ORGANIZATION FOR TECHNICAL CONFORMITY

REPORT NO.: HQR171215001

TEST REPORT

Report Reference No.: HQR171215001

EN 12811-1:2003

Temporary working equipment-Part 1:Scaffolds-Performance requirements and general design

Contents	1.Total test report 10pages including: 2.Report text: 9 pages 3. Appendix A for product photos : 1 page 4. Appendix B for product drawing : 1 page	
Testing Laboratory name	Organization For Technical Conformity (Shanghai) Ltd	
Applicant's name	Jiangsu Shizhan Group Co., Ltd	
Address	Shicun Industrial Park Xibei Town XIshan district Wuxi city Jiangsu China	
Test specification	---	
Standard	EN 12811-1: 2003	
Non-standard test method	None	
Test item description	Aluminum Scaffolding	
Trade Mark	---	
Model and/or type reference	SZASTB	
Manufacturer	JIANGSU SHIZHAN GROUP CO.,LTD	
Rating(s)	---	
Test result	•Positive	○Negative
Tested by (name and signature)	Sunken	
Approved by (name and signature)	Steve	
Date of issue	Dec. 27, 2017	

Marking plate: only a sample:

JIANGSU SHIZHAN GROUP CO.,LTD

Shicun Industrial Park Xibei Town

Xlshan district Wuxi city Jiangsu China

2017

EN 12811-1

Aluminum Scaffolding

1.03mx2.02mx2.0m

Characteristics	Declared values
Width class	W09
Load class	2
Production period	---

Test Result

PASS

Summary of testing:

This product has been successfully type-tested for conformity to all applicable requirement of

EN 12811-1: 2003

Possible test case verdicts	
- test case does not apply to the test object:	N/A
- test object does meet the requirement:	P (Pass)
- test object does not meet the requirement:	F (Fail)
Testing	
Date of receipt of test item:	Dec.15, 2017
Date (s) of performance of tests:	Dec.18, 2017 to Dec.27, 2017

General remarks:

"(See remark #)" refers to a remark appended to the report.

"(See Appendix #)" refers to an appendix appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

When determining the test result, measurement uncertainty has been considered.

General product information:

Models:

SZASTB

Describe:

Aluminum 6082-T5

Standard with pressed spigot 48.3mm×4.0mm

O-ledger 48.3mm×4.0mm

U-briging ledger Reinforced

U-profile-Aluminum plate

U-ledger reinfored

U-profile &V-profile

Refer to Appendix A—Product Photos

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Clause	Requirement - Test	Result - Remark	Verdict
4	**Materials**		—
4.1	**General** Materials shall fulfill the requirements given in European Standards, where design data are provided. Materials shall be free from any impurities and defects, which may affect their satisfactory use.	Refer to below results No obvious defect	P
4.2	**Specific material requirements**		—
4.2.1	**Steel** Steels of deoxidation type FU (rimming steels) shall not be used.	No steel	N/A
4.2.2	**Aluminium alloys** Loose tubes shall have a minimum nominal 0.2% proof stress of 195N/mm^2 and a minimum nominal wall thickness of 4.0mm. Items used solely for side protection shall have a minimum nominal wall thickness of 2,0 mm. Platform units and their immediate supports shall have a minimum nominal thickness of 2,5 mm	Loose tubes proof stress:207N/mm^2 thickness:4.2mm	P
4.2.3	**Timber and timber based materials** Timber shall be stress graded in accordance with EN 338. If a protective coating is used, it shall not prevent the discovery of defects in the material. Plywood for platform units shall have at least five plies and a minimum thickness of 9 mm. Plywood platform units assembled ready for use shall be capable of retaining a circular steel bar of 25 mm diameter and 300 mm length falling endwise from a height of 1 m. Plywood shall have a good durability with regard to climatic conditions..	No timber materials	N/A
5	**General requirements**		—
5.1	**General** Every area for access and working shall be so arranged as to provide a convenient working place, and to: - protect people from the risk of falling; - provide safe storage of materials and equipment; - protect those below from falling objects. Attention shall be paid to ergonomic considerations. The area shall be fully decked and shall be provided with appropriate side protection (see 5.5) when ready for use. Connections between separate parts shall be effective and easy to monitor. They shall be easy to assemble and secure against accidental disconnection.	Easy to access There are protectors	P
5.2	**Width classes** The width, w, is the full width of the working area including up to 30 mm of the toeboard, see Figure 2. Seven width classes are given in Table 1.	W09	P

