

StormMaster Testing

Test Date: 27/6/19

Sample Unit A		Load Test: Vertical				Dia Plate: 300mm			Plate area: 0.071		Plate Position: Central			Unsupported Sides							
Load (kg)	0	500	1,000	1,500	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	Yield Load (kN/m2)
Deflection	0	2.12	3.32	4.41	5.5	5.9	6.11	6.4	6.67	6.98	7.37	7.7	8.09	8.6	9.25	Y					416.3

Sample Unit B																					
Load (kg)	0	500	1,000	1,500	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	Yield Load (kN/m2)
Deflection	0	2.08	3.03	3.99	4.95	5.19	5.4	5.65	5.89	6.14	6.38	6.7	6.98	7.28	7.54	7.98	8.37	8.9	Y		458.0

Sample Unit C																					
Load (kg)	0	500	1,000	1,500	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	Yield Load (kN/m2)
Deflection	0	2.35	3.25	4.21	4.99	5.6	5.82	6.03	6.25	6.47	6.7	6.92	7.21	7.45	7.81	8.18	8.54	Y			444.1

Ave Yield (kN/m2)
439.5

Sample Unit F		Load Test: Vertical				Dia Plate: 300mm			Plate area: 0.071		Plate Position: Corner			Unsupported Sides							
Load (kg)	0	500	1,000	1,500	2,000	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600				Yield Load (kN/m2)
Deflection	0	2.51	3.18	4.16	5.23	6.29	6.6	6.87	7.15	7.48	7.75	8.09	8.4	8.78	9.16	9.64	Y				485.7

Sample Unit G																					
Load (kg)	0	500	1,000	1,500	2,000	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600	3,700			Yield Load (kN/m2)
Deflection	0	2.13	3.12	4.12	5.06	6.12	6.43	6.69	6.93	7.25	7.48	7.77	8.05	8.35	8.69	9.06	9.45	9.94	Y		513.5

Sample Unit H																					
Load (kg)	0	500	1,000	1,500	2,000	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	3,300	3,400	3,500	3,600				Yield Load (kN/m2)
Deflection	0	2.25	3.34	4.36	5.51	6.66	6.98	7.37	7.75	8.04	8.45	8.89	9.59	10.8	Y						458.0

Ave Yield (kN/m2)
485.7

Sample Unit M		Load Test: Lateral				Dia Plate: 420mm			Plate area: 0.1385		Plate Position: Centre			Unsupported Sides							
Load (kg)	0	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400										Yield Load (kN/m2)
Deflection	0	3.64	2.58	3.66	4.31	5.16	6.18	7.48	8.78	10.48	Y										92.1

Sample Unit N																					
Load (kg)	0	500	600	700	800	900	1,000	1,100	1,200	1,300	1,350										Yield Load (kN/m2)
Deflection	0	2.38	3.22	4.17	5.11	5.78	6.41	7.11	7.7	8.24	Y										92.1

Sample Unit O																					
Load (kg)	0	500	600	700	800	900	1,000	1,100	1,200	1,300											Yield Load (kN/m2)
Deflection	0	1.14	1.63	2.01	2.43	2.79	3.2	3.67	4.18	Y											85.0

Ave Yield (kN/m2)
89.7

Tests carried out by Lloyds Testing on 26/7/19 in accordance with CIRIA C680 / C737

Test Group 1: A series of 3 tests using a 300 dia mandril on the centre of a StormMaster unit (Vertical Load) - Target 400kN/m2

Sample Unit >	A	B	C	Average
Yield Load (kN/m2)>	416	458	444	439

Test Group 2: A series of 3 tests using a 300 dia mandril on the corner of a StormMaster unit (Vertical Load) - Target 400kN/m2

Sample Unit >	F	G	H	Average
Yield Load (kN/m2)>	486	513	458	486

Test Group 3: A series of 3 tests using a Full Plate (1m x 0.8m) load across the whole of a StormMaster unit (Vertical Load) - Target 400kN/m2

Sample Unit >	I	J	K	Average
Yield Load (kN/m2)>	433	251	347	344

Test Group 4: A series of 3 tests using a 420 dia mandril on the side of a StormMaster unit (Lateral Load) - Target 85kN/m2

Sample Unit >	M	N	O	Average
Yield Load (kN/m2)>	92	92	85	90

Conclusion:

Short term testing using 300 & 420mm diameter mandrils all OK

Short term testing using full plate to be repeated with more appropriate pressure dial & test plate