

# Load table for ProMetall Press-locked gratings made of high-solid steel, mesh width 31/31mm (corresponds to 31/9 mm).

Supporting bar	Load	Span in mm																	
		300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000
20 ∞ 2	Fv	7,680.77	4,320.43	2,765.08	1,920.19	1,410.75	1,080.11	853.42	691.27	571.30	480.05	409.03	352.69	307.23	270.03	239.19	213.35	191.49	172.82
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71	2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76
	Fp	537.44	358.30	268.72	214.98	179.15	153.56	134.36	119.43	107.49	97.72	89.57	82.68	76.78	71.66	67.18	63.23	59.72	56.57
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48	1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99
25 ∞ 2	Fv	12,001.20	6,750.68	4,320.43	3,000.30	2,204.30	1,687.67	1,333.47	1,080.11	892.65	750.08	639.12	551.08	480.05	421.92	373.74	333.37	299.20	270.03
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37	1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81
	Fp	832.55	555.04	416.28	333.02	277.52	237.87	208.14	185.01	166.51	151.37	138.76	128.09	118.94	111.01	104.07	97.95	92.51	87.64
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18	1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19
30 ∞ 2	Fv	17,281.73	9,720.97	6,221.42	4,320.43	3,174.19	2,430.24	1,920.19	1,555.36	1,285.42	1,080.11	920.33	793.55	691.27	607.56	538.19	480.05	430.85	388.84
	f	0.07	0.13	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	3.18
	Fp	1,188.51	792.34	594.25	475.40	396.17	339.57	297.13	264.11	237.70	216.09	198.08	182.85	169.79	158.47	148.56	139.82	132.06	125.11
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98	1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66
35 ∞ 2	Fv	23,522.35	13,231.32	8,468.05	5,880.59	4,320.43	3,307.83	2,613.59	2,117.01	1,749.60	1,470.15	1,252.67	1,080.11	940.89	826.96	732.53	653.40	586.43	529.25
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98	1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72
	Fp	1,601.82	1,067.88	800.91	640.73	533.94	457.66	400.45	355.96	320.36	291.24	266.97	246.43	228.83	213.58	200.23	188.45	177.98	168.61
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84	0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.28
40 ∞ 2	Fv	30,723.07	17,281.73	11,060.31	7,680.77	5,643.01	4,320.43	3,413.67	2,765.08	2,285.19	1,920.19	1,636.14	1,410.75	1,228.92	1,080.11	956.77	853.42	765.95	691.27
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86	1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38
	Fp	2,073.74	1,382.49	1,036.87	829.50	691.25	592.50	518.43	460.83	414.75	377.04	345.62	319.04	296.25	276.50	259.22	243.97	230.42	218.29
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74	0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00
50 ∞ 2	Fv	48,004.80	27,002.70	17,281.73	12,001.20	8,817.21	6,750.68	5,333.87	4,320.43	3,570.60	3,000.30	2,556.47	2,204.30	1,920.19	1,687.67	1,494.96	1,333.47	1,196.80	1,080.11
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69	0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91
	Fp	3,179.02	2,119.34	1,589.51	1,271.61	1,059.67	908.29	794.75	706.45	635.80	578.00	529.84	489.08	454.15	423.87	397.38	374.00	353.22	334.63
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59	0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60
20 ∞ 3	Fv	11,521.15	6,480.65	4,147.61	2,880.29	2,116.13	1,620.16	1,280.13	1,036.90	856.95	720.07	613.55	529.03	460.85	405.04	358.79	320.03	287.23	259.23
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71	2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76
	Fp	806.16	537.44	403.08	322.47	268.72	230.33	201.54	179.15	161.23	146.58	134.36	124.03	115.17	107.49	100.77	94.84	89.57	84.86
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48	1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99
25 ∞ 3	Fv	18,001.80	10,126.01	6,480.65	4,500.45	3,306.45	2,531.50	2,000.20	1,620.16	1,338.98	1,125.11	958.68	826.61	720.07	632.88	560.61	500.05	448.80	405.04
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37	1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81
	Fp	1,248.83	832.55	624.42	499.53	416.28	356.81	312.21	277.52	249.77	227.06	208.14	192.13	178.40	166.51	156.10	146.92	138.76	131.46
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18	1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19
30 ∞ 3	Fv	25,922.59	14,581.46	9,332.13	6,480.65	4,761.29	3,645.36	2,880.29	2,333.03	1,928.13	1,620.16	1,380.49	1,190.32	1,036.90	911.34	807.28	720.07	646.27	583.26
	f	0.07	0.13	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	3.18
	Fp	1,782.76	1,188.51	891.38	713.11	594.25	509.36	445.69	396.17	356.55	324.14	297.13	274.27	254.68	237.70	222.85	209.74	198.08	187.66
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98	1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66
35 ∞ 3	Fv	35,283.53	19,846.98	12,702.07	8,820.88	6,480.65	4,961.75	3,920.39	3,175.52	2,624.39	2,205.22	1,879.00	1,620.16	1,411.34	1,240.44	1,098.80	980.10	879.64	793.88
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98	1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72
	Fp	2,402.73	1,601.82	1,201.36	961.09	800.91	686.49	600.68	533.94	480.55	436.86	400.45	369.65	343.25	320.36	300.34	282.67	266.97	252.92
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84	0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.28
40 ∞ 3	Fv	46,084.61	25,922.59	16,590.46	11,521.15	8,464.52	6,480.65	5,120.51	4,147.61	3,427.78	2,880.29	2,454.21	2,116.13	1,843.38	1,620.16	1,435.16	1,280.13	1,148.92	1,036.90
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86	1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38
	Fp	3,110.61	2,073.74	1,555.30	1,244.24	1,036.87	888.74	777.65	691.25	622.12	565.56	518.43	478.55	444.37	414.75	388.83	365.95	345.62	327.43
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74	0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00
50 ∞ 3	Fv	72,007.20	40,504.05	25,922.59	18,001.80	13,225.81	10,126.01	8,000.80	6,480.65	5,355.91	4,500.45	3,834.70	3,306.45	2,880.29	2,531.50	2,242.44	2,000.20	1,795.19	1,620.16
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69	0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91
	Fp	4,768.52	3,179.02	2,384.26	1,907.41	1,589.51	1,362.44	1,192.13	1,059.67	953.70	867.00	794.75	733.62	681.22	635.80	596.07	561.00	529.84	501.95
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59	0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60
60 ∞ 3	Fv	103,690.37	58,325.83	37,328.53	25,922.59	19,045.17	14,581.46	11,521.15	9,332.13	7,712.51	6,480.65	5,521.97	4,761.29	4,147.61	3,645.36	3,229.11	2,880.29	2,585.08	2,333.03
	f	0.04	0.06	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
	Fp	6,742.26	4,494.84	3,371.13	2,696.90	2,247.42	1,926.36	1,685.56	1,498.28	1,348.45	1,225.87	1,123.71	1,037.27	963.18	898.97	842.78	793.21	749.14	709.71
	f1	0.04	0.06	0.09	0.13	0.18	0.23	0.28	0.35	0.42	0.49	0.58	0.66	0.76	0.86	0.97	1.08	1.20	1.33

