

## TEST REPORT

**Lucideon Reference:** 194078 (QT57040/1/JB)/Ref. 2

**Project Title:** Load Testing of FH Brundle's Pro Railing - Verona Juliet Balcony Rail Kits

**Client:** FH Brundle  
81/82 Middlemore Industrial Estate  
Middlemore Road  
Smethwick  
Birmingham  
B66 2EP

**For the Attention of:** Mr Danny Hull

**Author(s):** Mr Justin Fryer

**Report Date:** 21 November, 2019

**Purchase Order No.:** 613665

---

**Work Location:** Lucideon UK

---



Miss Joanne Booth  
**Testing Team**  
**Reviewer**



Mr Justin Fryer  
**Testing Team**  
**Project Manager**



**CONTENTS**

	<b>Page</b>
<b>1 INTRODUCTION</b>	<b>3</b>
<b>2 TEST ARRANGEMENT</b>	<b>3</b>
<b>3 TEST METHOD</b>	<b>3</b>
<b>4 RESULTS</b>	<b>3</b>
<b>PLATE</b>	<b>4</b>
<b>CHART</b>	<b>5</b>
<b>APPENDIX A - Figure</b>	



## 1 INTRODUCTION

FH Brundle design and manufacture Pro Railing – Verona Juliet Balcony Rail Kits to be used as architectural features in new and existing buildings.

As part of their product development, they required a programme of testing to determine their products performance in accordance with British and European standards.

## 2 TEST ARRANGEMENT

2 No. steel stanchions were bolted to the laboratory strong floor.

A small steel RSJ section was attached to each of the stanchions to carry the Verona handrail bracket at 2530 mm centres.

The Verona handrail brackets were secured to the RSJ using 2 No. carver clamps.

Each of the Verona hand rails were slid through the handrail brackets in turn and clamped to the bracket using the grub screw.

## 3 TEST METHOD

A hardwood spreader beam was placed along the entire length of the handrail.

A steel UB was attached to the stanchions above the sample by way of 4 No. carver clamps and a hydraulic ram was positioned directly above the centre span of the handrail.

A calibrated load cell was attached to the hydraulic ram by way of a steel cage to measure the load during testing. A calibrated Linear Voltage Displacement Transducer (LVDT) to measure the deflection at the centre point of the span of the handrail.

A load was applied up to 25 mm deflection.

Photographs can be seen in the Plates Section.

## 4 RESULTS

Handrail Type	Deflection (mm)	Load at 25 mm Deflection (kN)	Load at 25 mm Deflection (kN/m)
Split Tube	25	1.4	0.55
Solid Tube		1.5	0.59

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

**END OF REPORT**

**PLATE**



**Plate 1 - Typical Test Set-Up**

Chart 1 - Load Deflection Curves for Load Testing of FH Brundles ProRail Juliet Balcony Handrails



Test Report: 194078/Ref. 2



