

Test conducted: AS/NZS 1576.3:1995 Scaffolding Part 3: Prefabricated and tube-and-coupler scaffolding
Appendix B Test on assembled frame, modular and tube-and-coupler scaffold

Test procedure:

1. Assemble three bays of the modular scaffold on a firm horizontal foundation. The height shall be three lifts. The scaffold shall be assembled in accordance with the manufacturer's instructions. It is not necessary to incorporate toeboards and guardrails where these interfere with the test loading. Where the scaffold is designed to be used with adjustable legs, they shall be fitted in the fully extended position. At the second lift, at each end, the test structure shall be rigidly tied to a supporting structure. Except where diagonal members form an integral part of each bay in each lift, diagonal bracing shall not be fixed to the members under test load.
2. Apply the following test loads to a pair of standards in the transverse direction simultaneously for 15 min:
 - 2.1 At each of two standards – an axial load of $(2G-W)/2$
Where
G = for one bay, the weight of the scaffold assembled to its design height. This includes accessories normally used with the scaffold.
W = for one bay, the weight of the assembled scaffold erected to the height for the test.
 - 2.2 At one standard – an axial load of $2(0.7Q)$
Where
Q = for one bay, the live load on the working platform, as specified in AS/NZS 1576.1, multiplied by the number of working platforms.
 - 2.3 At the standard not covered by step 2.2 – an axial load of $2(0.3Q)$
Where
Q = for one bay, the live load on the working platform as specified in AS/NZS 1576.1, multiplied by the number of working platforms.
3. Remove the test load and inspect the scaffold for failure or any permanent deformation that would render the scaffold structurally unserviceable.

***** To be continued*****

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TEST REPORT

No. : SC111021185

Date : Nov. 25, 2011

Page: 3 of 8

Table 1 Information of scaffold components

Scaffold components	Unit Mass (kg)
3m standard	18.2
2m standard	12.2
1m standard	6.75
2.4m ledger	9.7
1.2m ledger	5.6
1.2m transom	9.4
3.6m brace	15.2
2.1m brace	9
2.4m toe board	15
2.4m tie bar	5.7
Twoboard bracket	6.25
Toeboard bracket	0.75
Endtoe board clip	1.25
Base jack	6.25
Steel plank	15

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TEST REPORT

No. : SC111021185

Date : Nov. 25, 2011

Page: 4 of 8

Table 2 Self weight of test bay, W

Scaffold components	Number of component used in test bay
3m standard	4
2m standard	4
1m standard	1
2.4m ledger	8
1.2m ledger	2
1.2m transom	6
3.6m brace	0
2.1m brace	0
2.4m toe board	0
2.4m tie bar	0
Twoboard bracket	0
Toeboard bracket	0
Endtoe board clip	0
Base jack	4
Steel plank	6
Self weight of test bay, W	388.55kg

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TEST REPORT

No. : SC111021185

Date : Nov. 25, 2011

Page: 5 of 8

Table 3 Dead load of design bay, G

Scaffold components	Number of components used in design bay
3m standard	4
2m standard	12
1m standard	4
2.4m ledger	12
1.2m ledger	4
1.2m transom	8
3.6m brace	8
2.1m brace	8
2.4m toe board	8
2.4m tie bar	2
Twoboard bracket	2
Toeboard bracket	16
Endtoe board clip	2
Base jack	4
Steel plank	20
Dead load of design bay, G (kg)	1137.2

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TEST REPORT

No. : SC111021185

Date : Nov. 25, 2011

Page: 6 of 8

Table 4 Live load of bay, Q

AS/NZS 1576.1:2010 stipulates that the live load applied to a working platform for a heavy duty working level shall be 6.6kN.

Working platform level	Heavy duty
The number of working platforms in design bay	Four working platforms
Live load of bay, Q	6.6kN x 4 = 2693.9kg

Calculation:

$$\text{Test load B1} = (2G-W)/2 + 2(0.7Q)$$

$$\text{Test load B2} = (2G-W)/2 + 2(0.3Q)$$

For 10m design height

G	W	Q	Test load B1	Test load B2
1137.2kg	388.55kg	2693.9kg	4714.4kg	2559.3kg

Requirement: When tested in accordance with Appendix B, the assembled modular scaffold shall not fail or show any permanent deformation that would render the scaffold structurally unserviceable.

Test result:

Sample status	The sample does not show any visible damage or deformation after test.
Conclusion	Pass

Summary: The supplied modular scaffold assembly complies with the vertical load requirement of AS/NZS 1576.3:1995 Appendix B and by calculation may be used at a maximum design height of 10 meters, 4 working platform with heavy duty working level.

***** To be continued*****

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TEST REPORT

No. : SC111021185

Date : Nov. 25, 2011

Page: 7 of 8

Test photos:



Test arrangement and the erected scaffold

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No. : SC111021185

Date : Nov. 25, 2011

Page: 8 of 8

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The adjustable base jack



The load frame

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