TEST REPORT

No. : SHIN2007043449CM
Date : Aug 27, 2020

scan to see the report

SHIN2007043449CM

CUSTOMER NAME: KAIPING TIAN SHENG ZHUO YUE MACHINERY AND EQUIPMENT CO., LTD

ADDRESS: NO.26 WU JIN XIN XU, BA HE TOWN, KAIPING CITY, GUANGDONG PROVINCE, CHINA

Sample Name : RING MODULAR SCAFFOLD SYSTEM

Material and Mark : Q345B

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

****

Test Required : Please see the next page(s)

Ref. Standard : Please see the next page(s)

Date of Receipt : Jul 17, 2020

Testing Start Date : Jul 17, 2020

Testing End Date : Aug 27, 2020

Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
SGS-CSTC Standards Technical
Service (Shanghai)Co., Ltd.

Tiffany Liu
Authorized signatory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国・上海・浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com

TEST REPORT

Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Base Jacks	EN 12811-1:2003 Clause 5.7.1 and Clause 5.7.3 &	See Result	Pass
2	Load Combinations Test	EN 12811-1:2003 Clause 6.2.9	See Result	Pass

Note: Pass : Meet the requirements;
Fail : Does not meet the requirements;
/ : Not Apply to the judgment.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国·上海·浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

TEST REPORT

No. : SHIN2007043449CM
Date : Aug 27, 2020

1. Test Item: Base Jacks

Test Method: EN 12811-1:2003 Clause 5.7.1 and Clause 5.7.3

Test Condition:

Specimen: 150mm×150mm×612mm×Φ38.0mm (length × width × height × diameter), 1pc

Test Result:

Test Item	Test Result	Test Requirement	Conclusion
Base Jacks	The area of end plate is 218cm^2. The width is 150mm	The area of the end plate shall be a minimum of 150cm^2.The minimum width shall be 120mm	Pass
	The inclination of the axis of the shaft from the standard is 1.5%	The inclination of the axis of the shaft from the standard does not exceed 2.5%	Pass
	The minimum overlap length of adjustment is 152mm	The minimum overlap length at any position of adjustment shall be 25% of the total length of the shaft, or 150mm which is greater(150mm)	pass
	The thickness of the endplate is 6.10mm	The thickness of the endplate shall be at least 6 mm	pass

Sample Photo:

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国・上海・浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

2. Test Item: Load Combinations Test

Test Method: EN 12811-1:2003 Clause 6.2.9

Test Condition: See Annex A.

Test Results:

1) Horizontal working load parallel to the bay

Test Item	Test height	Value of Load		Test result	Conclusion
Load combinations (Service condition)	6.575m	Self weight	2393.64kgf	The scaffold was capable of resisting the combination of loads without any visual deformation.	Pass
		Uniformly distributed service load	462kgf		
		50% of the uniformly distributed service load	/		
		Horizontal working load	170kgf		

2) Horizontal working load perpendicular to the bay

Test Item	Test height	Value of Load		Test result	Conclusion
Load combinations (Service condition)	6.575m	Self weight	2393.64kgf	The scaffold was capable of resisting the combination of loads without any visual deformation.	Pass
		Uniformly distributed service load	462kgf		
		50% of the uniformly distributed service load	/		
		Horizontal working load	170kgf		

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Annex A

1. Sample information

Table 1 The weight of designed bay, G_d[Note]

Scaffold components	Unit Mass (kg)	Number of components in design bay (36.575m design height)	The weight of design bay, G_d(kg)
Base Jack	3.80	4	2887.60
Base Collar	1.80	4	
Standard 2.0m	10.70	72	
Standard 1.0m	6.50	4	
Ledger 1.572m	5.40	140	
Diagonal Brace 1.572m×2.0m	8.90	72	
Steel Hook Deck 1.572m×0.32m	10.40	13	
Inclined Ladder 2.0m×0.35m	5.50	18	
U-head Jack	4.60	4	
Stair Guard Rail 1.572m×2.0m	12.10	18	
Internal Stair Guard Rail 1.572m×2.0m	11.20	18	

Note: G_d=for one bay, the self weight of the assembled scaffold at its maximum design height, including all components, such as steel plank, scaffolding standard, base collar and so on.

