TEST REPORT

No. : SHIN2401000072CM01_EN

Date : 2024-02-22

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SHIN2401000072CM01

Verification: check.sgsonline.com.cn

CUSTOMER NAME:		CORONET GROUP SUZHOU CO., LTD.
ADDRESS:		ASCENDAS XINSU SQUARE, 5 XINGHAN STREET, SUZHOU, JIANGSU, CHINA
Sample Name	:	RINGLOCK SCAFFOLD
Product Specification	:	Please see the below table
Product or Lot No.	:	Please see the below table
Manufacturer	:	Coronet Group Suzhou Co., Ltd.
Material	:	Q345

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.

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Date of Receipt	:	2024-01-08
Testing Period	:	2024-01-08 ~ 2024-02-08
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 Services (Shanghai) Co., Ltd..

Xander Yang

Xander Yang
Authorized signatory

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Ref.No	Product Specification
RV33	Ringlock Standard 1.0m
RV66	Ringlock Standard 2.0m
RH207	Ringlock Ledger 2.07m
RH109	Ringlock Ledger 1.09m
RDB207	Ringlock Diagonal Brace 2.07x2.0m
RDB109	Ringlock Diagonal Brace 1.09x2.0m
ROSP32207	Ringlock Steel Plank 2.07x0.32m
ROSP32109	Ringlock Steel Plank 1.09x0.32m
RTB207	Ringlock Steel Toeboard 2.07m
RTB109	Ringlock Steel Toeboard 1.09m
CSJB600	Ringlock Base Jack 600mm
RSC-L	Ringlock Base Collar 310mm
RUHEAD600	Ringlock U Head Screw Jack 600mm

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Original Sample Photo:

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TEST REPORT

Test conducted:

EN 12810-1:2003 Facade scaffolds made of prefabricated components-Part 1: Products specifications

EN 12811-1:2003 Temporary works equipment Part 1: Scaffolds – Performance requirements and general design

Test Results:

Test Clause	Test Item	Test Requirement	Test Result	Conclusion
6.2.2	Steel tubes (circular)	For 2.0m standard (Φ48.3mm): t (wall thickness) =3.2mm (claimed by client); R (Yield strength) ≥235N/mm^2 Tolerance of the wall thickness: ±10%	t=3.23mm; R=439N/mm^2 Tolerance of the all thickness: 0.9%	Pass
7.3.1	Further requirements-general	a) Every area for access and working shall be so arranged as to provide a convenient working place; b) Attention shall be paid to ergonomic consideration; c) The area shall be fully decked and shall be provided with appropriate side protection; d) Connections between separate parts shall be effective and easy to monitor and easy to assemble and secure against accidental disconnection.	It satisfies the requirement of a), b), c) and d)	Pass

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7.3.1	Further requirements-general	0.9m ≤ w (width of bay) ≤1.2m;
		c (free walking space) ≥500mm;
		b (clear distance between standards) ≥600mm;
		h3(clear head height between working areas) ≥1900mm.
			W=1060mm;
			c=1042mm;
			b=1000mm;
			h_3=1930mm.
				Pass

7.3.2	Side protection	The principal guardrail shall be fixed so that its top surface is 1m or more above the adjacent level of the working area everywhere (absolute minimum height 950mm)	The absolute height is 998mm	Pass
		The distance between the intermediate and adjacent principal d_2≤470mm	d_2 =452mm	Pass
7.3.3	Base jacks	Base jacks shall have a minimum adjustment of 200mm	The base jack can be adjusted 450mm	Pass
		The area of the end plate shall be a minimum of 150 cm^2.The minimum width shall be 120 mm	The area of end plate is 213cm^2. The width is 150mm	Pass
		The inclination of the axis of the shaft from the standard does exceed 2.5%	The inclination of the axis of the shaft from the standard is 2.5%	Pass
		The minimum overlap length at any position of adjustment shall be 25% of the total length of the shaft, or 150mm which is greater	The minimum overlap length of adjustment is 154mm	Pass