Fv = load values for distributed load capacity in daN/m<sup>2</sup> f = deflection in cm at load Fv Fp = stress levels for concentrated load on 200 x 200 mm f1 = deflection in cm at load Fp

### Accessibility.

For perfect accessibility, this area must not be exceeded. At loaded condition the deflection is 4 mm at a concentrated load of 150 daN with a load charge area of 200 x 200 mm.

At this limit, ProMetall gratings are able to absorb a migrating concentrated load of 150 daN with a load engaging surface of 200 x 200 mm at the most vulnerable part, whereby the maximum deflection of 1/200 of the span is not exceeded (see Arbeitsgemeinschaft Industriebau e. V.).

At a distributed load capacity of 500 daN/m<sup>2</sup>, this area has a max. deflection of 4 mm<sup>2</sup>.

The max. deflection of 1/200 of the span is not exceeded by this limit at a distributed load capacity of 500 daN/m<sup>2</sup>.

### Material stress.

Permissible stress: 240 N/mm<sup>2</sup>  
 Safety factor to yield point: 1.5  
 Safety factor to breaking point: 2.1

Slip-resistant designs where the supporting bar is profiled, show a decreased load capacity due to the punch-outs.

### Reduced load capacities in %.

Slip-resistant gratings

Grating height	Reduction of the load capacities in %
20	15
25	12
30	10
35	8.6
40	7.5
50	6
60	5

