Q-railing

Technical Report

SQUARE LINE®
POST SYSTEM
MOD 4913

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 the test conducted at the Q-laboratory of Q-railing Europe GmbH & Co.KG. The test was conducted on the SQUARE LINE® MOD 4913 top mounted post system assembled two dimensions as shown.

2. Test arrangement

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

For the line load test, the load was applied to the hand railing horizontally. The point load was applied vertically on to the hand rail.

The load was measured with a load cell.

Laser distance sensors and a mechanical gauge were used to measure the deflection of the barrier from its neutral position.

3. Materials

1. Posts
   Article No.: 13.4913.040.12 Rosette with welded tube MOD 4913 40x40 mm
   Article No.: 13.4942.040.00 Base plate glued upright 40x40x2mm
   Article No.: 13.4901.040.12 Tube 40x40x2 mm
   Article No.: 13.2609.000.12 Glass clamp MOD 26 for laminated glass 8,76 mm
2. Handrail brackets
   Article No.: 13.4710.000.12 Straight saddle for flat handrail 40x40 mm
3. Handrail
   Article No.: 13.4925.040.12 Square tube 40x40x2 mm
4. Anchoring
   Article No.: 19.4108.010.14 Anchorbolt FAZ II 8/10
5. Glass:
   8,76 mm (4-0.76-4) laminated glass

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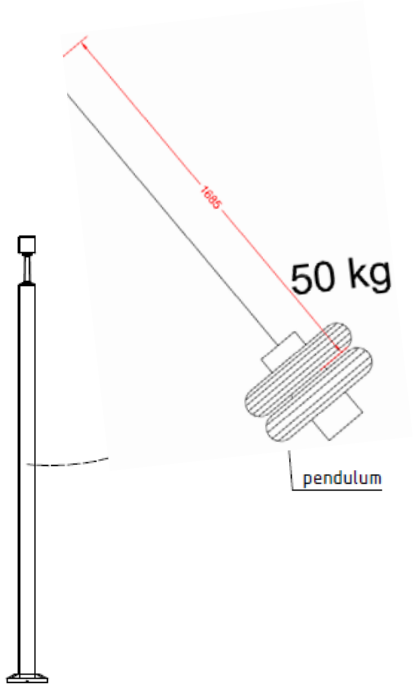
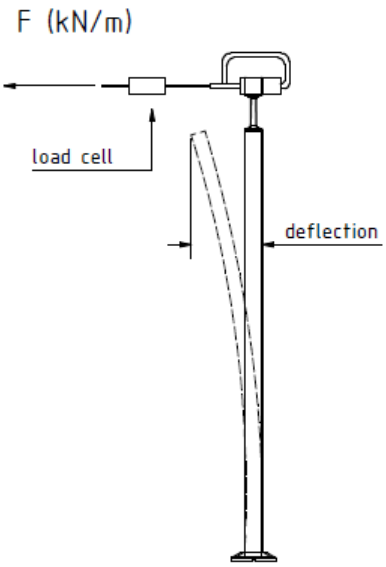
4. Arrangement of test assembly





