table for forge-welded gratings with bearing bar pitch of 34,33 mm and pressure-locked gratings with bearing bar pitch of 33,33 mm are shown in standard types, however, pressure-locked gratings with bearing bar thickness of 8 mm or 10 mm are also available upon request.

Material stress (permissible stress) 16 kN/cm² (Material S235JR \triangle St 37-2)

Material stress (permissible stress) 24 kN/cm² (Material S355J2G3 \triangle St 52-3)

Safety factor to yield point is 1,50.

Safety factor to breaking limit is 2,05.

Maximum deflection not more than 1/200 of span.

Table shows clear span.

Example:

Wheel load

50/70

Wheel load including oscillation value φ 1,4

Span at 50 kN wheel load

480/400

Span at 70 kN wheel load

Start at 50 kN, then consider a span of say 480 mm, at the load contact area specified of 200 x 400 mm.

The bearing bar dimensions of 60 x 5 mm are indicated in the column on the left hand side.

According to DIN, certain wheel loads are coordinated to specific load contact areas (see 'Extract from DIN 1072'). The resulting maximum recommended spans shown for specific bearing bar dimensions, are marked by a surrounding red line.

SP**P****Loadtable Material S 235 JR \approx St 37-2**

bearing bar dimension	approx. gal. weight kg/m ²	contact area in mm	Wheel load in kN					contact area in mm	Wheel load in kN			
			4,50/6,30	7,50/10,50	10/14	20/28	30/42		40/56	50/70	75/105	100/140
25 x 2 mm	P = 19,4 SP = 18,7	100 x 100	220/170	150/120				200 x 300				
		150 x 150	280/220	200/160	170/140	120/110		200 x 400				
		200 x 200			210/170	150/130	130/120	200 x 500				
		200 x 260			230/190	160/140	140/130	200 x 600				
25 x 3 mm	P = 25,4 SP = 24,5	100 x 100	300/230	200/160	160/130			200 x 300				
		150 x 150	380/290	260/210	210/170	140/120		200 x 400				
		200 x 200			260/210	180/150	150/130	200 x 500				
		200 x 260			290/240	210/180	180/160	200 x 600				
30 x 2 mm	P = 22,4 SP = 21,5	100 x 100	290/220	190/150	160/130			200 x 300				
		150 x 150	370/280	250/200	210/170	140/120		200 x 400				
		200 x 200			250/210	170/150	150/130	200 x 500				
		200 x 260			280/240	200/180	170/160	200 x 600				
30 x 3 mm	P = 29,5 SP = 28,5	100 x 100	410/300	260/200	210/160			200 x 300	170/150	160/140		
		150 x 150	510/390	340/260	270/210	170/140		200 x 400	190/170	170/150	150/130	
		200 x 200			330/260	210/180	170/150	200 x 500		190/160	160/140	
		200 x 260			360/290	240/210	200/180	200 x 600			170/150	150/130
40 x 2 mm	P = 28,1 SP = 27,2	100 x 100	460/340	300/230	230/180			200 x 300	190/160	170/150		
		150 x 150	580/440	380/290	300/240	190/150		200 x 400	210/180	190/160	160/140	
		200 x 200			370/290	230/190	190/160	200 x 500		210/170	170/150	150/130
		200 x 260			400/320	260/220	210/190	200 x 600			180/160	160/140
40 x 3 mm	P = 37,8 SP = 36,5	100 x 100	660/490	420/310	330/250			200 x 300	230/190	210/170		
		150 x 150	840/620	530/400	420/320	250/200		200 x 400	270/220	230/190	190/160	
