



NATIONAL TEST REPORT
(BS 6180 : 2011)

EASY GLASS[®] SLIM
TOP MOUNT
MOD.6904

TEST REPORT

Ceram Reference: 122969 (QT21288/2/SL)/Ref. 1.0B

Project Title: Testing of Q-railing Glass Balustrade System to BS 6180: 2011 - Slim Top Mount

Client: Q-railing Europe GmbH&Co.KG

For The Attention of: Mr Frank Verhey

Author(s): Mr Dave Dix

Report Date: 19 July, 2012

Purchase Order No.: None

Work Location: Ceram UK

This report supersedes the report issued on 18.07.12.



Miss Lisa Cobden
Consultancy Team
Reviewer



Mr Dave Dix
Consultancy Team
Project Manager

CONTENTS

- 1 INTRODUCTION**
- 2 TEST SAMPLES**
- 3 TEST PROGRAMME**
- 4 TEST METHOD**
- 5 RESULTS**

TABLES

FIGURES

DD/LMP/N12TRE12
18.07.12

1 INTRODUCTION

Ceram were commissioned by the client, Q-railing Europe GmbH, to carry out load testing in accordance with BS 6180 Barriers in and about buildings, to allow the channels to be classified for use in accordance with BS 6180:2011 Barriers in and about buildings – Code of Practice.

The testing was carried out at Q-railing's test facilities at Marie-Curie-Straße, 8-14 46446, Emmerich am Rhein, Germany.

This report summarises the test results obtained during the test programme and does not provide interpretation of those results.

2 TEST SAMPLES

The aluminium channel tested was designated as System 1 – Slim Top Mount (16690400018). The system is shown in Figure 1.

The channel was installed by Q-Railing personnel.

3 TEST PROGRAMME

A horizontal line load was carried out on the aluminium channel with the following glass types installed:

- 15 mm Monolithic Toughened (ESG) – 15 ESG – size (w x h): 1.0 m x 1.1 m
- 19 mm Monolithic Toughened (ESG) – 19 ESG – size (w x h): 1.0 m x 1.1 m
- 16.76 mm Laminated Toughened (VSG) – 16.76 VSG (8 ESG-1.52PVB-8 ESG) – size (w x h): 1.0 m x 1.1 m
- 21.52 mm Laminated Toughened (VSG) – 21.52 VSG (10 ESG-1.52PVB-10 ESG) – size (w x h): 1.0 m x 1.1 m.

4 TEST METHOD

The channel was bolted down to a concrete block, nominally 0.5 m x 0.5 m x 3.5 m which was fixed to the floor of the test facility. The channel was bolted to the block at 100 mm centres by the client using the appropriate fixings (see Figure 2).

The appropriate thickness glass panel was fitted into the channel using the 'Safety Wedge' fixing clips at nominally 250 mm centres such that the plastic clip was to the inside face of the glass (see Figures 2 and 3).

A horizontal imposed line load was applied to the glass at a height of 1.1 m above the datum level of the floor and the deflection measured at the top central point of the panel 1.1 m above the datum level of the floor. The load was applied via a hydraulic ram and the deflection measured using a digital electronic displacement transducer (see Figure 3).

5 RESULTS

The test was carried out in accordance with the guidance given in BS 6180 Barriers in and about buildings – Code of Practice. The standard states that the maximum allowable deflection for a free standing glass protective barrier panel is 25 mm.

Table 2 of BS 6180 Barriers in and about buildings – Code of Practice categorises parapets, barriers and balustrades for areas of use depending on the loads they have achieved under testing.

The loads achieved by the Q-Railing glazing system tested under horizontal imposed line load to the maximum deflection of 25 mm are given in Table 1.

All figures quoted in Table 1 contain no safety factors and are direct loads as achieved by the system under test conditions.

Table 2 summarises the suitability of the tested systems in accordance with Table 2 of BS 6180:2011.

NOTE: The results given in this report apply only to the samples that have been tested.