# Load table for ProMetall-Press-locked gratings made of high-solid steel, mesh width 20/20 mm.

Supporting bar	Load	Span in mm										Span in mm									
		300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000		
20 ∞ 2	Fv	11,521.15	6,480.65	4,147.61	2,880.29	2,116.13	1,620.16	1,280.13	1,036.90	856.95	720.07			613.55	529.03	460.85	405.04	358.79	320.03	287.23	259.23
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71			2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76
	Fp	710.26	473.51	355.13	284.10	236.75	202.93	177.56	157.84	142.05	129.14			118.38	109.27	101.47	94.70	88.78	83.56	78.92	74.76
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48			1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99
25 ∞ 2	Fv	18,001.80	10,126.01	6,480.65	4,500.45	3,306.45	2,531.50	2,000.20	1,620.16	1,338.98	1,125.11			958.68	826.61	720.07	632.88	560.61	500.05	448.80	405.04
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37			1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81
	Fp	1,102.58	735.05	551.29	441.03	367.53	315.02	275.65	245.02	220.52	200.47			183.76	169.63	157.51	147.01	137.82	129.72	122.51	116.06
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18			1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19
30 ∞ 2	Fv	25,922.59	14,581.46	9,332.13	6,480.65	4,761.29	3,645.36	2,880.29	2,333.03	1,928.13	1,620.16			1,380.49	1,190.32	1,036.90	911.34	807.28	720.07	646.27	583.26
	f	0.07	0.13	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	3.18
	Fp	1,577.35	1,051.57	788.67	630.94	525.78	450.67	394.34	350.52	315.47	286.79			262.89	242.67	225.34	210.31	197.17	185.57	175.26	166.04
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98			1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66
35 ∞ 2	Fv	35,283.53	19,846.98	12,702.07	8,820.88	6,480.65	4,961.75	3,920.39	3,175.52	2,624.39	2,205.22			1,879.00	1,620.16	1,411.34	1,240.44	1,098.80	980.10	879.64	793.88
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98			1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72
	Fp	2,131.07	1,420.71	1,065.54	852.43	710.36	608.88	532.77	473.57	426.21	387.47			355.18	327.86	304.44	284.14	266.38	250.71	236.79	224.32
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84			0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.22
40 ∞ 2	Fv	46,084.61	25,922.59	16,590.46	11,521.15	8,464.52	6,480.65	5,120.51	4,147.61	3,427.78	2,880.29			2,454.21	2,116.13	1,843.38	1,620.16	1,435.16	1,280.13	1,148.92	1,036.90
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86			1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38
	Fp	2,765.01	1,843.34	1,382.50	1,106.00	921.67	790.00	691.25	614.45	553.00	502.73			460.83	425.39	395.00	368.67	345.63	325.29	307.22	291.05
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74			0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00
50 ∞ 2	Fv	72,007.20	40,504.05	25,922.59	18,001.80	13,225.81	10,126.01	8,000.80	6,480.65	5,355.91	4,500.45			3,834.70	3,306.45	2,880.29	2,531.50	2,242.44	2,000.20	1,795.19	1,620.16
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69			0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91
	Fp	4,259.12	2,839.42	2,129.56	1,703.65	1,419.71	1,216.89	1,064.78	946.47	851.82	774.39			709.85	655.25	608.45	567.88	532.39	501.07	473.24	448.33
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59			0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60
20 ∞ 3	Fv	17,281.73	9,720.97	6,221.42	4,320.43	3,174.19	2,430.24	1,920.19	1,555.36	1,285.42	1,080.11			920.33	793.55	691.27	607.56	538.19	480.05	430.85	388.84
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71			2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76
