



## TEST REPORT

**Lucideon Reference:** 19307 (QT-54391/2/GMB)/Ref. 5/Supp1

**Project Title:** Testing of Posi-Glaze Balustrade System Incorporating 17.5 mm PVB Glass in Accordance with BS 6180:2011

**Client:** Pure Vista Ltd  
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**For the Attention of:** Mr Adam Oakes

**Author(s):** Miss Lisa Cobden

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**Purchase Order No.:** 2283

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**Work Location:** Lucideon UK

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This report supersedes the report issued on 31.01.19.

A handwritten signature in black ink, appearing to read 'Paul Wood'.

Dr Paul Wood  
Consultancy Team  
Reviewer

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Miss Lisa Cobden  
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Project Manager

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## 1 INTRODUCTION

Lucideon Limited were commissioned by the client, Pure Vista Ltd, to carry out load testing in accordance with BS 6180:2011 Barriers in and about buildings, to allow their balustrade system to be classified for use in accordance with the Code of Practice included within the Standard.

The testing was carried out at Lucideon's facilities at Queens Road, Penkhull, Stoke on Trent.

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

## 2 TEST SAMPLES

A single system was tested designated as follows:

- Posi-Glaze.

The system had been designed and intended to be used as the base mount for free standing balustrades. The system and glass was installed by Pure Vista personnel.

## 3 TEST PROGRAMME

A horizontal line load was applied to the systems using the following glazed sections:

- 17.5 mm PVB Glass 1000 mm x 1200 mm (w x h).

Tests were conducted under the following conditions:

- Load Application 1200 mm Deflection Recorded at 1200 mm.
- Load Application 1100 mm Deflection Recorded at 1200 mm.

## 4 TEST PREPARATION

The channel was bolted to the top of a concrete block, which was fixed to the floor of the test facility.

The 1000 mm length of channel was bolted to the block at 200 mm centres, 100 mm from the end and 200 mm thereafter. The clamps were installed at 4 clamps per metre, spaced at 100 mm from the edge with 200 mm between clamps.

The bolts used for the installation were:

Spit:- Guardia 12x105/20 Art no.051061.

Wurth:- W-Haz 12/10 Art no. 0905 212 002.

## 5 TEST METHOD

A horizontal imposed line load was applied to the glass at the specified heights, all of which were measured from the datum level of the floor. In each instance deflection was recorded at the horizontal centre of the panel and specified height. The load was applied via a hydraulic ram. A hardwood timber baton was used to distribute the load uniformly across the width of the glass panel. Deflection was measured using a linear voltage displacement transducer (see Plate 1). The samples were tested until destruction occurred or until 25 mm of deflection was recorded at which point the test was stopped.

## 6 RESULTS

The tests were carried out in accordance with the guidance given in BS 6180:2011 Barriers in and about buildings - Code of Practice. The Standard states that the maximum allowable deflection for a free standing glass protective barrier panel when loaded at a minimum height of 1100 mm is 25 mm. Testing at a height above this is seen as a more onerous test than one which is conducted at 1100 mm.

The loads achieved by the Pure Vista systems tested under horizontal imposed line loads are given in Table 1. All figures quoted in the Table contain no safety factors and are direct loads as achieved by the system under test conditions.

**Table 1** - Summary of Performance of Pure Vista Posi-Glaze Balustrade System Mounted into Concrete Tested under Uniformly Distributed Horizontal Imposed Line Load

Glass Type	Load Application (mm)	Transducer Position (mm)	Imposed Line Load at 25 mm Deflection (kN/m)	Working Line Load for System (kN/m)	Deflection at Working Line Load for System (mm)
17.5 mm PVB	1200	1200	0.73	0.36	12.00
17.5 mm PVB	1100	1200	0.90	0.74	19.03

**Table 2** - Summary of Suitability of Pure Vista Posi-Glaze Fixed into Concrete in Accordance with Table 2 of BS 6180:2011