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Clause	Requirement - Test	Result - Remark	Verdict
5.3	**Headroom** The minimum clear headroom, h_3, between working areas shall be 1,90 m. The headroom requirements for the height h_{1a} between working areas and transoms or for the height h_{1b} (see Figure 2) between working areas and tie members are given in Table 2.	H1	P
5.4	**Working areas** a) It shall be possible to secure platform units against dangerous displacement e.g. unintended dislodging or uplifting by wind forces. b) Platform units should have a slip-resistant surface. c) The gaps between platform units shall be as small as possible but not exceeding 25 mm. d) Working areas shall be as level as practicable. If the slope exceeds 1 in 5, securely attached full width footholds shall be provided. Except that, where necessary, there may be gaps not exceeding a width of 100 mm in the centre of the footholds to facilitate the use of wheelbarrows.	Not included in this report	N/A
5.5	**Side protection**		—
5.5.2	**General** Working and access areas shall be safeguarded by a side protection consisting of at least a principal guardrail, intermediate side protection and a toeboard. See Figure 3. The toeboard may be dispensed with on stairways. Side protection shall be secured against unintended removal. For structural design requirements, see clause 6.	Not included in this report	N/A
5.5.3	**Intermediate side protection** Intermediate side protection shall be fixed between the principal guardrail and the toeboard.	Not included in this report	N/A
5.5.4	**Toeboard** A toeboard shall be fixed so that its top edge is at least 150 mm above the adjacent level of the working area. Holes and slots in a toeboard shall, except for handling holes be no larger than 25 mm in one direction.	Not included in this report	N/A
5.5.5	**Fencing structures** The area of each hole or slot in fencing structures shall not exceed 100 cm_2. In addition, the horizontal dimension of each hole or horizontal slot shall not exceed 50 mm.	Not included in this report	N/A
5.5.6	**Location of the components of the side protection** The horizontal distance between the outer face of the toeboard and the inner face of the guardrail and all the components of the intermediate side protection shall not exceed 80 mm.	Not included in this report	N/A
5.6	**Cladding** Where cladding of the working scaffold is required, this standard assumes that the scaffold will be clad with either netting or sheeting.	Not included in this report	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
5.7	**Base plates and base jacks**		—
5.7.1	**General** The strength and rigidity of the base plates and base jacks shall be sufficient to ensure that it can transmit the maximum design load from the working scaffold to the foundations. The area of the end plate shall be a minimum of 150 cm^2. The minimum width shall be 120 mm.	Not included in this report	N/A
5.7.2	**Base plates** Base plates made of steel shall conform to EN 74.	Not included in this report	N/A
5.7.3	**Base jacks** Base jacks shall be provided with a centrally positioned adjusting spindle of such dimensions that, in the unloaded condition, the greatest inclination of the axis of the shaft from the axis of the standard does not exceed 2,5 %.	Not included in this report	N/A
5.7.4	**Joints between standards with hollow sections** The overlap length in joints between standards shall be at least 150 mm. It may be reduced to a minimum of 100mm if a locking device is provided.	Not included in this report	N/A
5.8	**Access between levels**		—
5.8.1	**General** Safe and ergonomic means of access shall be provided. The scaffold system shall include provision for access between the different levels. This shall be by inclined ladders or stairs. It shall be within the platform, within a widening of the working scaffold at one bay or in a tower immediately adjacent. Ladders in accordance with EN 131-1 and EN 131-2 may be assumed to satisfy the requirements for access in this standard.	Not included in this report	N/A
5.8.2	**Stairways** To cater for different requirements for stairways this European Standard specifies two classes of stairway dimensions. The dimensions of stair flights shall be in accordance with Figure 4 and the following:	Not included in this report	N/A
6	**Requirements for structural design**		—
6.1	**Basic requirements** Each working scaffold shall be designed, constructed and maintained to ensure that it does not collapse or move unintentionally and so that it can be used safely. This applies at all stages, including erection, modification and until fully dismantled.	Foundation capable Load class: 2	P
6.2	**Actions**		—