END OF REPORT

Table 1 - Summary of Performance of Q-railing Glass Balustrade System Tested under Horizontal Imposed Line Load

Base Rail	Glass	Imposed Line Load at 25 mm Deflection (kN/m)	Working Line Load for System (kN/m)	Deflection at Working Line Load for System (mm)
System 1 – Slim Top Mount (16690400018)	19 mm Monolithic Toughened 1.0 m x 1.1 m	1.54	1.50	23.9
	21.52 mm Laminated Toughened 1.0 m x 1.1 m	0.90	0.74	20.0
	15 mm Monolithic Toughened 1.0 m x 1.1 m	0.99	0.74	17.8
	16.76 mm Laminated Toughened 1.0 m x 1.1 m	0.61	0.36	13.8

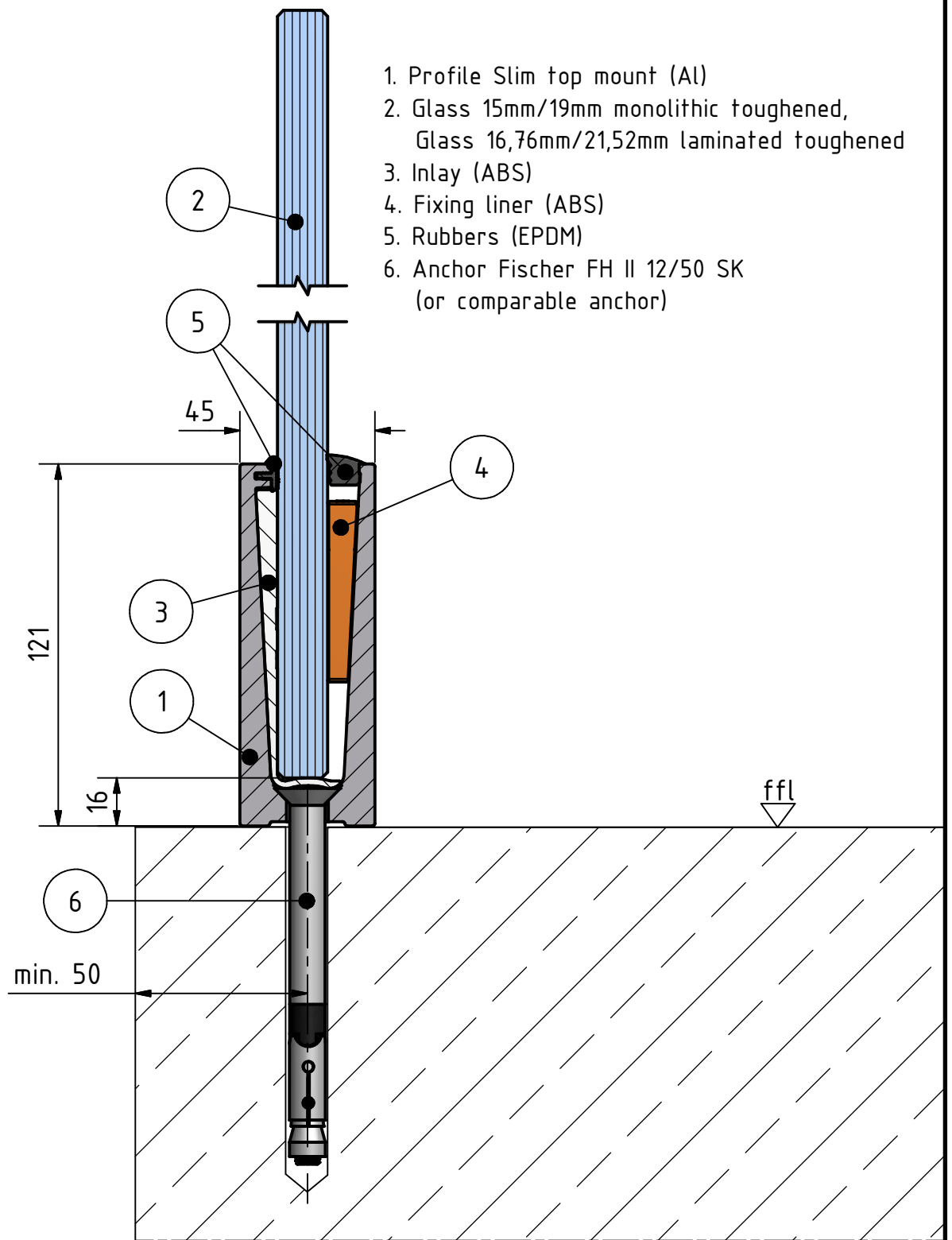
Table 2 - Summary of Suitability of Q-railing Glass Balustrade Systems in Accordance with Table 2 of BS 6180:2011

