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TEST CERTIFICATE

FOR REPORT MT-15/393

CHANGSHA XIANGJIA METAL MATERIAL CO., LTD.
ROOM 1605-1609, MINGCHENG INTERNATIONAL BVD
NO. 46 RENMIN EAST ROAD, CHANGSHA

EQUIPMENT DESIGNATION: 1.2m, 1.8m and 2.4m Pressed Metal Scaffold Planks

TEST METHOD REFERENCE: AS/NZS 1577-2013

CHANGSHA XIANGJIA METAL MATERIAL CO., LTD, PRESSED METAL
SCAFFOLD PLANKS, AS REPORTED IN MT-15/393-A, B & C, HAVE BEEN LOAD
TESTED FOR A WORKING LOAD LIMIT (WLL) OF
250 KILOGRAMS

AND
COMPLY WITH THE PERFORMANCE REQUIREMENTS FOR:

Stiffness: AS/NZS 1577-2013 Appendix A
Strength: AS/NZS 1577-2013 Appendix B
Sliding: AS/NZS 1577-2013 Appendix C
Sip: AS/NZS 1577-2013 Appendix D

Notes:

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2. This report only indicates compliance of the scaffold planks in their state at the time of testing. It should not be taken as a statement that all similar scaffold planks in all states of repair, would also be found to comply.
3. It remains the responsibility of the client to ensure that the samples tested are representative of the entire product batch.
4. This report only covers the structural integrity of the scaffold planks and not a complete scaffold assembly.
5. MTS shall take no responsibility for the procurement and authenticity of the test planks as described herein.
6. MTS shall take no responsibility for the installation procedures used for the scaffold planks as described herein.
7. MTS shall take no responsibility for the compliance of the scaffold planks as described herein other than for the specific requirements as specified in AS/NZS 1577-2013 Section 2, Appendix A, B, C & D.



ROD WILKIE
TEST ENGINEER
LABORATORY MANAGER
DATE: 30/06/2013

Mechanical Testing

- Tensile
- Compression
- Bend
- Flexure
- Proof Load
- Structures
- Fasteners
- Composites
- Concrete
- Fatigue
- Scaffolds
- Formwork
- Force Calibrations



Report No: MT-15/203-A

STIFFNESS TEST: (2.2.2)

Stiffness testing was conducted on the 23rd of June 2015 in an enclosed environment at the MTS laboratory. Stiffness testing was conducted in accordance with AS/NZS 1577 Appendix A. The plank was simply supported on two tubular rollers over the length of the test span. Each end of the plank was supported across its full load-bearing width. The test load was applied progressively at 50mm from the plank edge at the centre-span. A test load (F_1) of **2kN = 204kg**, was progressively applied and retained for a period of 5 minutes. The corresponding net mid-span deflection of the plank under load was recorded at 3.3mm, less than the maximum allowable deflection of $\text{span}/100 = 12\text{mm}$. The plank did not show any signs of failure or permanent deformation at completion of the test. Therefore, the plank has passed the requirements for stiffness testing.

STRENGTH TEST: (2.2.3)

Strength testing was conducted on the 24th of June 2015 in an enclosed environment at the MTS laboratory. Strength testing was conducted in accordance with AS/NZS 1577 Appendix B. The plank was simply supported on two tubular rollers over the length of the test span (see Fig.2). Each end of the plank was supported across its full load-bearing width. The test load was applied to the middle of the plank at the centre-span. A test load (F_1) of **5kN = 510kg**, was progressively applied and maintained for a period of 5 minutes. The plank was then unloaded and the residual deflection recorded as 0.08mm, less than the maximum allowable of $\text{span}/300 = 4\text{mm}$. The plank was then reloaded until the peak load had been achieved and permanent deformation was visibly evident. The maximum load recorded at the point of failure was **16.03kN = 1,634kg**, greater than the minimum requirement of 5.5kN (561kg). Therefore the plank passed the requirements for strength testing.

SLIDING TEST: (2.2.4)

A sliding test was conducted on the 22nd of June, 2015, in an enclosed environment at the MTS laboratory. Slide testing was conducted in accordance with AS/NZS 1577 Appendix C. The plank was simply supported on two tubular supports over the length of the test span (Fig.3). Each end of the plank was supported across its full load-bearing width. In accordance with AS/NZS 1577 Appendix C, a test mass was loaded across the full width of the plank at mid-span. A sliding load was then applied at mid-thickness and mid-span of the plank, in a direction longitudinal to the span. The test was then repeated with loading in a direction transverse to the span of the plank.

The applied load coinciding with the onset of sliding was recorded at **281 Newtons** in the longitudinal direction and **279 Newtons** in the transverse direction, both greater than the minimum requirement of 250N. The plank therefore passed the requirements for sliding testing.