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6.2.1	**General** The values specified in 6.2 shall be treated as characteristic values of the actions (loads). There are three main types of loading which need to be considered: a) Permanent loads; these shall include the self weight of the scaffold structure, including all components, such as platforms, fences, fans and other protective structures and any ancillary structures such as hoist towers. b) Variable loads; these shall include service loads (loading on the working area, loads on the side protection) and wind loads and, if appropriate, snow and ice loads (see 6.2.6). c) Accidental loads; the only accidental load specified in this European Standard is the loading according to 6.2.5.1. Loadings given in 6.2.2 and 6.2.5 do not cover actions from people jumping or falling down from a height onto the platform or onto the side protection.	See below results	P
6.2.2	**Loading on the working area** The service loads shall be as specified in Table 3. Each working area shall be capable of supporting the various loadings, q_1, F_1 and F_2, separately but not cumulatively. Only the uniformly distributed load, q_1, has to be carried down to the support of the scaffold structure, for birdcage scaffolds the partial area loads also, see Figure 5d.	Uniform load: 1.5kN/m^2 Concentrated load on 500X500mm: 1,50kN Concentrated load on 200X200mm: 1,00kN No obvious damage	P
6.2.3	**Horizontal working load allowance** In the absence of wind the working scaffold shall be capable of supporting a notional horizontal working load, representing operations during use, acting at all of the levels where the working area is loaded. For each bay considered the notional horizontal load shall be not less than 2,5 % of the total of the uniformly distributed load, q_1, specified in Table 3, on that bay, or 0,3 kN, whichever is the greater. The load shall be assumed to act at the level of the working area and shall be applied separately parallel and perpendicular to the bay.	0.3kN	P

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6.2.4	**Access routes** Except for class 1 working scaffolds, horizontal access routes shall be capable of supporting at least the class 2 service loading, specified in Table 3. When a part of an access route is to be used for working, it shall be capable of supporting the relevant service load prescribed in Table 3. Normally a landing, which is at the same level as a working area but outside of it, need not be capable of supporting the same load.	Not included in this report	N/A
6.2.5	**Loads on the side protection** Any principal guardrail and intermediate guardrail, regardless of its method of support, shall be capable of resisting a point load of 1,25 kN. This also applies to any other side protection component, which replaces principal guardrails and intermediate guardrails such as a fencing structure, which has gaps in excess of 50 mm width.	Not included in this report	N/A
6.2.6	**Snow and ice loads** An allowance for snow and ice loading on a working scaffold may be required by national regulations	Refer to local regulations	N/A
6.2.7	**Wind loads** Wind loads shall be calculated by assuming that there is a velocity pressure on a reference area of the working scaffold, which is in general the projected area in the wind direction.	Not included in this report	N/A
6.2.8	**Dynamic loading** The following figures may be taken as equivalent static loads to represent the excess loading caused by dynamic effects in service conditions.	Not included in this report	N/A
6.2.9	**Load combinations** Each working scaffold structure shall be capable of resisting the worst combinations of loads to which it is likely to be subjected. The conditions on site shall be established and load combinations determined accordingly. For façade scaffolds load combinations are given in 6.2.9.2. These load combinations may also be appropriate for types of working scaffold different from facade scaffolds.	Uniform load, self weight	P
6.3	**Deflections**		—
6.3.1	**Elastic deflection of platform units** When subjected to the concentrated loads specified in Table 3, columns 3 and 4 the elastic deflection of any platform unit shall not exceed 1/100 of its span. Furthermore, when the appropriate concentrated load is applied, the maximum deflection difference between adjacent loaded and unloaded platform units shall not exceed 25 mm.	Not included in this report	N/A

EN 12811-1			
Clause	Requirement - Test	Result - Remark	Verdict
6.3.2	**Elastic deflection of the side protection** Each principal or intermediate guardrail and toeboard, regardless of its span, shall not have an elastic deflection greater than 35 mm, when subjected to the horizontal load specified in 6.2.5.2. This is measured with reference to the supports at the points where the component is fixed.	Not included in this report	N/A
6.3.3	**Deflection of fencing structures** When subjected to the horizontal load specified in 6.2.5.2, the grid of a fencing structure shall not deflect more than 100 mm with reference to its supports. When a fencing structure is combined with a guardrail, the requirements for a guardrail shall be satisfied separately.	Not included in this report	N/A
7	**Product manual** For prefabricated components and systems a manual shall be made available to enable the product to be used safely. For façade scaffolds made of prefabricated components see EN 12810-1	Not included in this report	N/A
8	**Instruction manual** For each type of prefabricated scaffold system the relevant instruction manual should be available on site, and shall include at least the following: a) procedure during erection and dismantling the working scaffold, describing the correct sequence of working steps. This instruction procedure shall include drawings and text; b) scheme and its details; c) loads imposed by the working scaffold on its foundation and on the building structure; d) information about the class of working scaffold, the number of working areas which may be loaded and the permitted height for different conditions; e) detailed information about fixing and dismantling of the components; f) information about tying in working scaffolds. g) any other limitations.	Not included in this report	N/A
9	**Work on site**	Onsite item	N/A
10	**Structural design**	Designing requirements	N/A

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Appendix A Product Photos

**********End of Report**********