

Load-bearing capacity of pressed gratings > spacing of bearing bars 25 mm

These are the load-bearing capacities for the spacing modules 25 mm and 33.3 mm and for joint loads (Fv) and for pointed loads (Fp) that impact at the least favourable point, that is in the middle of the grating on the area of 200 x 200 mm. The corresponding deflections are stated by values fv and fp measurements.

Basic data

The measurements shown in tables are valid for gratings made of steel of the strength grade S235 (formerly 37) and they are defined for the calculated firmness $R_d = 210$ MPa.

It is necessary to reduce the measured values by multiplying them by the coefficient 0.9 for gratings made of steel 1.4301. The weight of gratings themselves is not taken into consideration in the calculations of load-bearing capacity, therefore it is necessary to include it in the overall load.

Bearing strip h x t (in mm)	Monitored value	Distance of supports IN (in mm)						
		200	300	400	500	600	700	800
30 x 2	Fv	350,00	155,56	87,50	56,00	38,89	28,57	21,88
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						24,49	16,41
	Fp	17,50	8,75	5,83	4,38	3,50	2,92	2,50
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						2,78	2,11
30 x 3	Fv	525,00	233,33	131,25	84,00	58,33	42,86	32,81
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						36,73	24,61
	Fp	26,25	13,13	8,75	6,56	5,25	4,38	3,75
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						4,18	3,17
40 x 2	Fv	686,00	304,89	171,50	109,76	76,22	56,00	42,88
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	34,30	17,15	11,43	8,58	6,86	5,72	4,90
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
40 x 3	Fv	1029,00	457,33	257,25	106,64	114,33	84,00	64,31
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	51,45	25,73	17,15	12,86	10,29	8,58	7,35
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
Bearing strip h x t (in mm)	Monitored value	Distance of supports IN (in mm)						
		900	1000	1100	1200	1300	1400	1500
30 x 2	Fv	17,28	14,00	11,57	9,72	8,28	7,14	6,22
	fv	6,80	8,30	10,10	12,00	14,10	16,30	18,80
	Fv'	11,52	8,40	6,31	4,86	3,82	3,06	2,49
	Fp	2,19	1,94	1,75	1,59	1,46	1,35	1,25
	fp	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	Fp'	1,66	1,34	1,10	0,92	0,79	0,68	0,59
30 x 3	Fv	25,93	21,00	17,36	14,58	12,43	10,71	9,33
	fv	6,80	8,30	10,10	12,00	14,10	16,30	18,80
	Fv'	17,28	12,60	9,47	7,29	5,74	4,59	3,73
	Fp	3,28	2,92	2,63	2,39	2,19	2,02	1,88
	fp	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	Fp'	2,49	2,01	1,65	1,39	1,18	1,01	0,88
40 x 2	Fv	33,88	27,44	22,68	19,06	16,24	14,00	12,20
	fv	4,80	6,00	7,20	8,60	10,10	11,70	13,40
	Fv'	31,62	23,05	17,32	13,34	10,49	8,40	6,83
	Fp	4,29	3,81	3,43	3,12	2,86	2,64	2,45
	fp	4,20	5,20	6,20	7,40	8,60	10,00	11,40
	Fp'		3,67	3,02	2,53	2,16	1,86	1,61
40 x 3	Fv	50,81	41,16	34,02	28,58	24,36	21,00	18,29
	fv	4,80	6,00	7,20	8,60	10,10	11,70	13,40
	Fv'	47,33	34,57	25,98	20,01	15,74	12,60	10,24
	Fp	6,43	5,72	5,15	4,68	4,29	3,96	3,68
	fp	4,20	5,20	6,20	7,40	8,60	10,00	11,40
	Fp'		5,51	4,54	3,80	3,23	2,78	2,42

Load-bearing capacity of pressed gratings > spacing of bearing bars 33 mm

Load-bearing capacities of pressed gratings are practically identical to load-bearing capacities of welded gratings with the bearing bars' spacing of 34 mm.

