

Barrier test certificate for: Spectator Seating Ltd.

Job ref: BT/ 1989 /17
 Barrier ref: Barrier prototype
 Details: 1.0kN/m test (Guide to Safety at Sports Grounds barrier type 6)

BEDDING CYCLE			
Pressure (psi)	U.D.L. (kN/m)	Load/ram (kN)	Deflections (mm)
0	0	0	0.00
63	0.20	0.12	0.93
100	0.40	0.23	2.00
138	0.60	0.35	3.09
175	0.80	0.47	4.33
213	1.00	0.59	5.61
0	0	0	0.01
Maximum deflection (mm)			5.61
Maximum permanent deflection (mm, max=2)			0.01
Recovery (%) (Min=75%)			99.8

PROOF CYCLE			
(psi)	(kN/m)	(kN)	Pot 1
0	0	0	0.00
70	0.24	0.14	1.25
115	0.48	0.28	2.51
160	0.72	0.42	3.96
205	0.96	0.56	5.38
250	1.20	0.70	6.88
Load maintained for five minutes			
250	1.20	0.70	6.88
0	0	0	0.13
70	0.24	0.14	1.21
115	0.48	0.28	2.62
160	0.72	0.42	4.09
205	0.96	0.56	5.52
250	1.20	0.70	6.91
Load maintained for five minutes			
250	1.20	0.70	6.92
0	0	0	0.08
Maximum deflection/mm			6.92
Maximum permanent deflection (mm)			0.08
Recovery (%) (Min=95%)			98.8

BARRIER AND TEST DETAILS			
Test on entire length?	Yes	Design service load	1.00 kN/m
Barrier length loaded	0.48 m	Proof test load	1.20 kN/m
Height of barrier	0.90 m	No. of rams	1
Space behind barrier	n/a m	Date tested	18/01/2017
Tread of terrace	n/a m	Initials of tester(s)	TK
Rise of terrace	n/a m		
Gradient	°	Gauge position	
Gauge location	Pot 1 Opposite direction to load application. Midspan of handrail.		

OBSERVATIONS PRIOR TO TESTS



Barrier prototype secured to the concrete slab through bottom hole with M12x75 shield anchor. Bottom of the barrier was secured to steel plates.

Height of barrier was taken as 0.9m, which is the height from the seat pan to the handrail.

The deflection was measured at 60mm away from the mid span.

OBSERVATIONS DURING & AFTER TESTS

No defects were observed during testing.

TEST CONCLUSION: Pass

Tested in accordance with the load - deflection requirements of The Home Office Guide to Safety at Sports Grounds Fifth Edition, Chapter 11.

Barrier test certificate for: Spectator Seating Ltd.

Job ref: BT/ 1989 /17
 Barrier ref: Barrier prototype
 Details: 1.5kN/m test (Guide to Safety at Sports Grounds barrier type 7)

BEDDING CYCLE			
Pressure (psi)	U.D.L. (kN/m)	Load/ram (kN)	Deflections (mm)
0	0	0	0.00
82	0.30	0.18	2.41
139	0.60	0.36	4.97
196	0.90	0.53	7.25
253	1.20	0.71	9.81
310	1.50	0.89	12.58
0	0	0	0.40
Maximum deflection (mm)			12.58
Maximum permanent deflection (mm, max=2)			0.40
Recovery (%) (Min=75%)			96.8

PROOF CYCLE			
Pressure (psi)	U.D.L. (kN/m)	Load (kN)	Pot 1
0	0	0	0.00
93	0.36	0.21	2.92
162	0.72	0.43	5.97
230	1.08	0.64	8.70
298	1.44	0.85	11.70
367	1.80	1.07	15.18
Load maintained for five minutes			
367	1.80	1.07	15.50
0	0	0	0.29
93	0.36	0.21	3.17
162	0.72	0.43	6.35
230	1.08	0.64	9.12
298	1.44	0.85	12.20
367	1.80	1.07	15.07
Load maintained for five minutes			
367	1.80	1.07	15.15
0	0	0	0.32
Maximum deflection/mm			15.50
Maximum permanent deflection (mm)			0.32
Recovery (%) (Min=95%)			97.9

