Q-railing Technical Report

EASY GLASS®
GLASS ADAPTER
Model 0749
Line load & impact testing

Testing conducted by/at:
Q-railing Europe GmbH & Co.KG
Marie Curie Strasse 8-14
46446 Emmerich am Rhein
Germany

1. Introduction

This report describes tests conducted at the test site of Q-railing Europe GmbH & Co.KG on Easy Glass® Glass adapter model 0749 from Q-railing's catalogue, assembled with various dimensions as shown.

2. Test arrangement

Various barrier specimens were mounted on to a rigid concrete structure with a test rig from steel with sufficient strength to withstand loads applied to it.

For each test, load was applied to the glass in a hand railing height.

Load was measured with a load cell.

Mechanical indicators were used to measure the deflection of the barrier from its neutral position.

3. Materials

1. Glass adapter
   Stainless steel 316, article number 14.0749.500.12
2. Anchoring
   Internal- threaded anchor RG 16 x 90 M10 I A4 to secure model 0749 to the concrete, article number 19.4510.012.14 & 95.0671.035.13
3. Inlay
   Silicone rubber clear (transparent).
4. Glass
   a. 15mm toughened.
   b. 19mm toughened.
   c. 20.76mm (10mm-0,76PVB-10mm) laminated and toughened.
   d. 17.52mm (8 mm-1.52 PVB-8 mm) laminated and toughened.
   e. 16.76mm (8 mm-0.76 PVB-8 mm) laminated and toughened

   For glass dimension, see results table.

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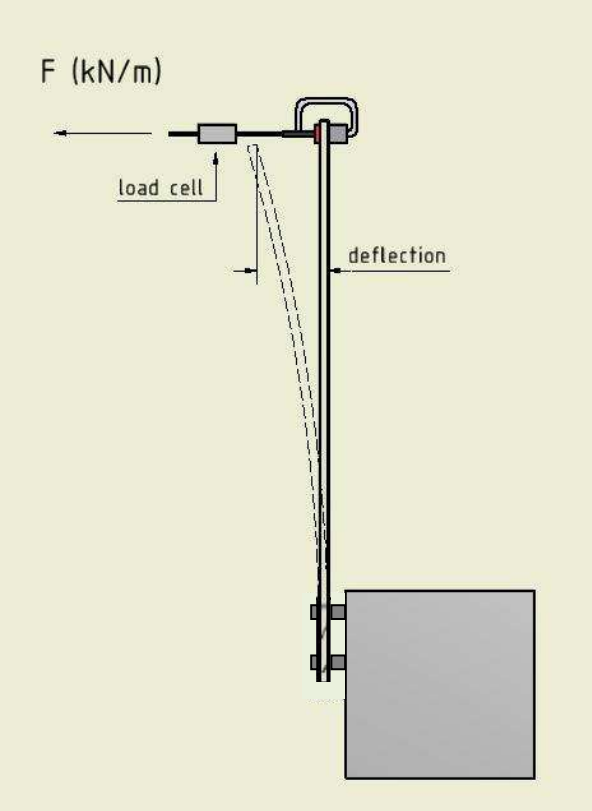
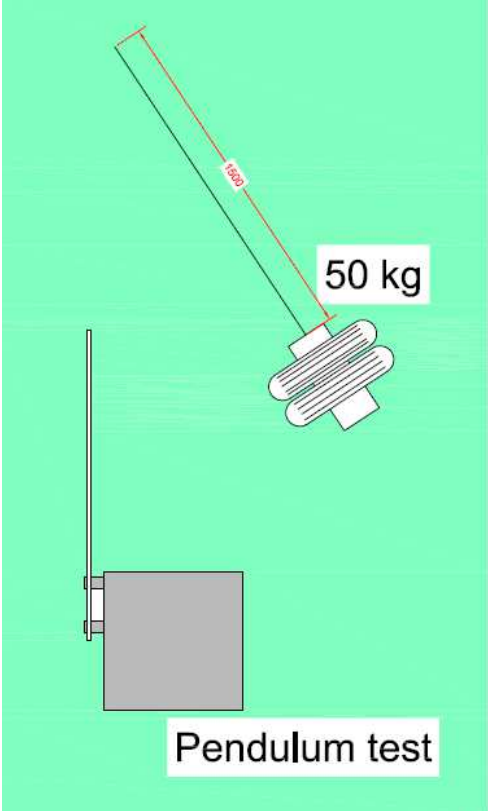
4. Arrangement of test assembly