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		The thickness of the endplate shall be at least 6 mm	The thickness of the endplate is 8 mm	Pass
7.3.4	Platform	For the versatility of platform height, the scaffold include components to enable: a) The erection of adjacent pairs of standards on surfaces which differ in level by any amount up to 2.0m b) the erection of a single platform at any height between 2.0m and 24.0m	The scaffold includes components to satisfy the requirement of a) and b).	Pass
		a) Platform units should have a slip-resistant surface b) Working area shall be as level as possible.	It satisfies the requirement of a) and b).	Pass
		c) The decking components should close any gap between them wider than 25mm. d) Where a standard separates parts of a platform, the distance between these parts shall not be more than 80mm	c), No decking components provided by the client d), N/A	Pass

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8.1	Actions	All system configurations shall resist the combination of loads without any visual deformation.	See Appendix A	Pass
Test clause conclusion Test clause does not apply to test object Test item does meet the requirement Test item does not meet the requirement			N/A Pass(P) Fail(F)	

Note: Maximum extended height of base jack is 450mm as per client's requirement.

Appendix A: Detail test result of load test and test photos

Test method:

EN 12811-1:2003 Temporary works equipment Part 1: Scaffolds – Performance requirements and general design & Clause 6.2.9 Load combinations test in the service condition.

1. Sample information

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

Scaffold components	Unit Mass (kg)	Number of components in design bay (36.61m design height)	The weight of design bay, G_d(kg)
Ringlock Standard 1.0m	4.86	4	4153.52
Ringlock Standard 2.0m	10.09	72	
Ringlock Ledger 2.07m	8.47	110	
Ringlock Ledger 1.09m	4.76	110	
Ringlock Diagonal Brace 2.07×2.0m	10.10	36	
Ringlock Diagonal Brace 1.09×2.0m	8.41	36	
Ringlock Steel Plank 2.07×0.32m	16.29	54	
Ringlock Steel Toeboard 2.07m	6.50	36	
Ringlock Steel Toeboard 1.09m	3.52	36	
Ringlock Base Jack 600mm	3.30	4	
Ringlock Base Coller 310mm	1.70	4	
Ringlock U Head Screw Jack 600mm	6.39	4	

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.

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

Scaffold components	Unit Mass (kg)	Number of components in test bay (6.61m test height)	The weight of test bay, G_t(kg)
Ringlock Standard 1.0m	/	0	692.83
Ringlock Standard 2.0m	10.14	12	
Ringlock Ledger 2.07m	7.73	20	
Ringlock Ledger 1.09m	4.39	20	
Ringlock Diagonal Brace 2.07×2.0m	9.32	6	
Ringlock Diagonal Brace 1.09×2.0m	8.00	6	
Ringlock Steel Plank 2.07×0.32m	16.31	9	
Ringlock Steel Toeboard 2.07m	5.66	4	
Ringlock Steel Toeboard 1.09m	3.16	4	
Ringlock Base Jack 600mm	3.64	4	
Ringlock Base Coller 310mm	1.67	4	
Ringlock U Head Screw Jack 600mm	5.38	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 6 shall be 6.00kN/m^2.

Load class on working area	Class 6
The number of working area in design bay	Two working areas
Uniformly distributed load q_1 kN/m^2	6

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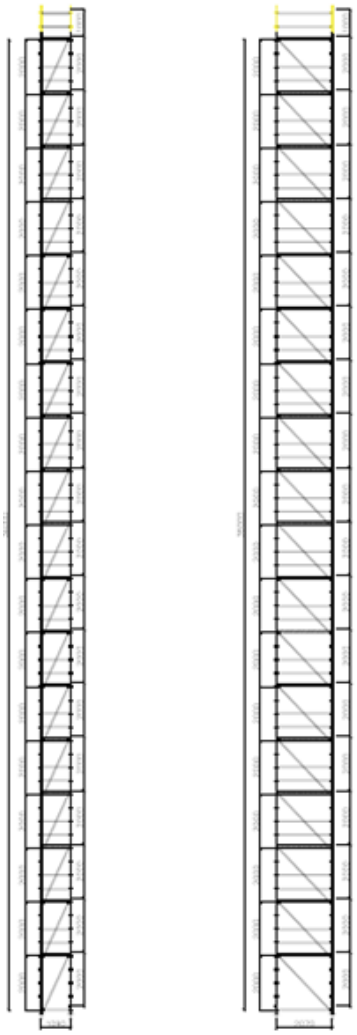
2. Scaffold configuration in test:

The maximum design height of scaffold system was 36.61m according to client's instruction while the scaffold assembly installed in test was one bay wide (1090mm) and one bay long (2070mm), by three lifts high, the height of each lift was 2000mm. The maximum extension height of the adjustable leg was 450mm.



