



Report No SC14-2043 / 1

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TESTING OF GUARD RAILS

Client: Kazed Industrial Solutions
4 Monterey Road
Dandenong Vic 3175

Att: Mr Peter Angelico

Order No: PO100046

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INTRODUCTION

It was requested to test a fixed handrail system to AS1657 Appendix B Section B4. As infill panels were not fixed, wind loading was not assessed.

RESULTS OF TESTING

Force Measuring Instrument:	Calibrated S Type Load Cell
Test Location:	Kazed Industries, Dandenong
Test Date:	3 March 2014
Test Personnel:	J Tandy

A fixed handrail section consisting of four posts fitted with a top and intermediate rail were set up as shown in Figure 1 with a span of 1850mm between posts.

The middle upper rail was preloaded with a horizontal outward force of 324N and a datum established. A test load of 647.5N was then applied as a horizontal outward load and an elastic deflection of 18mm was recorded (under load) and 2.5mm permanent deflection, complying with the requirement of not exceeding 100mm and 20mm respectively.

A vertical datum force of 324N was applied to the rail and then the vertical test load of 647.5N was applied with 1mm elastic deflection recorded under load and 0.5mm permanent deflection, complying with the above requirements. A horizontal ultimate load of 1295kN was applied and the system supported the load without collapse with 6.5mm permanent deflection, complying with the test requirement.

The test was also performed on an end post. An outward datum of 300N was applied to the top of the post and then a test load of 600N was applied, with a deflection under load of 15mm and permanent deflection of 1.5mm, complying with the test requirements of not exceeding 100mm and 20mm respectively. In the above tests, the test loads were applied for 1 minute and permanent deflection measured 2 minutes after removal of the load.

CONCLUSION

The fixed system guardrail and post complied with the above requirements of AS1657:2013 Appendix B.

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Figure 1



Figure 2