	Fp	1,065.39	710.26	532.69	426.16	355.13	304.40	266.35	236.75	213.08	193.71			177.56	163.91	152.20	142.05	133.17	125.34	118.38	112.15
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48			1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99
25 ∞ 3	Fv	27,002.70	15,189.02	9,720.97	6,750.68	4,959.68	3,797.25	3,000.30	2,430.24	2,008.47	1,687.67			1,438.01	1,239.92	1,080.11	949.31	840.91	750.08	673.20	607.56
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37			1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81
	Fp	1,653.87	1,102.58	826.94	661.55	551.29	472.53	413.47	367.53	330.77	300.70			275.65	254.44	236.27	220.52	206.73	194.57	183.76	174.09
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18			1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19
30 ∞ 3	Fv	38,883.89	21,872.19	13,998.20	9,720.97	7,141.94	5,468.05	4,320.43	3,499.55	2,892.19	2,430.24			2,070.74	1,785.48	1,555.36	1,367.01	1,210.92	1,080.11	969.40	874.89
	f	0.07	0.13	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	3.18
	Fp	2,366.02	1,577.35	1,183.01	946.41	788.67	676.01	591.51	525.78	473.20	430.19			394.34	364.00	338.00	315.47	295.75	278.36	262.89	249.06
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98			1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66
35 ∞ 3	Fv	52,925.29	29,770.48	19,053.11	13,231.32	9,720.97	7,442.62	5,880.59	4,763.28	3,936.59	3,307.83			2,818.51	2,430.24	2,117.01	1,860.65	1,648.19	1,470.15	1,319.47	1,190.82
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98			1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72
	Fp	3,196.61	2,131.07	1,598.30	1,278.64	1,065.54	913.32	799.15	710.36	639.32	581.20			532.77	491.79	456.66	426.21	399.58	376.07	355.18	336.48
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84			0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.28
40 ∞ 3	Fv	69,126.91	38,883.89	24,885.69	17,281.73	12,696.78	9,720.97	7,680.77	6,221.42	5,141.67	4,320.43			3,681.31	3,174.19	2,765.08	2,430.24	2,152.74	1,920.19	1,723.39	1,555.36
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86			1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38
	Fp	4,147.51	2,765.01	2,073.76	1,659.00	1,382.50	1,185.00	1,036.88	921.67	829.50	754.09			691.25	638.08	592.50	553.00	518.44	487.94	460.83	436.58
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74			0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00
50 ∞ 3	Fv	108,010.80	60,756.08	38,883.89	27,002.70	19,838.72	15,189.02	12,001.20	9,720.97	8,033.86	6,750.68			5,752.05	4,959.68	4,204.43	3,797.25	3,363.66	3,000.30	2,692.79	2,430.24
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69			0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91
	Fp	6,388.69	4,259.12	3,194.34	2,555.47	2,129.56	1,825.34	1,597.17	1,419.71	1,277.74	1,161.58			1,064.78	982.87	912.67	851.82	798.59	751.61	709.85	672.49
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59			0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60
60 ∞ 3	Fv	155,535.55	87,488.75	55,992.80	38,883.89	28,567.75	21,872.19	17,281.73	13,998.20	11,568.76	9,720.97			8,282.96	7,141.94	6,221.42	5,468.05	4,843.67	4,320.43	3,877.62	3,499.55
	f	0.04	0.06	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
	Fp	9,075.29	6,050.19	4,537.65	3,630.12	3,025.10	2,592.94	2,268.82	2,016.73	1,815.06	1,650.05			1,512.55	1,396.20	1,296.47	1,210.04	1,134.41	1,067.68	1,008.37	955.29
	f1	0.04	0.06	0.09	0.13	0.18	0.23	0.28	0.35	0.42	0.49			0.58	0.66	0.76	0.86	0.97	1.08	1.20	1.33

**Accessibility.**  
For perfect accessibility, this area must not be exceeded. At loaded condition the deflection is 4 mm at a concentrated load of 150 daN with a load charge area of 200 x 200 mm.

