



TEST REPORT

Lucideon Reference: 174989 (QT-47953/1/GMB & QT-48520/1/GMB)/Ref. 5

Project Title: Simulated Wind Loading of Posi-Glaze Balustrade System Incorporating 21.5 mm PVB Glass

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Work Location: Lucideon UK

A handwritten signature in black ink, appearing to read 'Joanne Booth'.

Miss Joanne Booth
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Miss Lisa Cobden
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CONTENTS

	Page
1 INTRODUCTION	3
2 TEST SAMPLES	3
3 TEST PROGRAMME	3
4 TEST PREPARATION	3
5 TEST METHOD	3
6 RESULTS	4
7 DISCUSSION	4
TABLE	5
PLATE	6
CHARTS	7

1 INTRODUCTION

Lucideon Limited were commissioned by the client, Pure Vista Ltd, to carry out simulated wind loading testing using an air bag system to apply a uniformly distributed load.

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

The system tested was designated as follows:

- Posi Glaze.

The systems and glass were installed by Pure Vista personnel.

3 TEST PROGRAMME

The Posi-Grip system was mounted on to a 10 mm thick steel I-section the appropriate thickness glass panel installed and subjected to a Positive wind load.

The following glass panel having dimensions 1100 mm x 1000 mm (h x w) was tested:

- 21.5 mm PVB Glass.

4 TEST PREPARATION

The channel was bolted to the top of a piece of 10 mm thick steel C-section, which was welded to a steel anvil that was bolted to the floor of the test facility. The 1.00 m length of Posi Glaze channel was bolted to the steel section at 200 mm centres using 12 mm bolts set in pre drilled counter sunk holes.

The 21.5 mm thickness glass panel was fitted into the channel using the glass slip clamping system and clamping bar. The clamps were fitted at 4 per metre and spaced 100 mm from the edge with 200 mm between the clamps.

5 TEST METHOD

An air bag was positioned on to the face of the test panel and a reaction board was placed over this butting up-to and braced backed to the steel frame.

Two linear displacement transducers were located on an independent scaffold frame reading onto the rear of the panel with one positioned at the mid-point of the panel and the second positioned at the mid-point of the top edge of the glass panel.

A load was applied to the balustrade system via the air bags until a minimum deflection of 25 mm was recorded at the centrally positioned transducer.

6 RESULTS

Table 1 gives the results for the applied load versus deflection of the panel.

At 25 mm mid-point deflection the 21.5 mm PVB glass panel achieved a maximum load of 3.62 kN/m².

7 DISCUSSION

Under wind loading there is no pass or fail criteria, the system will either be adequate or inadequate in any particular situation. So for example a system installed on a building at the top of an escarpment in the North of Scotland will be expected to resist much greater wind forces than one in the centre of London. However, as an indication, the speed of a 3 second gust of wind in the North of Scotland could reach 56 m/s at 10 m above the ground with a likely incidence of return of once in 50 years. This is typical of the level that would be incorporated into design in the U.K. This gust has a dynamic pressure equivalent to 1.68 kN/m².

The 21.5 mm PVB glass panel achieved a maximum load of 3.62 kN/m² at mid-point deflection of 25 mm

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 Pure Vista Posi Glaze Balustrade 21.5 mm PVB Glass Top Mounted into Steel Tested for Simulated Wind Load

Applied Load (kN/m ²)	Equivalent Simulated Wind Speed (m/S)	Deflection Mid-Point (mm)	Deflection at Mid-Point Top (mm)
0.15	16	0.5	0.01
0.22	19	0.85	0.07
0.99	41	1.94	1.21
1.69	53	6.87	13.21
2.05	58	10.29	21.33
2.27	62	12.24	25.29
2.53	65	14.73	30.19
2.71	67	16.43	32.54
3.77	79	25.56	40.12
4.03	82	28.2	44.96
4.69	88	35.52	55.43

Test Report: 174989/Ref. 5

PLATE

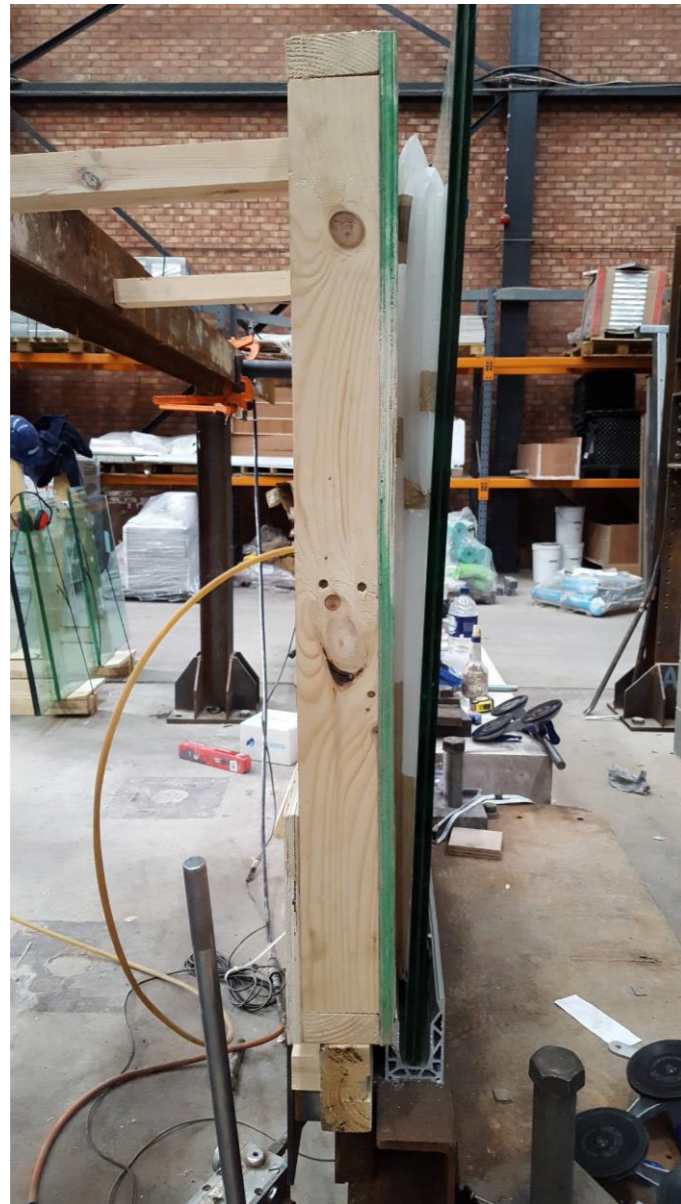


Plate 1 - General Test Configuration