Type of Occupancy for Part of the Building	Examples of Specific Use	Horizontal Uniformly Distributed Line Load (kN/m)	17.5 mm PVB Glass	
			Loaded at 1200 mm Deflection Measured at 1200 mm	Loaded at 1100 mm Deflection Measured at 1200 mm
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 given above	0.74	X	✓

Type of Occupancy for Part of the Building	Examples of Specific Use	Horizontal Uniformly Distributed Line Load (kN/m)	17.5 mm PVB Glass	
			Loaded at 1200 mm Deflection Measured at 1200 mm	Loaded at 1100 mm Deflection Measured at 1200 mm
Areas where people might congregate	(vi) areas having fixed seating within 530 mm of the barrier, balustrade or parapet	1.50	X	X
Areas with tables or fixed seating	(vii) restaurants and bars	1.50	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	1.50	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	3.00	X	X
	(xii) grandstands and stadia	(Note 1)	-	-
Retail areas	(xiii) all retail areas including public areas of banks/building societies or betting shops	1.50	X	X
Vehicular	(xiv) pedestrian areas in car parks, including stairs, landings, ramps, edges of internal floors, footways, edges of roofs	1.50 (Note 2)	X	X
	(xv) horizontal loads imposed by vehicles	3.0 (Note 2)	-	-

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

**END OF REPORT**

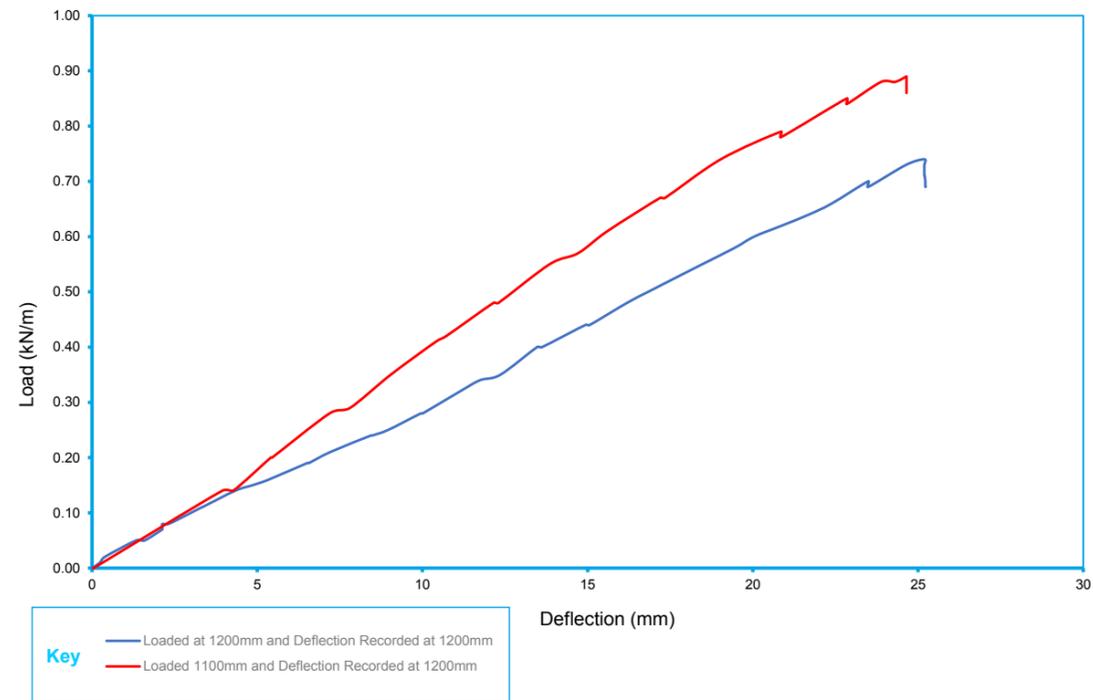
**PLATE**



**Plate 1 - Generic Test Configuration**

**Chart 1** - Load Deflection Curve for Pure Vista Posi-Glaze Balustrade System Incorporating 17.5 mm PVB Glass Base Mounted into Concrete

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**APPENDIX A** - Drawing