Type of Occupancy for Part of the Building or Structure	Examples of Specific Use	Horizontal Uniformly Distributed Line Load (kN/m)	System 1			
			19 mm Monolithic Toughened	21.52 mm Laminated Toughened	15 mm Monolithic Toughened	16.76 mm Laminated Toughened
Domestic and residential activities	(i) all areas within or serving exclusively one single family dwelling including stairs, landings, etc but excluding external balconies and edges of roofs	0.36	✓	✓	✓	✓
	(ii) other residential, i.e. houses of multiple occupancy and balconies, including Juliette balconies and edges of roofs in single family dwellings	0.74	✓	✓	✓	X
Offices and work areas not included elsewhere, including storage areas	(iii) light access stairs and gangways not more than 600 mm wide	0.22	✓	✓	✓	✓
	(iv) light pedestrian traffic routes in industrial and storage buildings except designated escape routes	0.36	✓	✓	✓	✓
	(v) areas not susceptible to overcrowding in office and institutional buildings, also industrial and storage buildings except as	0.74	✓	✓	✓	X

Type of Occupancy for Part of the Building or Structure	Examples of Specific Use	Horizontal Uniformly Distributed Line Load (kN/m)	System 1			
			19 mm Monolithic Toughened	21.52 mm Laminated Toughened	15 mm Monolithic Toughened	16.76 mm Laminated Toughened
	given above					
Areas where people might congregate	(vi) areas having fixed seating within 530 mm of the barrier, balustrade or parapet	1.5	✓	X	X	X
Areas with tables or fixed seating	(vii) restaurants and bars	1.5	✓	X	X	X
Areas without obstacles for moving people and not susceptible to overcrowding	(viii) stairs, landings corridors ramps	0.74	✓	✓	✓	X
	(ix) external balconies including Juliette balconies and edges of roofs; footways and pavements within building cartilage adjacent to basement/sunken areas	0.74	✓	✓	✓	X
Areas susceptible to overcrowding	(x) footways or pavements less than 3 m wide adjacent to sunken areas	1.5	✓	X	X	X
	(xi) theatres, cinemas, discotheques, bars, auditoria, shopping malls, assembly areas, studios; footways or pavements greater than 3 m wide adjacent to sunken areas	3.0	X	X	X	X
	(xii) grandstands and stadia	(Note 1)	-	-	-	-
Retail areas	(xiii) all retail areas including public areas of banks/building societies or betting shops	1.5	✓	X	X	X
Vehicular	(xiv) pedestrian areas in car parks, including stairs, landings, ramps, edges of internal floors, footways, edges of roofs	1.5 (Note 2)	✓	X	X	X
	(xv) horizontal loads imposed by vehicles	(Note 2)	-	-	-	-

Note 1 – See requirements of the appropriate certifying authority.

Note 2 – Clause 8.1.1 of BS 6180:2011 states that “glass should not be used for vehicle protection barriers”.



Article: EASY GLASS SLIM

MOD: 6904

Drawn: TR

Date: 15.12.2011

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Project: top mount

Detail: Figure 1

Edited:

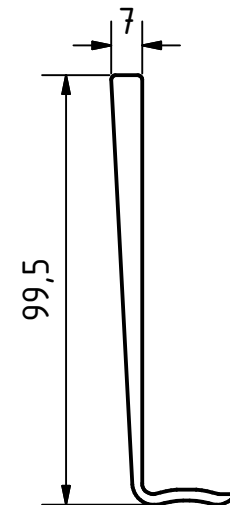
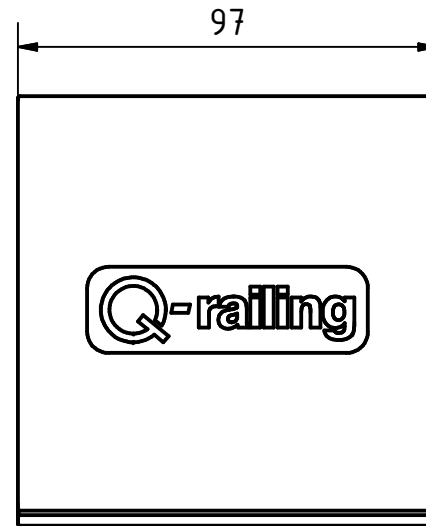
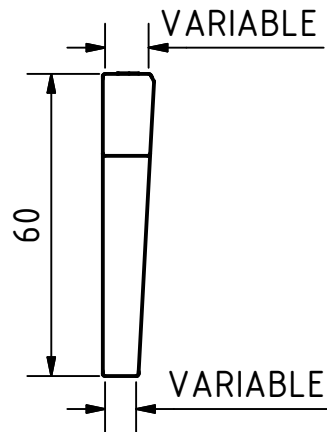
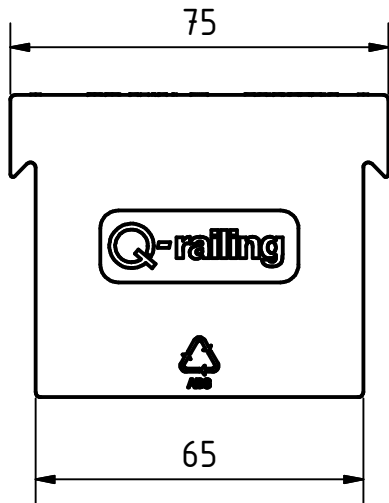
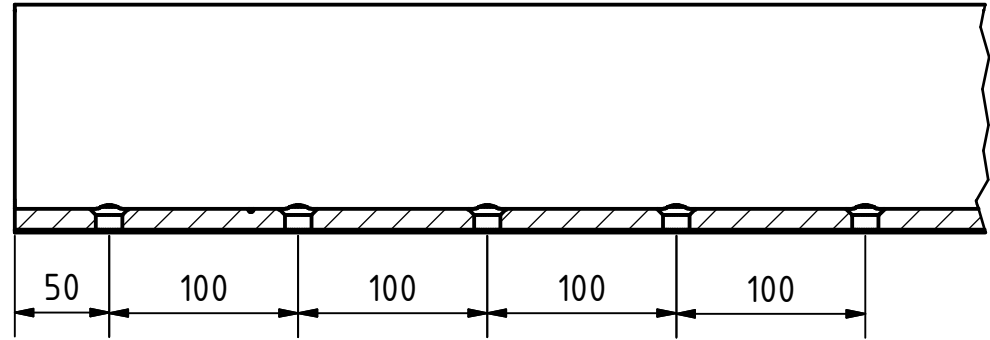
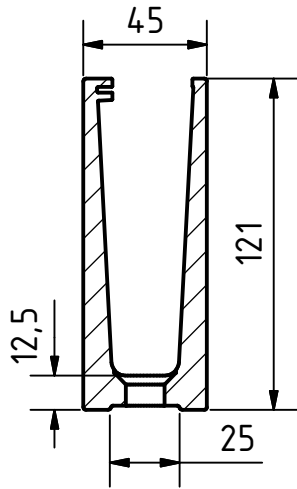
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Your choice in railing systems