Test setup



Impact test

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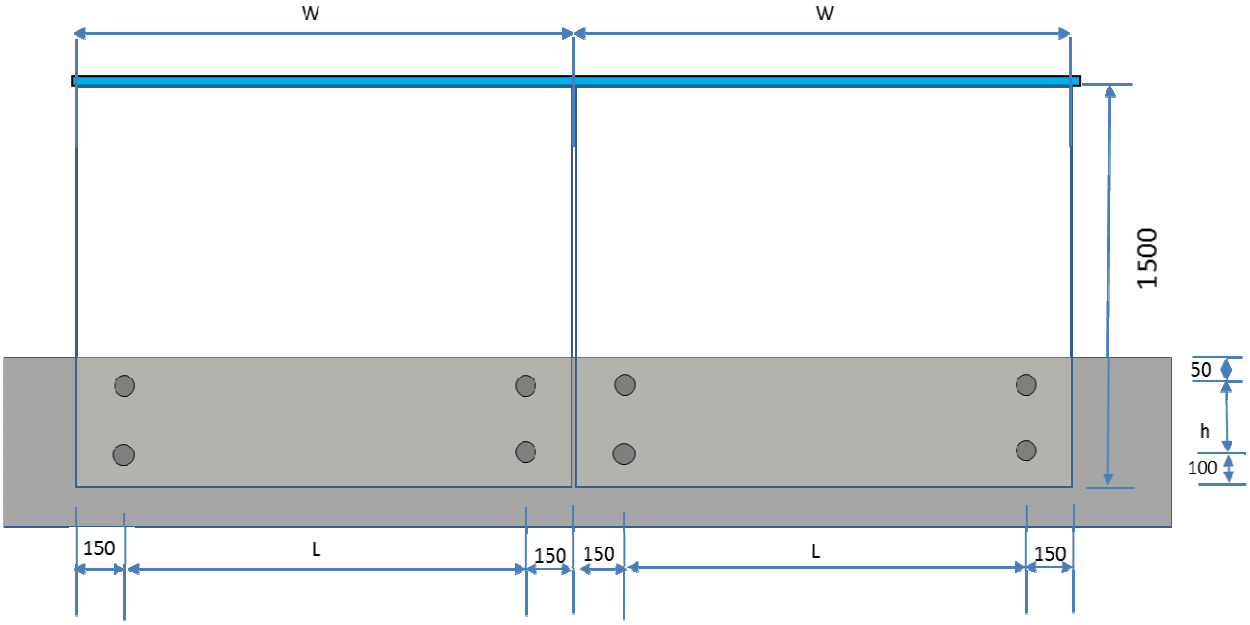
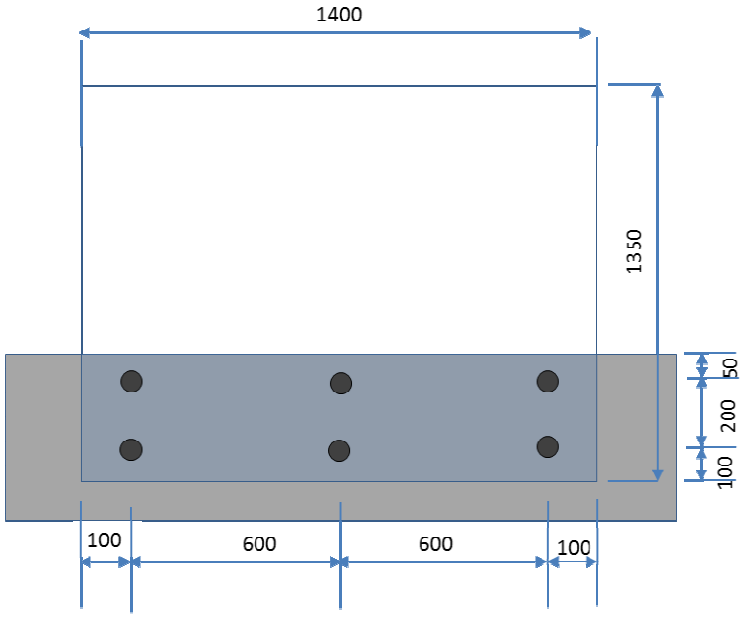


Position 1: glass dimension:
T x H x W
16.76x 900x1500
20.76x1500x1500
20.76x1100x1500
20.76x1300x1500
17.52x1300x1500

Position 2:
glass thickness 15mm, &
17.52mm.