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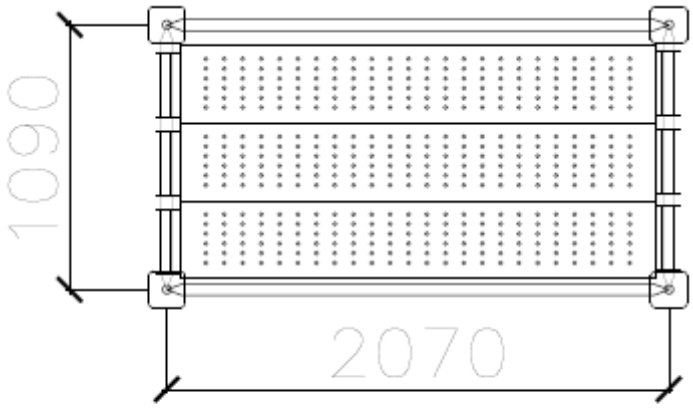

Layout Drawing

Scaffold configuration

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.

$F_v=G_d- G_t$ =4154-693=3461kgf,

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: 2070mm (Length) × 320mm (Width)

Number of steel plank in three working platforms: 6pcs

$F_u=q_1×L×W=6.0×2.07×0.32×6×1000/9.8=2433kgf$

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.

$F_{u50\%}=2433×50\%=1216kgf$

4) Horizontal working load specified in 6.2.3.

Horizontal working load:

$F_{dh1}=F_u\times2.5\%=596N$;

$F_{dh2}=300N$;

$F_{dh}=596N$(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.)

$F_{th}=H_d\times F_{dh}/H_t=36.61\times596/6.61/9.8=337kgf$

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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.

5. Test results:

1) Horizontal working load parallel to the bay

Test Item	Test height	Value of Load		Test result	Requirement in EN 12811-1:2003 Clause 6.2.9.1	Conclusion
Load combinations (Service condition)	6.61m	Self weight	3461kgf	The working scaffold structure shall be capable of resisting the worst combinations of loads to which it is likely to be subjected.	The scaffold was capable of resisting the combination of loads without any visual deformation.	Pass
		Uniformly distributed service load	2433kgf			
		50% of the uniformly distributed service load	1216kgf			
		Horizontal working load	337kgf			

2) Horizontal working load perpendicular to the bay

Test Item	Test height	Value of Load		Test result	Requirement in EN 12811-1:2003 Clause 6.2.9.1	Conclusion
Load combinations (Service condition)	6.61m	Self weight	3461kgf	The working scaffold structure shall be capable of resisting the worst combinations of loads to which it is likely to be subjected.	The scaffold was capable of resisting the combination of loads without any visual deformation.	Pass
		Uniformly distributed service load	2433kgf			
		50% of the uniformly distributed service load	1216kgf			
		Horizontal working load	337kgf			

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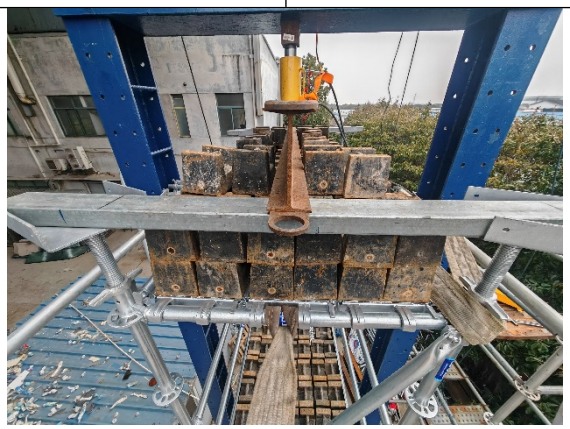
Test Photo(s):

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Horizontal working load perpendicular to the bay</td><td>Horizontal working load parallel to the bay</td></tr>
<tr><td colspan="2">  </td></tr>
<tr><td colspan="2">Test Arrangement</td></tr>
</table>

Unless otherwise stated, this report provides a declaration of conformity according to whether the test results are within the specified limits or specifications without considering the measurement uncertainty.

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

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