At this limit, ProMetall gratings are able to absorb a migrating concentrated load of 150 daN with a load charge area of 200 x 200 mm at the most vulnerable part, whereby the maximum deflection of 1/200 of the span is not exceeded (see Arbeitsgemeinschaft Industriebau e. V.).

At a distributed load capacity of 500 daN/m<sup>2</sup>, this area has a max. deflection of 4 mm<sup>2</sup>.

The max. deflection of 1/200 of the span is not exceeded by this limit at a distributed load capacity of 500 daN/m<sup>2</sup>.

**Material stress.**  
Permissible stress: 240 N/mm<sup>2</sup>  
Safety factor to yield point: 1.5  
Safety factor to breaking point: 2.1

Slip-resistant designs where the supporting bar is profiled, show a decreased load capacity due to the punch-outs.

**Reduced load capacities in %.**  
Slip-resistant gratings

Grating height	Reduction of the load capacities in %
20	15
25	12
30	10
35	8.6
40	7.

# Load table for ProMetall Press-locked gratings made of high-solid steel, mesh width 9/9 mm.

Supporting bar	Load	Span in mm										Span in mm									
		300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000		
20 ∞ 2	Fv	23,042.30	12,961.30	8,295.23	5,760.58	4,232.26	3,240.32	2,560.26	2,073.81	1,713.89	1,440.14		1,227.10	1,058.06	921.69	810.08	717.58	640.06	574.46	518.45	
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71		2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76	
	Fp	1,228.71	819.14	614.36	491.48	409.57	351.06	307.18	273.05	245.74	223.40		204.79	189.03	175.53	163.83	153.59	144.55	136.52	129.34	
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48		1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99	
25 ∞ 2	Fv	36,003.60	20,252.03	12,961.30	9,000.90	6,612.91	5,063.01	4,000.40	3,240.32	2,677.95	2,250.23		1,917.35	1,653.23	1,440.14	1,265.75	1,121.22	1,000.10	897.60	810.08	
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37		1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81	
	Fp	1,912.66	1,275.11	956.33	765.06	637.55	546.47	478.17	425.04	382.53	347.76		318.78	294.26	273.24	255.02	239.08	225.02	212.52	201.33	
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18		1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19	
30 ∞ 2	Fv	51,845.18	29,162.92	18,664.27	12,961.30	9,522.58	7,290.73	5,760.58	4,666.07	3,856.25	3,240.32		2,760.99	2,380.65	2,073.81	1,822.68	1,614.56	1,440.14	1,292.54	1,166.52	
	f	0.07	0.13	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	3.18	
	Fp	2,743.87	1,829.24	1,371.93	1,097.55	914.62	783.96	685.97	609.75	548.77	498.88		457.31	422.13	391.98	365.85	342.98	322.81	304.87	288.83	
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98		1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66	
35 ∞ 2	Fv	70,567.06	39,693.97	25,404.14	17,641.76	12,961.30	9,923.49	7,840.78	6,351.04	5,248.79	4,410.44		3,758.01	3,240.32	2,822.68	2,480.87	2,197.59	1,960.20	1,759.29	1,587.76	
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98		1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72	
	Fp	3,718.83	2,479.22	1,859.41	1,487.53	1,239.61	1,062.52	929.71	826.41	743.77	676.15		619.80	572.13	531.26	495.84	464.85	437.51	413.20	391.46	
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84		0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.28	
40 ∞ 2	Fv	92,169.22	51,845.18	33,180.92	23,042.30	16,929.04	12,961.30	10,241.02	8,295.23	6,855.56	5,760.58		4,908.42	4,232.26	3,686.77	3,240.32	2,870.32	2,560.26	2,297.85	2,073.81	
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86		1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38	
	Fp	4,838.81	3,225.88	2,419.41	1,935.53	1,612.94	1,382.52	1,209.70	1,075.29	967.76	879.78		806.47	744.43	691.26	645.18	604.85	569.27	537.65	509.35	
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74		0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00	
50 ∞ 2	Fv	144,014.40	81,008.10	51,845.18	36,003.60	26,451.62	20,252.03	16,001.60	12,961.30	10,711.81	9,000.90		7,669.41	6,612.91	5,760.58	5,063.01	4,484.88	4,000.40	3,590.39	3,240.32	
