



**Report No SC14-2043 / 2**

11 March 2014

## TESTING OF GUARD RAILS

**Client:** Kazed Industrial Solutions  
4 Monterey Road  
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**Att:** Mr Peter Angelico

**Order No:** PO100046

**Prepared By:**

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**INTRODUCTION**

It was requested to test a temporary handrail system (K2 modular system incorporating Master Clamp fittings and K Guard temporary 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 (but with additional weights on the two end posts) with a span of 1850mm between posts.

The two end posts were loaded to 67kg on their base while intermediate posts were loaded to 29kg.

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 33mm was recorded (under load) and 6.5mm permanent deflection, complying with the requirement of not exceeding 100mm and 20mm respectively.

An upward vertical datum force of 324N was applied to the rail and then the vertical test load of 647.5N was applied with 4mm 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 74mm permanent deflection, complying with the test requirement.

The test was also performed on an end post (see Figure 2). An outward datum of 300N was applied to the top of the post and then a test load of 600N was attempted to be applied, however, the post rotated. A load considerably greater than 67kg would be required. The post was clamped to the floor by additional weights to assess the effect of applying 1200N. While it was capable of supporting the load 60mm permanent bend occurred due to distortion of the base plate.

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 temporary system guardrail and post has the potential to comply with the above requirements of AS1657:2013 Appendix B, however, significantly greater weights would need to be added and it is recommended that the base plate be strengthened.

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