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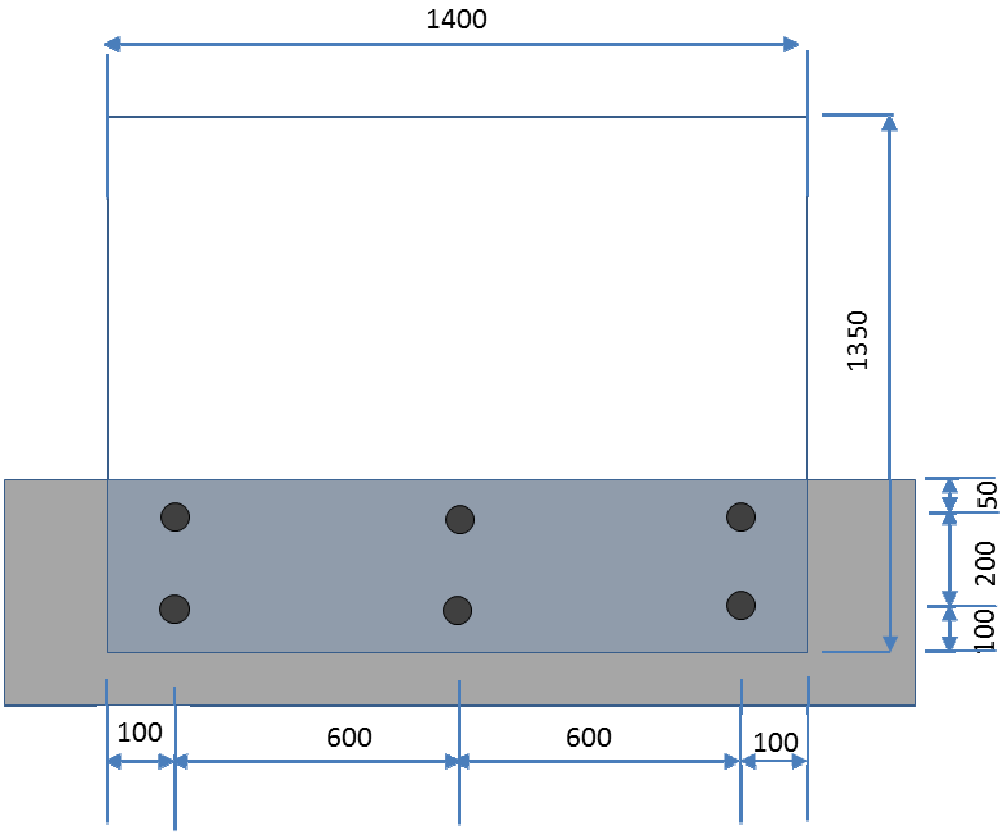

Position 3: Glass dimensions as follows;
T x H x W
15x1000x1350, h=150, h=190
15x1200x1350, h=150,
19x1000x1350, h=150, h=190
19x1200x1350, h=150, h=190

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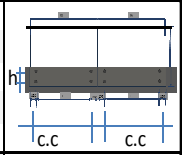
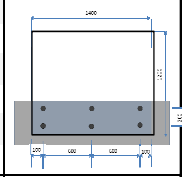
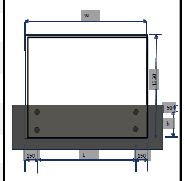
5. Test results

The results are shown in table 1

Table 1.0

					Line Load test							Pendulum test		Position
T. mm.	Position	Dimension mm.	adapters L mm.	adapters h mm.	0.36 kN/m	0.74 kN/m	1.00 kN/m	1.20 kN/m	1.50 kN/m	2.00 kN/m	3.00 kN/m	Fall height 450	700	
					deflection(in mm.) at 1.1m height							domestic	public	
20.76	Pos.1	2x1100x1500	800	190	4.36	10.4	15.21	18.95	24.05	32.47	49.7	passed	passed	
20.76		2x1300x1500	1000	190	9.80	22.60	31.45	38.50	48.63	72.98		passed		
20.76		2x1500x1500	1200	190	10.00	22.80	33.47	41.90	53.12	74.00		passed		
16.76		2x900x1500	600	150	14.65	34.00	48.16	58.70	75.50					
17.52		2x1300x1200	1000	200	19.26	42.27	58.20	70.20						
17.52	Pos.2	1400x1350	2x 600	200	14.16	31.19	44.00	54.53	68.00					
15		1400x1350	2x 600	200	9.82	20.33	27.10	33.37	39.72			passed		
15	Pos.3	1000x1350	700	150	11.92	26.49	36.03	43.36						
15		1200x1350	900	150	16.81	32.34	42.60							
19		1000x1350	700	150	6.82	16.09	22.33	27.07	34.23					
19		1200x1350	900	150	11.90	21.08	27.59	32.25						
15		1000x1350	700	190	11.21	23.74	32.26	38.79						
19		1000x1350	700	190	5.63	13.28	18.59	22.54	28.35			passed	passed	
19		1200x1350	900	190	6.74	14.49	19.91	24.21	30.33			passed	passed	

* Pendulum impact is been tested with top rail only for position 1.

** Pendulum impact is been tested without top rail for position 2 & 3.

*** L = Adapters horizontal distance.

**** h = Adapters vertical distance .

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Comments

The loading was applied to the top of the glass at a height of 1.00m and1.10m respectively above finished floor level.

6. General overview line load test

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