		200 x 200			510/390	300/240	230/190	200 x 500		260/210	210/170	180/150
		200 x 260			540/420	330/270	260/220	200 x 600			220/190	190/160
40 x 4 mm	P = 48,7 SP = 47,0	100 x 100	870/640	550/410	420/320			200 x 300	280/240	240/200		
		150 x 150	1100/810	690/510	530/400	300/240		200 x 400	320/260	280/240	220/180	
		200 x 200			650/490	370/290	280/240	200 x 500		320/250	240/200	210/170
		200 x 260			680/520	400/320	310/260	200 x 600			270/220	220/190
40 x 5 mm	P = 62,0 SP = 59,4	100 x 100	1070/780	660/490	510/380			200 x 300	310/260	280/240		
		150 x 150	1350/990	840/620	650/480	360/280		200 x 400	360/310	320/260	250/210	
		200 x 200			790/590	440/340	330/260	200 x 500		370/290	280/230	230/190
		200 x 260			810/620	470/370	350/290	200 x 600			310/250	260/210
50 x 5 mm	P = 82,9 SP = 72,7	100 x 100	1600/1160	980/720	750/550			200 x 300	400/330	350/290		
		150 x 150	2030/1470	1250/910	950/700	510/390		200 x 400	450/370	400/340	330/260	
		200 x 200			1150/850	620/470	450/350	200 x 500		440/380	370/300	310/250
		200 x 260			1180/880	650/500	480/370	200 x 600			420/330	340/270
60 x 5 mm	P = 96,6 SP = 86,0	100 x 100	2230/1610	1360/980	1030/750			200 x 300	510/410	440/350		
		150 x 150		1720/1250	1310/960	690/520		200 x 400	560/450	480/400	380/330	
		200 x 200			1590/1170	840/630	590/450	200 x 500		530/440	430/370	380/310
		200 x 260				870/700	620/480	200 x 600			470/420	420/350
70 x 5 mm	P = 110,3 SP = 99,3	100 x 100		1770/1280	1340/970			200 x 300	640/500	540/430		
		150 x 150			1720/1250	1310/960	900/660	200 x 400	680/540	580/470	450/380	
		200 x 200			2090/1520	1090/810	760/570	200 x 500		630/520	500/420	430/370
		200 x 260			2120/1550	1120/840	790/600	200 x 600			540/470	470/420
80 x 5 mm	P = 124,0 SP = 112,5	100 x 100			1690/1220			200 x 300	780/600	650/510		
		150 x 150			2170/1570	1120/820		200 x 400	820/640	700/550	530/430	
		200 x 200				1370/1010	950/700	200 x 500		740/600	570/470	490/410
		200 x 260				1400/1040	980/730	200 x 600			620/520	530/460
90 x 5 mm	P = 137,7	100 x 100						200 x 300	930/710	780/590		
		150 x 150				1370/1000		200 x 400	980/750	820/640	610/490	
		200 x 200				1680/1230	1150/850	200 x 500		870/680	650/530	550/460
		200 x 260				1710/1260	1180/880	200 x 600			700/580	590/500
100 x 5 mm	P = 151,4	100 x 100						200 x 300	1100/830	910/690		
		150 x 150				1630/1190		200 x 400	1150/870	950/730	700/550	
		200 x 200				2020/1470	1380/1010	200 x 500		1000/780	740/600	610/500
		200 x 260				2040/1490	1400/1040	200 x 600			790/640	660/550
110 x 5 mm	P = 165,1	100 x 100						200 x 300	1290/960	1060/800		
		150 x 150				1940/1400		200 x 400		1110/840	800/620	
		200 x 200				2400/1740	1630/1190	200 x 500		1150/890	840/670	690/560
		200 x 260				2420/1760	1660/1220	200 x 600			890/710	740/600
120 x 5 mm	P = 178,8	100 x 100						200 x 300	1490/1110	1220/910		
		150 x 150						200 x 400	1540/1150	1270/960	910/700	730/570
		200 x 200					1900/1390	200 x 500		1310/1010	950/750	770/620
		200 x 260					1930/1410	200 x 600			1000/790	820/660

