



BUILDING CONSTRUCTION TEST LABORATORY

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LOAD TESTING OF SCAFEAST PROP NO.0 PROPS

FOR

SCAFEAST INTERNATIONAL PTY LTD

April 2018

BY

BUILDING CONSTRUCTION TEST LABORATORY

General Remarks:

The results presented in this report relate only to the samples that were provided for testing and may not relate to other components of a similar design.

All load cells are calibrated by **NATA** accredited services provider

1. Introduction

At the request by Scafeast International Pty Ltd, testings were conducted at 16 and 17 April 2018 on the Scafeast No.0 Props with a view to verify their vertical working load capacity.

The tests were carried out at 6 Gatwood Close, Padstow NSW. The test method was adopted consideration of the Australian Standard AS 3610: 1995, Formwork for concrete.

2. Test Apparatus

| | |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------|
| BC-101 | Compression Load Cell with Digital Reading Device Calibrated by Precise Calibration Services (NATA accredited), Valid to 24 October 2018 |
| BC-101 | Hydraulic Cylinder 220 |
| BC-403 | Universal Test Beam |

3. Samples

The prop samples are shown in Photo 1. The identification details and nominal dimensions of the props were recorded below:

| | |
|--------------|-----------------------------------------------------------------------------|
| I.D Marking: | SCAFEAST 05/17, AS 3610:1995 |
| Lengths: | Closed Configuration (Lowest Extension) – 1140mm Full Extension – 1840mm |
| Inner Tube: | 48.3mm Outside Dia. x 4.0mm Wall Thick |
| Outer Tube: | 60.3mm Outside Dia. x 4.0mm Wall Thick |
| Top Plate: | 150mm x 150mm x 8.0mm Thick |
| Base Plate: | 150mm x 150mm x 8.0mm Thick |
| Shear Pin: | Ø16.0mm |

4. Test Method

Destructive test method was adopted in accordance with AS3610: 1995 Appendix A.

Two samples of prop were tested in full extension state 1840mm long. One sample of prop was tested in closed state 1140mm long. The test sample was setup out of plumb ($B = L/200$) in the test beam. The hydraulic cylinder was placed at the top plate with an eccentricity of 16mm from the centre which was not less than the value calculated in accordance with AS3610: 1995 Clause 4.4.3. The base plate of the props was sat on a 1:40 slope shaped steel block. The test setup is shown in Photo 2.

Test load was increased progressively until the sample failed. The ultimate loads of the samples were recorded and used to calculate the strength limit state load capacity and the working load capacity.

5. Test Results

The test results are shown in table below.

| Sample | Test Length (mm) | Ultimate Load (kN) | Failure Mode |
|--------|------------------|--------------------|--------------------------------------------------|
| 1 | 1840 | 61.5 | Buckling of inner tube and bending of shear pin. |
| 2 | 1840 | 59.3 | Buckling of inner tube and bending of shear pin. |
| 3 | 1140 | 35.3 | Slip of adjusting nut and bending of shear pin. |

Table 1: Test Record

6. Working Load Capacity

According to AS3610: 1995 Appendix A, the strength limit state load capacity and working load capacity is calculated in the table below.

| Status | Average Ultimate Load (kN) | Sample Size | Coefficient of Variation | Sampling Factor | Strength Limit State Load Capacity (kN) | Working Load Capacity (kN) |
|-----------------------|----------------------------|-------------|--------------------------|-----------------|-----------------------------------------|----------------------------|
| Full extension 1840mm | 60.4 | 2 | 0.15 | 1.7 | 35.5 | 23.7 |
| Close 1140mm | 35.3 | 1 | 0.15 | 1.9 | 18.6 | 12.4 |

Table 2: Calculation of Working Load Capacity

7. Conclusion

The samples of Scafeast Prop No.0 tested by this laboratory suggest that:

- For full extension state 1840mm long, the working load capacity is 23.7kN under 16mm eccentricity load.
- For closed state 1140mm long, the working load capacity is 12.4kN under 16mm eccentricity load.

The test is supervised by

Dr. Lida Song

Signature:

B.E., M.E. PhD (Civil Eng), C.P. Eng, NPER (659737), RPEQ (14348)



Technician:

Lang Lin

Signature:

B. Engineering, Civil





Photo 1: Test Samples



Photo 2: Test Setup

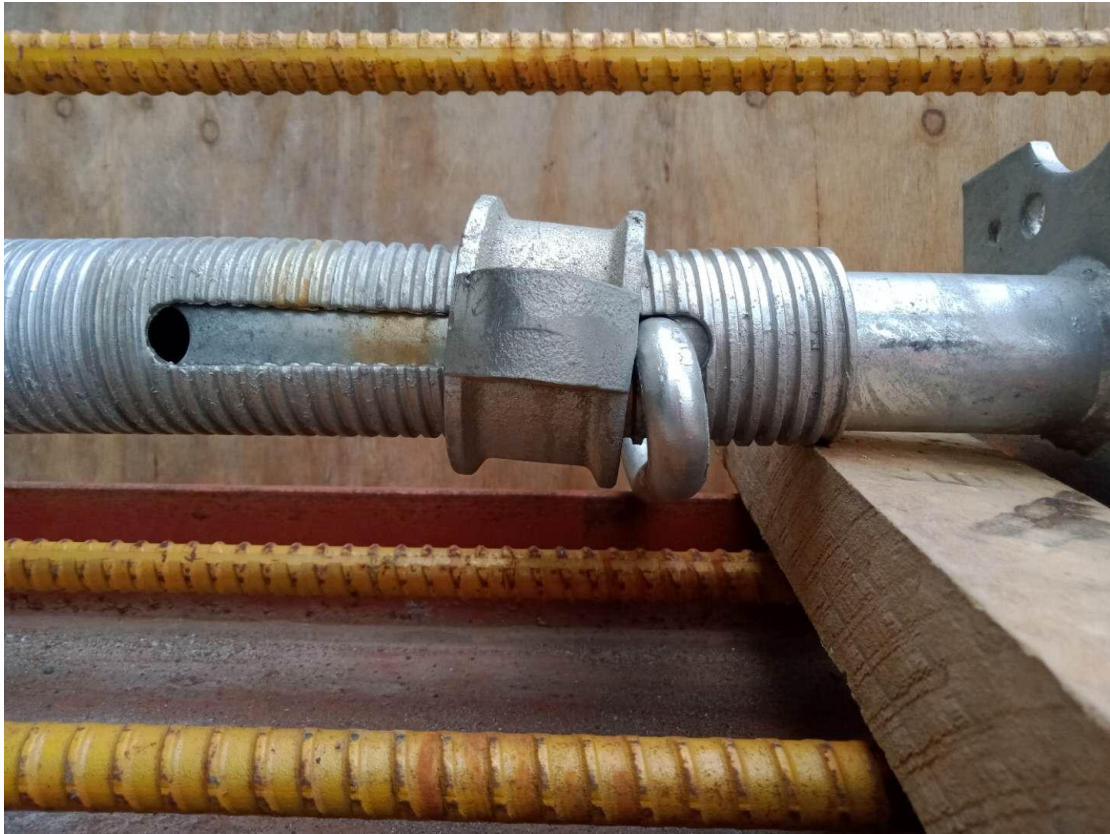


Photo 3: Slip of Adjusting Nut



Photo 4: Buckling of Test Sample