LOAD TESTING OF HANDI PROPS

(Revised on 27 January 2016)

FOR

DALANCO PTY LTD

NOVEMBER 2015

BY

BUILDING CONSTRUCTION TEST LABORATORY

1. Introduction

At the request of Mr. David Everett of All Metal Connectors (AMC), we attended during 9 to 10 November 2015 testing sessions for Handi Props with a view to confirming their vertical working load capacity. One size of props was tested. The tests were carried out at 6 Gatwood Close, Padstow, NSW. The test load and method of testing evolved from consideration of the Australian Standard AS 3610: 1995, Appendix A, and AS 3610 Supplement 2: 1996, Appendix CA.

2. Test Apparatus

The test was carried out using a test loading frames with Hydraulic system (10T), digital reading and load cells which has been calibrated by Precise Calibration Services (PCS), a NATA accredited organisation, and is valid for accuracy estimation until 6 November 2016.

Accessories include:
- loading bars and couplers,
- Lift truck,
- Rule, laser measures, and
- Levers

3. Specimen

Two samples were supplied by the client. One for close condition and one for fully opened condition. See Photo A. The range of height for the size is set in Table 1 below.

Size	Closed Height (mm)	Full Open Height (mm)	Est. Weight (kg)	Other Measures mm
No.0	1800	3100	9	48X1.5 (outer) 40X1.5 (Inner)

Table 1: Specification of Handi Props

4. Test Method

Destructive testing stated in as in AS 3610-1995 was adopted.

The props were supported between test frames, under Hydraulic cylinder and load cells, with the specified eccentricities 20mm from the centre of the top plate and to the centre of the cylinder. The cross RHS base of the props is sat on a shaped steel block with slope of 1:40. See Photo B.

Test load applied to the samples with a reasonable speed until they fail. It is considered that at this point the sample is unable to carry the applied load or has exhibited unacceptable deformation. The load data were recorded and then used for calculation of strength limit state load capacity, and convert to working load capacity. See Photo C, D.

5. Test, Results and Observations

The testing results and observations are set in Table 2 below.

Sample	Status	Test Force (KN)	Observation when Ultimate Load Applied
AMC	Open To Max	12.7	Unacceptable deformation at the location between top plate and inner tube. No crack, collapse or separation of component was observed.
	Close	16.8	Deformation on pin, cap, and the load bearing hole on inner tube. No crack on welding, No collapse or separation of component was observed.

Table 2: Testing Results and Observations

6. Working Load Capacity Conversion

The test method selected is destructive testing to Appendix A, AS3610-1995. Sample size is one.

Based on Table A1 and A2, and A.4.4.3 of AS 3610:1995, we select value of modification factor as 0.15. Further, we select value of sampling factor as 1.9.

The strength limit state load capacity can be obtained from the equation *Ru = X (test data) / 1.9.*
Based on Table 4.5.1 of the same standard, the working load capacity may be converted as:
*L = 0.8 * Ru = 0.8 * test data / 1.9.*

Using the test data in Table 2 and the equations above, the working load capacity for AMC props is converted in Table 3.

Sample	Status	Modification Factor	Sampling Factor	Working Load Capacity (KN)
AMC Prop	Open To Max	0.15	1.9	5.3
	Close	0.15	1.9	7.1

Table 3: Working Load Capacity of Handi Props

An indicative chart for relationship between the Handi Props' heights and samples working load capacities is plotted in Table 4 below.