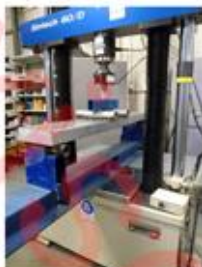


FIG.2
STRENGTH TESTING



FIG.3
SLIDING TEST

IN CONFIDENCE TO THE CLIENT
REPORT NO: MT-15/203-A

PERFORMANCE TESTING OF 1.2M METAL SCAFFOLD PLANKS

CLIENT: CHANGSHA XIANGJIA METAL MATERIAL CO., LTD.
ROOM 1605-1609, MINGCHENG INTERNATIONAL BLD
NO. 46 RENMIN EAST ROAD, CHANGSHA
HUNAN, CHINA

DATE OF TESTING: JUNE 22ND TO JUNE 24TH 2015

DATE OF REPORT: JUNE 30TH 2015

TEST SYNOPSIS:

A consignment of pressed metal scaffold planks, with a nominal length of 1.2m, was delivered to the MTS laboratory for testing (see Fig.1). At the request of the client, testing was to be conducted to determine the 1.2m planks' conformity with the performance requirements of AS/NZS 1577-2013 SCAFFOLD DECKING COMPONENTS. Specifically, testing was conducted in accordance with the following procedures:

2.2.2 Stiffness Test

2.2.3 Strength Test

2.2.4 Sliding Test

2.2.5 Coefficient of Friction Test

In addition to the aforementioned performance tests, dimensional checks were conducted to determine the planks' geometrical properties.

GEOMETRICAL OBSERVATIONS:

Prior to load performance testing, scaffold planks were examined for configuration requirements in accordance with the below referenced clauses of AS/NZS 1577. Dimensional and configurational details of the planks were recorded as follows:

- (Clause 1.5) The length of the planks was 1.2m (nom.) and the width 230mm (nom.): **PASS**
- The planks' steel thickness was measured to be 2mm.
- (Clause 1.9) The planks were stamped with the identification markings 'ADTO AS/NZS 1577-2013 WLL 250kg UDL': **PASS**
- (Clause 6.4) End caps were welded to both ends of the scaffold planks. The end caps were fitted flush to the ends of the planks: **PASS**
- (Clause 6.5) The surface of the planks was perforated with 8.0mm (nom.) circular openings. The perforation openings had a nominal area of 50.3mm²: **PASS**
- (Clause 6.5) All surfaces of the planks were free from burrs and sharp edges: **PASS**
- (Clause 6.6) The planks were fabricated from galvanneal steel sheet to prevent corrosion: **PASS**



FIG.1
1.2M STEEL SCAFFOLD PLANKS



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COEFFICIENT OF FRICTION TEST: (2.2.5)

Coefficient of friction testing was conducted in an enclosed environment at the MTS laboratory in accordance with AS/NZS 1577 Appendix D.

A rubber backed slide-plate was positioned on top of the plank and loaded with a mass (see Fig.4). Frictional force was then applied to the slide-plate in the longitudinal direction until the slide-plate began to slip. The mean frictional force was recorded at 221N. From this data, the coefficient of sliding friction (μ) was calculated to be **0.82**, greater than the minimum requirement of 0.7. The minimum recorded reading for all tests was 0.79. Therefore, the plank passed the requirements for slip testing.



FIG.4
SLIP TESTING

SUMMARY:

As described and reported herein, the CHANGSHA XIANGJIA METAL MATERIAL CO., LTD. pressed metal scaffold planks with a nominal length of 1.2m met the requirements for stiffness, strength, sliding and slip load testing in accordance with the specific requirements of AS/NZS 1577-2013 Appendix A, B, C & D. Furthermore, the dimensional properties as reported herein, confirm that the scaffold planks met the specific geometrical and configurational requirements of AS/NZS 1577-2013 Clauses 1.5, 1.9, 6.4, 6.5 & 6.6.

Notes:

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- (2) This report only tests compliance of the scaffold planks to their state at the time of testing. It should not be taken as a statement that all similar scaffold planks in all states of repair, would also be found to comply.
- (3) It remains the responsibility of the client to ensure that the samples tested are representative of the entire product batch.
- (4) This report only covers the dimensional attributes and structural integrity of the scaffold plank and not a complete scaffold assembly.
- (5) MTS shall take no responsibility for the procurement and authenticity of the test planks as described herein.
- (6) MTS shall take no responsibility for the installation procedures used for the scaffold planks as described herein.
- (7) MTS shall take no responsibility for the compliance of scaffold planks as described herein other than for the specific requirements as specified in AS/NZS 1577-2013 Section 2, Appendix A, Appendix B, Appendix C and Appendix D.


ROD WILKIE
AUTHORISED SIGNATORY


GAVEN VAN DEVENTER
TEST ENGINEER



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