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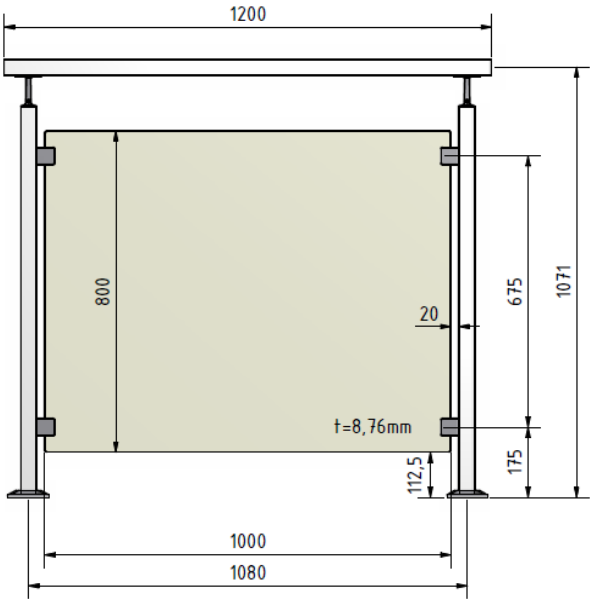
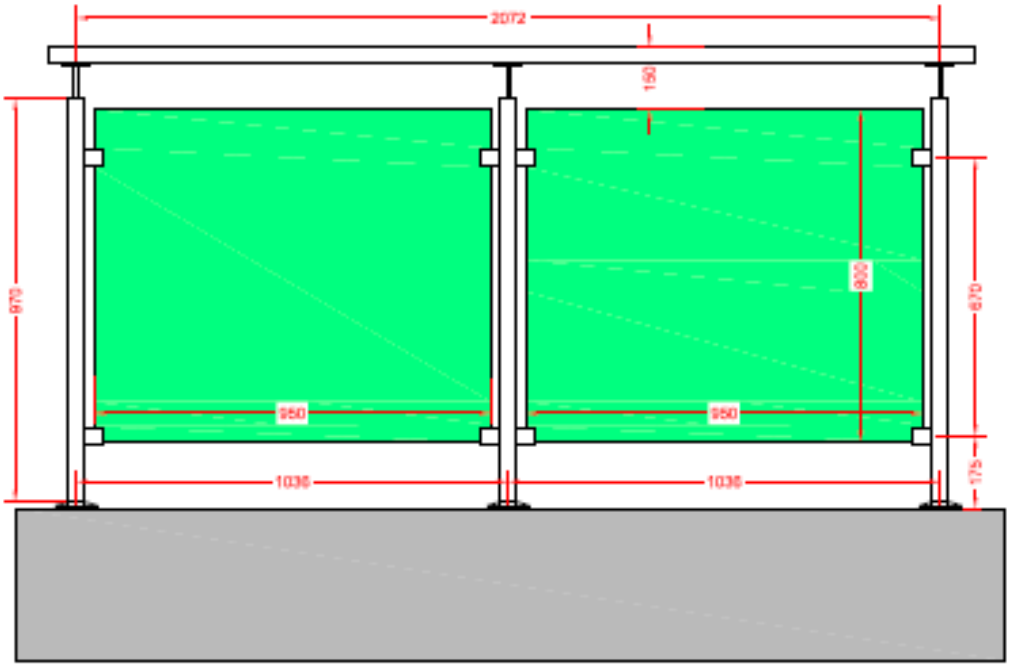
Test assembly 1 & 2:



Test assembly 3:



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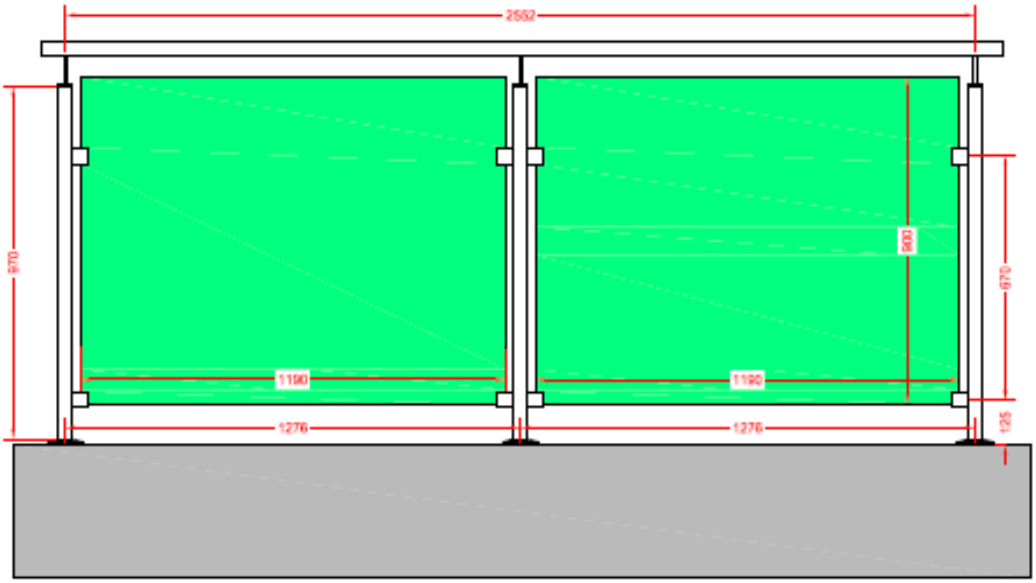
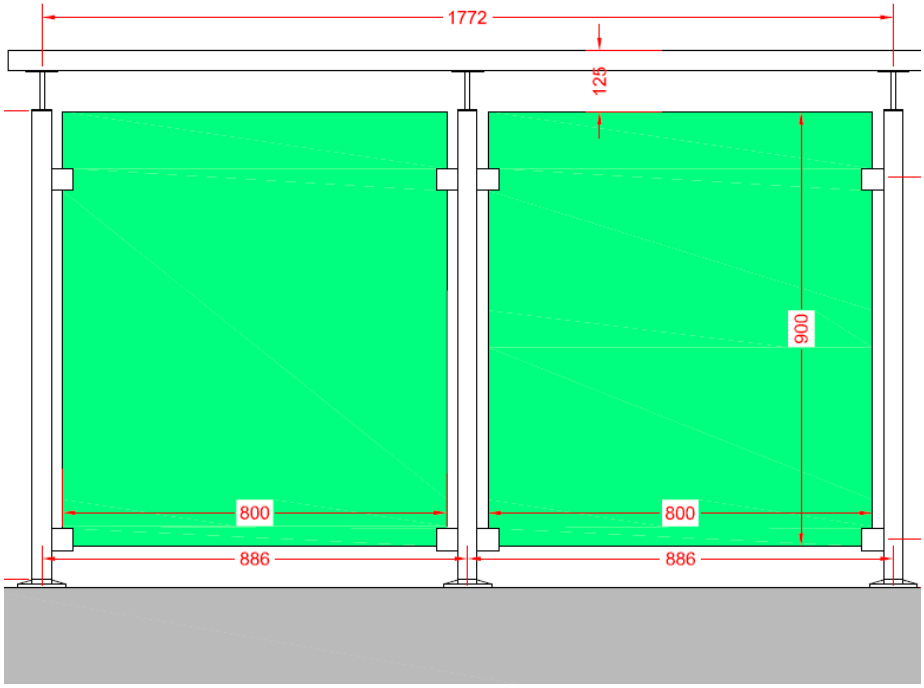
Test assembly 4:



Test assembly 5:



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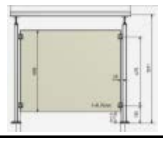
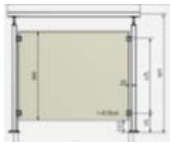
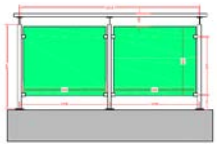
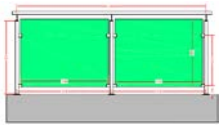
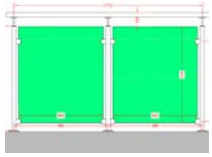
5. Test results

Test assembly	Glass t mm	Dimension Glass w x h	Post distance mm	Line Load test 0,36 kN/m	0,50 kN/m	0,74 kN/m	1,00 kN/m	1,50 kN/m	Pendulum test Fall height 450	Test assembly	
				deflection (in mm) at 1.1 m height							
1	8,76	1000x800	1080	9,78	14,70	23,13	31,12	-	passed		
				Base flange for welding							
2	8,76	1000x800	1080	7,56	11,23	17,53	26,73	-	passed		
				Base flange for glue connection							
3	8,76	950x800	1036	9,37	13,98	21,88	32,21	-	passed		
				Base flange for glue connection							
4	8,76	1190x900	1276	11,00	17,74	29,30	46,80	-	passed		
				Base flange for glue connection							
5	8,76	800x900	886	8,21	11,72	17,73	27,13	-	passed		
				Base flange for glue connection							

Comments

The loading was applied to the hand rail at a height of 1.09 m above finished floor level.

The second test was to apply the impact to the glass according to the standards. The results are to be found in the above table.

A point load of 1.0 kN is been put on top of the middle of the hand rail to measure its deflection. Maximum deflection registered for the 1.0 kN point load was 2.00 mm.

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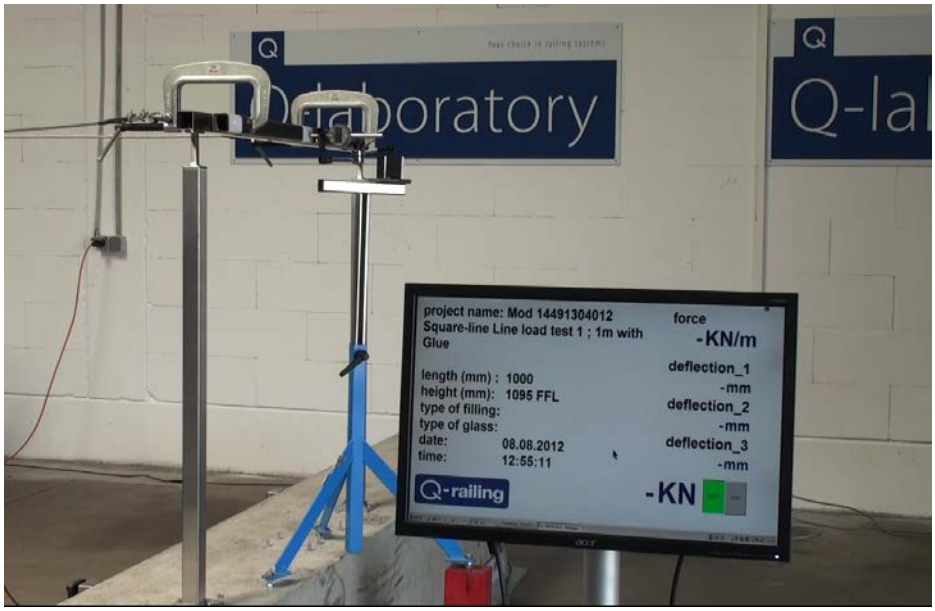
6. General overview line load test



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