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69		0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91	
	Fp	7,499.45	4,999.63	3,749.72	2,999.78	2,499.82	2,142.70	1,874.86	1,666.54	1,499.89	1,363.54		1,249.91	1,153.76	1,071.35	999.93	937.43	882.29	833.27	789.42	
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59		0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60	
20 ∞ 3	Fv	34,563.46	19,441.94	12,442.84	8,640.86	6,348.39	4,860.49	3,840.38	3,110.71	2,570.84	2,160.22		1,840.66	1,587.10	1,382.54	1,215.12	1,076.37	960.10	861.69	777.68	
	f	0.11	0.19	0.30	0.43	0.58	0.76	0.96	1.19	1.44	1.71		2.01	2.33	2.68	3.05	3.44	3.86	4.30	4.76	
	Fp	1,843.07	1,228.71	921.53	737.23	614.36	526.59	460.77	409.57	368.61	335.10		307.18	283.55	263.30	245.74	230.38	216.83	204.79	194.01	
	f1	0.11	0.18	0.28	0.39	0.52	0.68	0.85	1.04	1.25	1.48		1.72	1.99	2.28	2.58	2.91	3.25	3.61	3.99	
25 ∞ 3	Fv	54,005.40	30,378.04	19,441.94	13,501.35	9,919.36	7,594.51	6,000.60	4,860.49	4,016.93	3,375.34		2,876.03	2,479.84	2,160.22	1,898.63	1,681.83	1,500.15	1,346.40	1,215.12	
	f	0.09	0.15	0.24	0.34	0.47	0.61	0.77	0.95	1.15	1.37		1.61	1.87	2.14	2.44	2.75	3.09	3.44	3.81	
	Fp	2,868.99	1,912.66	1,434.50	1,147.60	956.33	819.71	717.25	637.55	573.80	521.64		478.17	441.38	409.86	382.53	358.62	337.53	318.78	302.00	
	f1	0.08	0.15	0.22	0.31	0.42	0.54	0.68	0.83	1.00	1.18		1.38	1.59	1.82	2.07	2.32	2.60	2.89	3.19	
30 ∞ 3	Fv	77,767.78	43,744.37	27,996.40	19,441.94	14,283.88	10,936.09	8,640.86	6,999.10	5,784.38	4,860.49		4,141.48	3,570.97	3,110.71	2,734.02	2,421.83	2,160.22	1,938.81	1,749.77	
	f	0.07	0.13	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	3.18	
	Fp	4,115.80	2,743.87	2,057.90	1,646.32	1,371.93	1,175.94	1,028.95	914.62	823.16	748.33		685.97	633.20	587.97	548.77	514.47	484.21	457.31	433.24	
	f1	0.07	0.12	0.18	0.26	0.35	0.45	0.57	0.69	0.83	0.98		1.15	1.33	1.52	1.72	1.94	2.17	2.41	2.66	
35 ∞ 3	Fv	105,850.59	59,540.95	38,106.21	26,462.65	19,441.94	14,885.24	11,761.18	9,526.55	7,873.18	6,615.66		5,637.01	4,860.49	4,234.02	3,721.31	3,296.39	2,940.29	2,638.93	2,381.64	
	f	0.06	0.11	0.17	0.25	0.33	0.44	0.55	0.68	0.82	0.98		1.15	1.33	1.53	1.74	1.97	2.20	2.46	2.72	
	Fp	5,578.24	3,718.83	2,789.12	2,231.30	1,859.41	1,593.78	1,394.56	1,239.61	1,115.65	1,014.23		929.71	858.19	796.89	743.77	697.28	656.26	619.80	587.18	
	f1	0.06	0.10	0.16	0.22	0.30	0.39	0.48	0.59	0.71	0.84		0.99	1.14	1.30	1.48	1.66	1.86	2.06	2.28	
40 ∞ 3	Fv	138,253.83	77,767.78	49,771.38	34,563.46	25,393.56	19,441.94	15,361.54	12,442.84	10,283.34	8,640.86		7,362.63	6,348.39	5,530.15	4,860.49	4,305.48	3,840.38	3,446.77	3,110.71	
	f	0.05	0.10	0.15	0.21	0.29	0.38	0.48	0.60	0.72	0.86		1.01	1.17	1.34	1.52	1.72	1.93	2.15	2.38	
	Fp	7,258.22	4,838.81	3,629.11	2,903.29	2,419.41	2,073.78	1,814.56	1,612.94	1,451.64	1,319.68		1,209.70	1,116.65	1,036.89	967.76	907.28	853.91	806.47	764.02	
	f1	0.05	0.09	0.14	0.20	0.26	0.34	0.42	0.52	0.62	0.74		0.86	1.00	1.14	1.29	1.45	1.62	1.81	2.00	
50 ∞ 3	Fv	216,021.60	121,512.15	77,767.78	54,005.40	39,677.44	30,378.04	24,002.40	19,441.94	16,067.72	13,501.35		11,504.11	9,919.36	8,640.86	7,594.51	6,727.32	6,000.60	5,385.58	4,860.49	
	f	0.04	0.08	0.12	0.17	0.23	0.31	0.39	0.48	0.58	0.69		0.81	0.93	1.07	1.22	1.38	1.54	1.72	1.91	
	Fp	11,249.17	7,499.45	5,624.59	4,499.67	3,749.72	3,214.05	2,812.29	2,499.82	2,249.83	2,045.30		1,874.86	1,730.64	1,607.02	1,499.89	1,406.15	1,323.43	1,249.91	1,184.12	
	f1	0.04	0.07	0.11	0.16	0.21	0.27	0.34	0.42	0.50	0.59		0.69	0.80	0.91	1.03	1.16	1.30	1.44	1.60	
60 ∞ 3	Fv	311,071.11	174,977.50	111,985.60	77,767.78	57,135.51	43,744.37	34,563.46	27,996.40	23,137.52	19,441.94		16,565.92	14,283.88	12,442.84	10,936.09	9,687.34	8,640.86	7,755.24	6,999.10	
	f	0.04	0.06	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	
	Fp	16,074.39	10,716.26	8,037.20	6,429.76	5,358.13	4,592.68	4,018.60	3,572.09	3,214.88	2,922.62		2,679.07	2,472.98	2,296.34	2,143.25	2,009.30	1,891.10	1,786.04	1,692.04	
	f1	0.04	0.06	0.09	0.13	0.18	0.23	0.28	0.35	0.42	0.49		0.58	0.66	0.76	0.86	0.97	1.08	1.20	1.33	