BARRIER AND TEST DETAILS			
Test on entire length?	Yes	Design service load	1.50 kN/m
Barrier length loaded	0.48 m	Proof test load	1.80 kN/m
Height of barrier	0.89 m	No. of rams	1
Space behind barrier	n/a m	Date tested	17/01/2017
Tread of terrace	n/a m	Initials of tester(s)	TK
Rise of terrace	n/a m		
Gradient	°	Gauge position	
Gauge location	Pot 1 Opposite direction to load application. Midspan of handrail.		

OBSERVATIONS PRIOR TO TESTS

Barrier prototype secured to the concrete slab through bottom hole with M12 x 150mm concrete screws (effective depth of 100mm with packing). Bottom of the barrier was secured to steel plates. Height of barrier was taken as 0.89m = 1.39m (total height of barrier) - 0.5m (assumed height of concrete step from client). The deflection was measured at 60mm away from the mid span.

OBSERVATIONS DURING & AFTER TESTS

No defects were observed during testing.



TEST CONCLUSION: Pass

Tested in accordance with the load - deflection requirements of The Home Office Guide to Safety at Sports Grounds Fifth Edition, Chapter 11.

Barrier test certificate for: Spectator Seating Ltd.

Job ref: BT/ 1989 /17
 Barrier ref: Barrier prototype
 Details: 2.0kN/m test (Guide to Safety at Sports Grounds barrier type 4)

BEDDING CYCLE			
Pressure (psi)	U.D.L. (kN/m)	Load/ram (kN)	Deflections (mm)
0	0	0	0.00
101	0.40	0.24	3.32
177	0.80	0.47	6.45
253	1.20	0.71	9.83
329	1.60	0.95	13.55
405	2.00	1.19	15.92
0	0	0	0.05
Maximum deflection (mm)			15.92
Maximum permanent deflection (mm, max=2)			0.05
Recovery (%) (Min=75%)			99.7

PROOF CYCLE			
Pressure (psi)	U.D.L. (kN/m)	Load/ram (kN)	Deflections (mm)
0	0	0	0.00
116	0.48	0.28	3.93
207	0.96	0.57	7.81
298	1.44	0.85	11.88
389	1.92	1.14	16.18
481	2.40	1.42	21.02
Load maintained for five minutes			
481	2.40	1.42	21.25
0	0	0	0.41
116	0.48	0.28	4.44
207	0.96	0.57	8.37
298	1.44	0.85	12.43
389	1.92	1.14	16.95
481	2.40	1.42	21.28
Load maintained for five minutes			
481	2.40	1.42	21.40
0	0	0	0.57
Maximum deflection/mm			21.40
Maximum permanent deflection (mm)			0.57
Recovery (%) (Min=95%)			97.3

BARRIER AND TEST DETAILS			
Test on entire length?	Yes	Design service load	2.00 kN/m
Barrier length loaded	0.48 m	Proof test load	2.40 kN/m
Height of barrier	0.89 m	No. of rams	1
Space behind barrier	n/a m	Date tested	17/01/2017
Tread of terrace	n/a m	Initials of tester(s)	TK
Rise of terrace	n/a m		
Gradient	°	Gauge position	
Gauge location	Pot 1 Opposite direction to load application. Midspan of handrail.		

OBSERVATIONS PRIOR TO TESTS

Barrier prototype secured to the concrete slab through bottom hole with M12 x 150mm concrete screws (effective depth of 100mm with packing). Bottom of the barrier was secured to steel plates. Height of barrier was taken as 0.89m = 1.39m (total height of barrier) - 0.5m (assumed height of concrete step from client). The deflection was measured at 60mm away from the mid span.

OBSERVATIONS DURING & AFTER TESTS

No defects were observed during testing.



TEST CONCLUSION: Pass

Tested in accordance with the load - deflection requirements of The Home Office Guide to Safety at Sports Grounds Fifth Edition, Chapter 11.