Bearing strip h x t (in mm)	Monitored value	Distance of supports IN (in mm)						
		200	300	400	500	600	700	800
30 x 2	Fv	262,53	116,68	65,63	42,00	29,17	21,43	16,41
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						18,37	12,31
	Fp	15,75	7,88	5,25	3,94	3,15	2,63	2,25
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						2,51	1,90
30 x 3	Fv	393,79	175,02	98,45	63,01	43,75	32,15	24,61
	fv	0,30	0,80	1,30	2,10	3,00	4,10	5,30
	Fv'						27,55	18,46
	Fp	26,63	11,81	7,88	5,91	4,73	3,94	3,38
	fp	0,30	0,70	1,30	1,90	2,70	3,70	4,70
	Fp'						3,76	2,85
40 x 2	Fv	514,55	228,69	128,64	82,33	57,17	42,00	32,16
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	30,87	15,44	10,29	7,72	6,17	5,15	4,41
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
40 x 3	Fv	771,83	343,03	192,96	123,49	85,76	63,01	48,24
	fv	0,20	0,50	1,00	1,50	2,10	2,90	3,80
	Fv'							
	Fp	46,31	23,15	15,44	11,58	9,26	7,72	6,62
	fp	0,20	0,50	0,90	1,40	2,00	2,60	3,40
	Fp'							
Bearing strip h x t (in mm)	Monitored value	Distance of supports IN (in mm)						
		900	1000	1100	1200	1300	1400	1500
30 x 2	Fv	12,96	10,50	8,68	7,29	6,21	5,36	4,67
	fv	6,80	8,30	10,10	12,00	14,10	16,3	18,80
	Fv'	8,64	6,30	4,73	3,65	2,87	2,30	1,87
	Fp	1,97	1,75	1,58	1,43	1,31	1,21	1,13
	fp	5,90	7,30	8,70	10,30	12,10	13,90	15,90
	Fp'	1,49	1,20	0,99	0,83	0,71	0,61	0,53
30 x 3	Fv	19,45	15,75	13,02	10,94	9,32	8,04	7,00
	fv	6,80	8,30	10,10	12,00	14,1	16,30	18,80
	Fv'	12,96	9,45	7,10	5,47	4,30	3,44	2,80
	Fp	2,95	2,63	2,36	2,15	1,97	1,82	1,69
	fp	5,90	7,30	8,70	10,30	12,1	13,90	15,90
	Fp'	2,24	1,81	1,49	1,25	1,06	0,91	0,79
40 x 2	Fv	25,41	20,58	17,01	14,29	12,18	10,50	9,15
	fv	4,80	6,00	7,20	8,60	10,1	11,70	13,40
	Fv'	23,72	17,29	12,99	10,01	7,87	6,30	5,12
	Fp	3,86	3,43	3,09	2,81	2,57	2,37	2,21
	fp	4,20	5,20	6,20	7,40	8,6	10,00	11,40
	Fp'		3,30	2,72	2,28	1,94	1,67	1,45
40 x 3	Fv	38,11	30,87	25,51	21,44	18,27	15,75	13,72
	fv	4,80	6,00	7,20	8,60	10,1	11,70	13,40
	Fv'	35,57	25,93	19,48	15,01	11,80	9,45	7,68
	Fp	5,79	5,15	4,63	4,21	3,86	3,56	3,31
	fp	4,20	5,20	6,20	7,40	8,6	10,00	11,40
	Fp'		4,96	4,08	3,42	2,91	2,51	2,18

Uncoloured area marks gratings suitable for walking purposes with 1.5 kN. Deflection „f“ of the size 1/200 of inner distance of supports, but up to max. of 0.4 cm, is not exceeded.

Coloured area marks gratings which are not suitable for walking purposes.

Fv	permitted uniform load	[kN/m2]*
fv	deflection by load Fv	[in mm]*
Fv'	permitted uniform load at deflection $f_{dov} = l_n/200$	[kN/m²]**
Fp	permitted load in the middle of the grating (load on the area of 200 x 200 mm)	[kN]*
fp	deflection caused by load Fp	[in mm]*
Fp'	permitted load in the middle of the grating at deflection $f_{dov} = l_n/200$	[kN]**