Fv = load values for distributed load capacity in daN/m<sup>2</sup> f = deflection in cm at load Fv Fp = stress levels for concentrated load on 200 x 200 mm f1 = deflection in cm at load Fp

### Accessibility.

For perfect accessibility, this area must not be exceeded. At loaded condition the deflection is 4 mm at a concentrated load of 150 daN with a load charge area of 200 x 200 mm.

At this limit, ProMetall gratings are able to absorb a migrating concentrated load of 150 daN with a load charge area of 200 x 200 mm at the most vulnerable part, whereby the maximum deflection of 1/200 of the span is not exceeded (see Arbeitsgemeinschaft Industriebau e. V.).

At a distributed load capacity of 500 daN/m, this area has a max. deflection of 4 mm<sup>2</sup>.

The max. deflection of 1/200 of the span is not exceeded by this limit at a distributed load capacity of 500 daN/m<sup>2</sup>.

### Material stress.

Permissible stress: 260 N/mm<sup>2</sup>  
Safety factor to yield point: 1.5  
Safety factor to breaking point: 2.1

Slip-resistant designs where the supporting bar is profiled, show a decreased load capacity due to the punch-outs.

### Reduced load capacities in %.

Slip-resistant gratings

Grating height	Reduction of the load capacities in %
20	15
25	12
30	10
35	8.6
40	7.5
50	6
60	5