检验检测专用章 Inspection & Testing Services

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国・上海・浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Table 2 The weight of test bay, G_t[Note]

Scaffold components	Design unit Mass (kg)	Number of components in design bay (6.575m test height)	The weight of design bay, G_d(kg)
Base Jack	3.82	4	493.96
Base Collar	1.81	4	
Standard 2.0m	11.06	12	
Ledger 1.572m	5.47	16	
Diagonal Brace 1.572m×2.0m	8.87	12	
Steel Hook Deck 1.572m×0.32m	10.14	11	
Inclined Ladder 2.0m×0.35m	5.54	3	
U-head Jack	4.15	4	

Note: G_t=for one bay, the weight of the assembled scaffold as erected to the height for the test, including all the components.

Table 3 Service loads on working areas

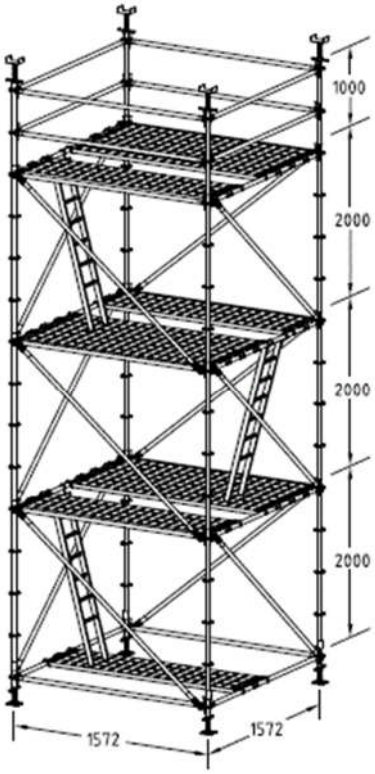
EN 12811-1:2003 stipulates that the service uniformly distributed load applied to a working area for a load class 4 shall be 3.0kN/m^2.

Load class on working area	Class 4
The number of working areas in design bay	One working area
Uniformly distributed load q_1 kN/m^2	3.0

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

2. Scaffold configuration in test:

The maximum design height of scaffold system was 36.575m according to client's instruction while the scaffold assembly installed in test was one bay wide (1572mm) and one bay long (1572mm), by three lifts high, the height of each lift was 2000mm. The maximum extension height of the adjustable leg was 460mm.



Scaffold configuration

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国・上海・浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

3. Load calculation:

1) Self weight of the scaffold:

A vertical load was applied simulating the action of self weight of the scaffold assembly at the maximum design height in one bay on the standards. The load was distributed on the four standards through load beams.

$F_v=G_d- G_t$ =2887.60-493.96=2393.64kgf,

2) Uniformly distributed service load appropriate to the class of the working scaffold specified in Table 3, column 2, acting on the working area of the most unfavourable decked level.

Specification of the steel plank: 1572mm (Length) × 320mm (Width)

Number of steel plank in one working platforms: 3pcs

$F_u=q_1×L×W=3.0×1.572×0.32×3×1000/9.8=462kgf$

3) 50% of the load specified in 2) shall be taken to act on the working area at the next level above or below if a working scaffold has more than one decked level.

Note: The number of working areas in design bay only one.

4) Horizontal working load specified in 6.2.3.

Horizontal working load:

$F_{dh1}=F_u×2.5\%=113N$;

$F_{dh2}=300N$;

$F_{dh}=300N$(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 0.3kN, which is greater.)

$F_{th}=H_d×F_{dh}/H_t=36.575×300/6.575/9.8=170kgf$

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

TEST REPORT

4. Test procedure:

Apply the load combinations to the scaffold assembly, check the scaffold whether it be capable of resisting the worst combinations of loads to which it is likely to be subjected. The horizontal load shall be applied parallel and perpendicular to the bay separately.

Test photos:

Test assembly

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国・上海・浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)

TEST REPORT

	
Horizontal working load perpendicular to the bay	Horizontal working load parallel to the bay

********End of report********

In the territory of the People's Republic of China, the test report without CMA logo expresses the test report shall only be used for client scientific research, teaching, internal quality control, product research and development, etc…and just for client internal reference.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 f(86-21)61191853/68183920 www.sgsgroup.com.cn
中国·上海·浦东康桥东路1159弄69号 邮编:201319 t(86-21)61196300 f(86-21)61191853/68183920 e sgs.china@sgs.com

Member of the SGS Group (SGS SA)