1 kN = 1000 N = ca. 100 kg

bearing bar dimension	approx. gal. weight kg/m ²	contact area in mm	Wheel load in kN					contact area in mm	Wheel load in kN			
			4,50/6,30	7,50/10,50	10/14	20/28	30/42		40/56	50/70	75/105	100/140
25 x 2 mm	P = 19,4	100 x 100	300/220	200/150				200 x 300				
		150 x 150	325/250	225/180	185/155	130/115		200 x 400				
		200 x 200			265/215	180/155	155/135	200 x 500				
		200 x 260			295/245	210/185	185/165	200 x 600				
25 x 3 mm	P = 25,4	100 x 100	425/315	275/210	215/170			200 x 300				
		150 x 150	540/405	350/270	280/220	175/145		200 x 400				
		200 x 200			350/275	225/190	180/160	200 x 500				
		200 x 260			380/305	255/220	210/190	200 x 600				
30 x 2 mm	P = 22,4	100 x 100	405/300	260/200	210/160			200 x 300				
		150 x 150	515/390	340/260	270/215	170/145		200 x 400				
		200 x 200			335/270	215/180	180/155	200 x 500				
		200 x 260			365/300	245/210	210/185	200 x 600				
30 x 3 mm	P = 29,5	100 x 100	580/430	370/275	290/220			200 x 300	230/190	205/175		
		150 x 150	735/545	470/360	370/285	220/180		200 x 400	260/215	230/190	185/160	
		200 x 200			455/350	275/225	215/185	200 x 500		240/200	190/165	
		200 x 260			485/380	305/255	245/215	200 x 600			205/175	180/155
40 x 2 mm	P = 28,1	100 x 100	660/485	415/310	325/245			200 x 300	235/195	210/175		
		150 x 150	840/620	535/400	420/320	245/195		200 x 400	270/220	235/195	190/165	
		200 x 200			510/395	305/245	235/195	200 x 500		265/215	210/175	180/160
		200 x 260			540/425	335/275	265/225	200 x 600			230/190	195/170
40 x 3 mm	P = 37,8	100 x 100	995/725	615/455	475/355			200 x 300	305/245	265/215		
		150 x 150	1100/895	765/565	590/445	330/260		200 x 400	360/285	305/245	235/195	
		200 x 200			720/540	410/320	305/245	200 x 500		345/275	265/215	220/185
		200 x 260			750/570	440/350	335/275	200 x 600			290/235	245/200
40 x 4 mm	P = 48,7	100 x 100	1150/920	770/570	600/440			200 x 300	370/290	320/250		
		150 x 150	1250/1150	990/730	760/560	420/310		200 x 400	430/340	370/290	290/220	
		200 x 200			920/690	510/390	370/290	200 x 500		420/330	320/250	260/210
		200 x 260			950/720	540/420	400/320	200 x 600			350/280	290/230
40 x 5 mm	P = 62,0	100 x 100	1250/1140	970/700	740/540			200 x 300	440/340	370/290		
		150 x 150	1400/1200	1100/890	900/690	500/380		200 x 400	510/400	430/340	320/260	
		200 x 200			1050/840	600/470	430/340	200 x 500		490/390	370/290	300/240
		200 x 260			1050/870	640/500	460/370	200 x 600			410/320	340/270
50 x 5 mm	P = 82,9	100 x 100	1750/1450	1300/1000	1100/800			200 x 300	540/430	460/370		
		150 x 150	2000/1650	1600/1250	1300/1000	730/540		200 x 400	590/480	510/420	400/350	
		200 x 200			1450/1220	880/660	620/470	200 x 500		560/470	450/400	410/320
		200 x 260			1450/1250	910/690	650/500	200 x 600			500/450	460/360
60 x 5 mm	P = 96,6	100 x 100	2250/1900	1750/1430	1500/1080			200 x 300	700/540	590/470		
		150 x 150		2000/1700	1650/1400	1000/730		200 x 400	750/590	640/520	490/410	
		200 x 200			1900/1600	1220/900	840/630	200 x 500		690/570	540/460	470/410
		200 x 260				1250/930	870/660	200 x 600			590/510	520/460
70 x 5 mm	P = 110,3	100 x 100		2200/1800	1850/1400			200 x 300	900/680	750/570		
		150 x 150			2150/1830	1300/950		200 x 400	950/730	800/620	590/480	
		200 x 200			2300/1970	1570/1170	1080/810	200 x 500		850/670	640/530	550/460
		200 x 260			2300/1900	1610/1200	1130/840	200 x 600			690/580	600/510
80 x 5 mm	P = 124,0	100 x 100			2250/1800			200 x 300	1100/830	900/690		
		150 x 150			2550/2170	1640/1190		200 x 400	1150/880	950/740	700/560	
		200 x 200				2040/1470	1370/1010	200 x 500		1000/790	750/610	630/520
		200 x 260				2040/1500	1400/1040	200 x 600			800/660	680/570
90 x 5 mm	P = 137,7	100 x 100						200 x 300	1320/1000	1100/830		
		150 x 150				2010/1460		200 x 400	1370/1050	1150/880	830/650	
		200 x 200				2350/1800	1680/1230	200 x 500		1190/930	880/700	720/590
		200 x 260				2350/1830	1710/1260	200 x 600			930/750	770/640
100 x 5 mm	P = 151,4	100 x 100						200 x 300	1570/1170	1280/960		
		150 x 150				2410/1740		200 x 400	1620/1220	1330/1010	960/740	
		200 x 200				2750/2150	2020/1470	200 x 500		1380/1060	1010/790	820/650
		200 x 260				2750/2180	2050/1500	200 x 600			1060/840	870/710
110 x 5 mm	P = 165,1	100 x 100						200 x 300	1870/1370	1770/1310		
		150 x 150				2800/2090		200 x 400	1920/1420	1570/1180	1280/970	
		200 x 200				3150/2580	2420/1750	200 x 500		1870/1410	1170/910	935/710
		200 x 260				3150/2600	2450/1780	200 x 600			1380/1070	980/790
120 x 5 mm	P = 178,8	100 x 100						200 x 300	2150/1600	1750/1300		
		150 x 150						200 x 400	2200/1650	1800/1350	1280/970	1000/780
		200 x 200					2860/2070	200 x 500		1850/1400	1320/1020	1050/840
		200 x 260					2880/2100	200 x 600			1380/1070	1100/880

1 kN = 1000 N = ca. 100 kg