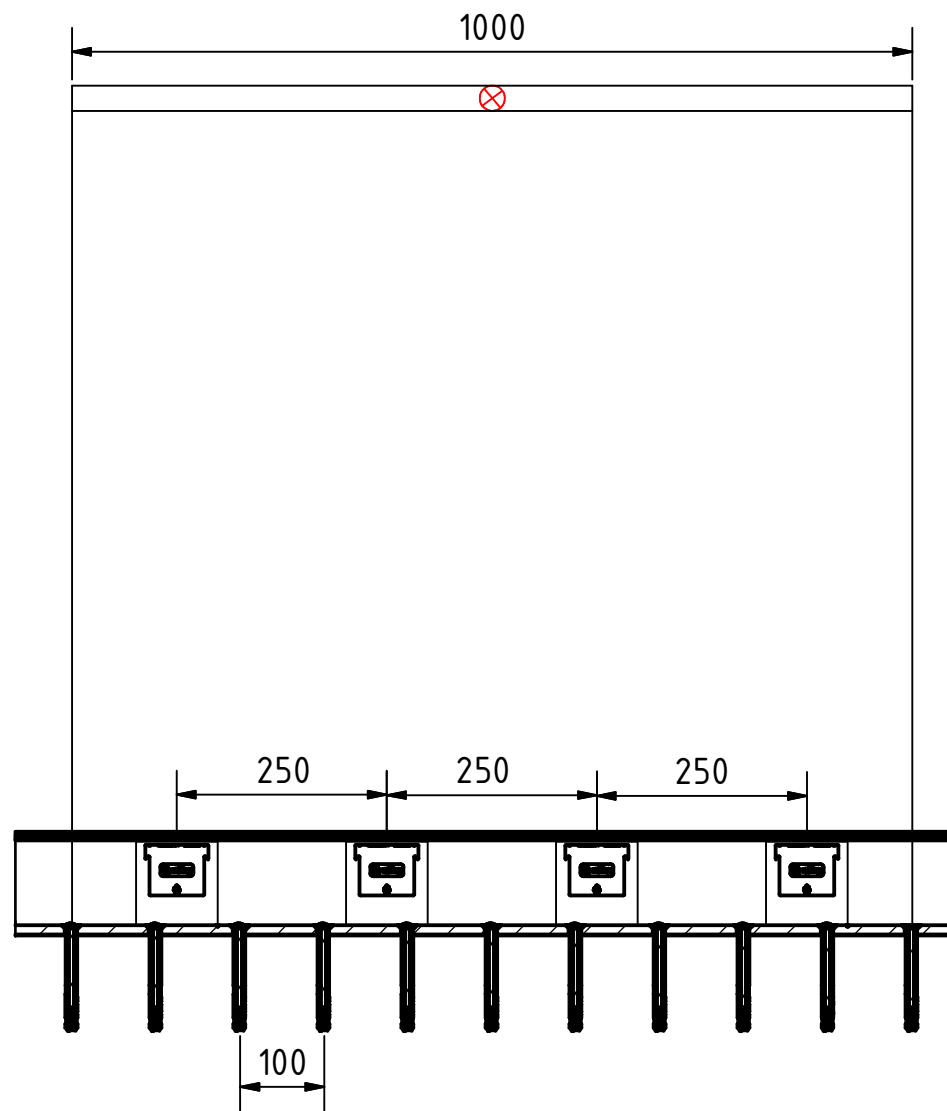
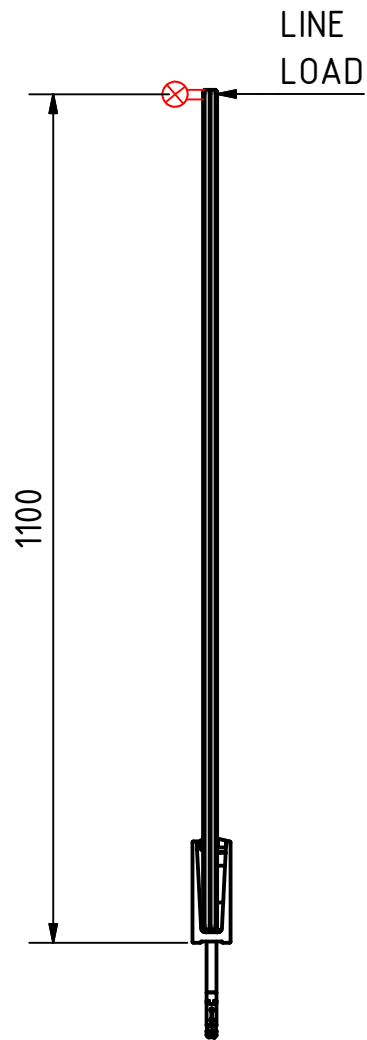
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Article: EASY GLASS SLIM	MOD: 6904	Drawn: TR
		Date: 15.12.2011
Project: top mount	Detail: Figure 2	Edited:
		Date:
Scale: -	Your choice in railing systems	

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Project: top mount

Detail: Figure 3

Edited:

Date:

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Your choice in railing systems



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GOOD LUCK WITH
YOUR INSTALLATION!

VIEL ERFOLG MIT
IHRER MONTAGE!

SUCCES MET
DE INSTALLATIE!