Lorry Loader Stabilizer Loads / Mat Area Consideration

UNIVERSAL CRANE MATS LTD
The Load Spread Specialists

Assuming a Permissible Bearing Capacity of 200 kN/m² (approx. 20.4 tonnes / m²); Consider Mat Areas Required To Reduce Applied Pressures To Permissible Levels;

The table date *(produced by ALLMI)* gives approximate calculated vertical loads on stabilizers in kN for loader cranes from 50kNm to 800kNm payload moment. UCM Ltd has added the colour coded mat area guidance relating to a specific bearing capacity of 400 kN/m2.

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.

Mat Area	Mat Area	Loads / mat areas for guidance only. Machine / task specific loads and ground investigation / engineering consideration are required to ensure the mat size and structure are adequate for specific machine loads and ground / site conditions.	Mat Area	Mat Area
400mm x 400mm	0.16 m2		500mm x 500mm	0.25 m2
600mm x 600mm	0.36 m2		800mm x 800mm	0.64 m2
1000mm x 1000mm	1.0 m2		> 1m x 1m	> 1m2

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*

Lorry Loader Stabilizer Loads / Mat Area Consideration

UNIVERSAL CRANE MATS LTD
The Load Spread Specialists

Assuming a Permissible Bearing Capacity of 400 kN/m² (approx. 40.8 tonnes / m²); Consider Mat Areas Required To Reduce Applied Pressures to Permissible Levels;

The table date *(produced by ALLMI)* gives approximate calculated vertical loads on stabilizers in kN for loader cranes from 50kNm to 800kNm payload moment. UCM Ltd has added the colour coded mat area guidance relating to a specific bearing capacity of 400 kN/m2.

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.

Mat Area	Mat Area	Loads / mat areas for guidance only. Machine / task specific loads and ground investigation / engineering consideration are required to ensure the mat size and structure are adequate for specific machine loads and ground / site conditions.	Mat Area	Mat Area
400mm x 400mm	0.16 m2		500mm x 500mm	0.25 m2
600mm x 600mm	0.36 m2		800mm x 800mm	0.64 m2
1000mm x 1000mm	1.0 m2		> 1m x 1m	> 1m2

rane 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*