



Crane Pad Loading Considerations.

Stabilizer load in kN

Crane class (tm)	Crane class (kNm)	Stabilizer width – centre leg to centre leg (m)								
		2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5
5	50	55	42	32	29					
6	60	66	50	39	35					
7	70	78	58	45	40					
8	80	89	67	52	46					
9	90	100	75	58	52					
10	100	111	84	65	58					
12	120	133	100	77	69	60				
14	140	155	117	90	81	70	58			
16	160	177	134	103	92	80	66			
18	180	199	150	116	104	90	75			
20	200	222	167	129	115	101	83			
22	220	244	184	142	127	111	91			
24	240	266	200	155	138	121	99	90		
26	260	288	217	168	150	131	108	97		
28	280	310	234	181	161	141	116	105		
30	300	332	251	194	173	151	124	112		
32	320	354	267	206	184	161	133	119		
34	340	377	284	219	196	171	141	127		
36	360	399	301	232	207	181	149	134		
38	380	421	317	245	219	191	157	142		
40	400	443	334	258	230	201	166	149		
42	420	465	351	271	242	211	174	157		
45	450	498	376	290	259	226	186	168		
50	500	554	418	323	288	251	207	187	171	158
60	600	665	501	387	345	302	249	224	205	189
70	700	775	585	452	403	352	290	261	239	221
80	800	886	668	516	460	402	331	299	273	252

Permissible pressure on the ground (load-bearing capacity of the ground) to DIN 1054	
Filled ground, not artificially compacted	0 - 100 kN/m ²
Asphalt	200 kN/m ²
Established, evidently undisturbed ground	
1 Mud, peat, marshy ground	0 kN/m ²
2 Non-cohesive, adequately firmly established ground:	
Fine to medium sand	150 kN/m ²
Coarse sand to gravel	200 kN/m ²

	Crushed stone compacted	250 kN/m ²
3	Cohesive ground	
	Mushy	0 kN/m ²
	Soft	40 kN/m ²
	Firm	100 kN/m ²
	Half-solid	200 kN/m ²
	Hard (solid)	300 kN/m ²
4	Rock	
	Weathered	100 kN/m ²

Bearing area of pads

Square pads

300 x 300 pad = 0.009m²

400 x 400 pad = 0.16m²

500 x 500 pad = 0.25m²

600 x 600 pad = 0.36m²

800 x 800 pad = 0.64m²

1000 x 1000 pad = 1m²

Round pads

800 pad = 0.502m²

1000 pad = 0.785m²

Composite pads

1200 x 1200 = 1.44m²

1500 x 1500 = 2.25m²

$$\text{Ground load / m}^2 \text{ (kN/m}^2\text{)} = \frac{\text{stabilizer load kN}}{\text{Bearing area of pad}}$$

Ground load < Load bearing capacity of the ground

These approximate figures are calculated using the following method:

- Total load moment is assumed to be 1.3 x crane class and taken about the truck centre-line
- Self weight of crane is assumed to be 14% of calculated lift at 1m radius
- Stabilizing widths are assumed to be split equally along the truck centre line
- The working radius is 8m
- The truck weight is determined by a moment calculation about the stabilizer
- The calculated stabilizer load is the sum of the calculated truck weight, the assumed crane self weight and the calculated payload at 8m working radius