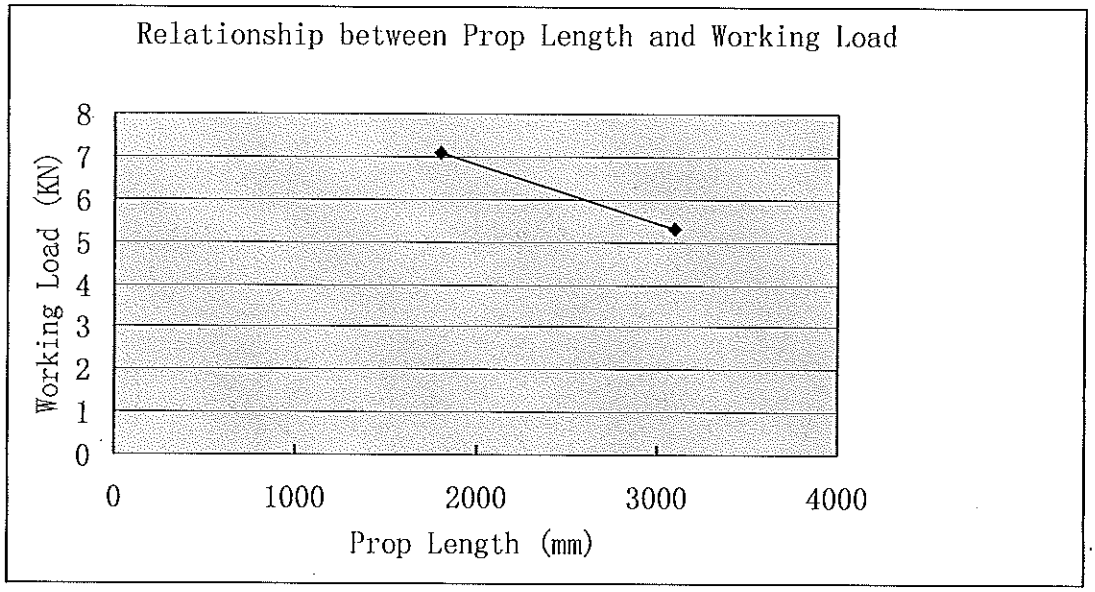

Table 4: Indicative Relationship: Samples Prop Height vs Working Load Capacity

4. Conclusion

Based on the results of the single sample, by destructive test method as specified in AS 3610: 1995, the working load capacities for Handi Props are estimated through testing by this laboratory as specified in Table 3 of this report.

The limitation of the small sampling in this test indicates that the results may not represent working load capacity for all prop products of the size. More reliable information in regards the capacity should be obtained from tests with a reasonable large sampling process.

The test is supervised by

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Signature:

Technician:
Linye Zhai (B. Scien)

Signature:

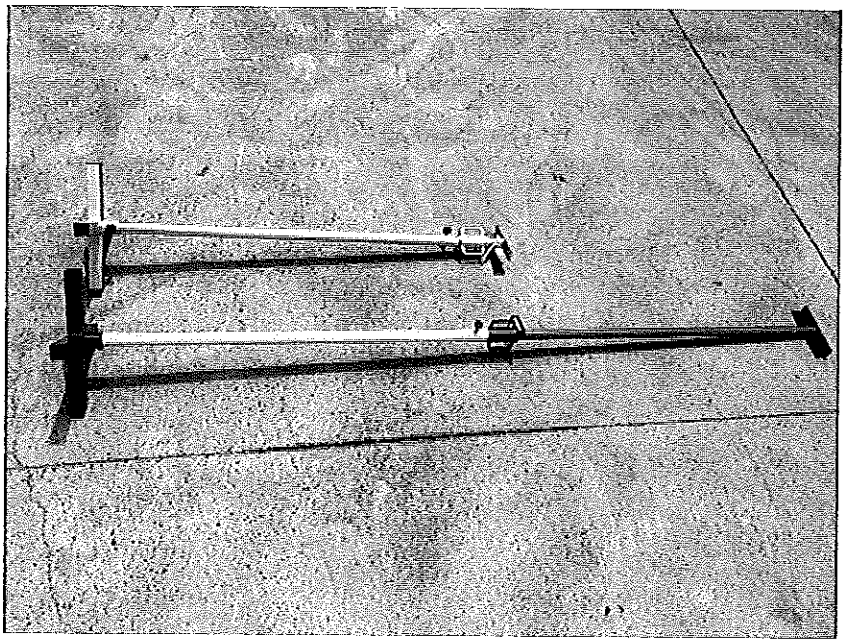

Photo A: Test Samples

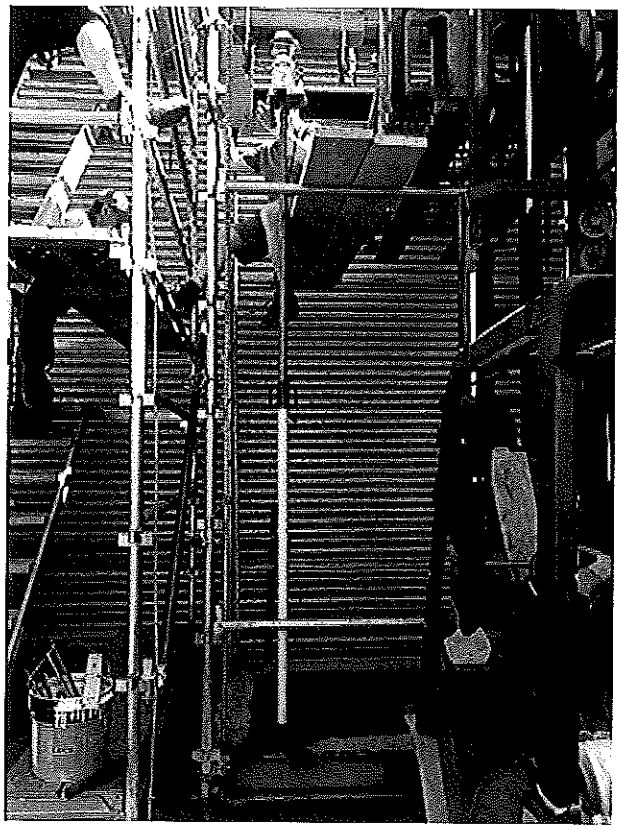

Photo B: Test Setup

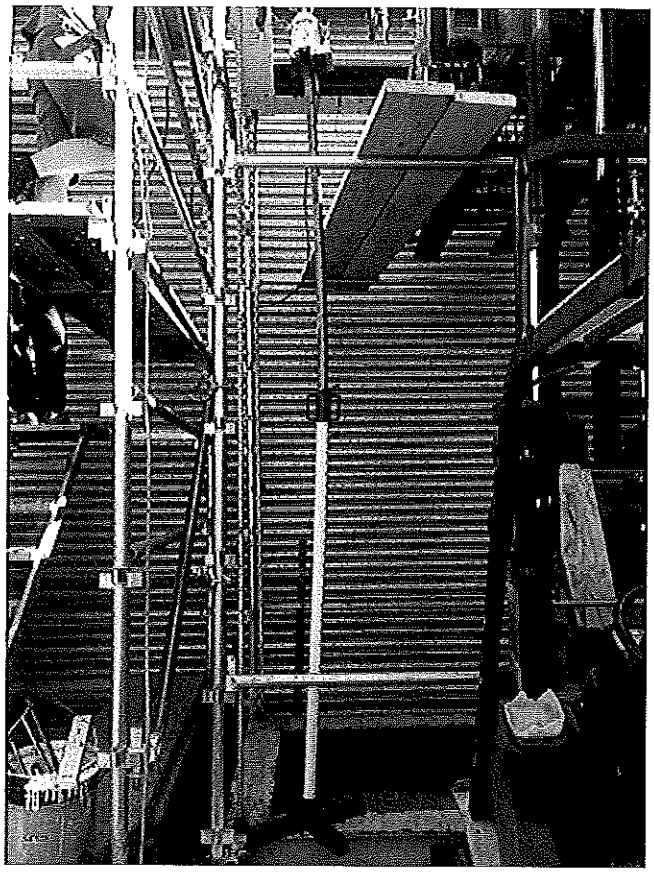

Photo C: Under Ultimate Load - Open

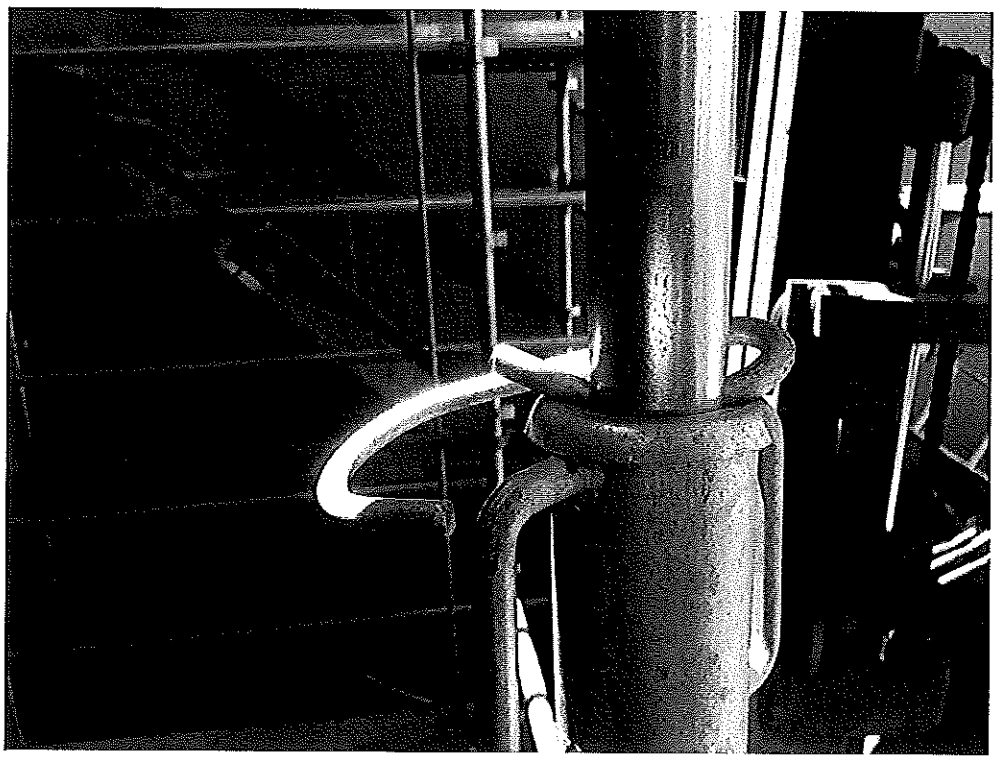

Photo D: Under Ultimate Load - Close