TEST REPORT

No. : SHIN2503000511CM01-1_EN
Date : 2025-04-25

Scan to see the report
SHIN2503000511CM01-1
Verification:
check.sgsonline.com.cn

CUSTOMER NAME: NANJING EK METALWORK CO., LTD
ADDRESS: NO.2 GAOXIONG ROAD, LUHE DISTRICT, NANJING CITY, CHINA.

Sample Name : DROP FORGED DOUBLE COUPLER
Material : Ø48.3

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.

****

Date of Receipt : 2025-03-13
Testing Period : 2025-03-13 ~ 2025-04-24
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

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

TEST REPORT

Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Slipping Force	EN 74-1:2022 Clause 7.2.1	See Result	Pass
2	Failure Force	EN 74-1:2022 Clause 7.2.2	See Result	Pass
3	Pull-apart Force	EN 74-1:2022 Clause 7.3	See Result	Pass
4	Cruciform Bending Stiffness and Cruciform Bending Ultimate Moment	EN 74-1:2022 Clause 7.4.1	See Result	Pass
5	Rotational Moment and the Stiffness	EN 74-1:2022 Clause 7.4.2	See Result	Pass

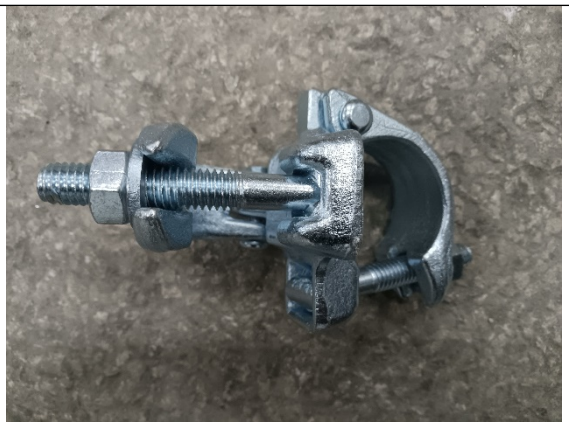
Note: Pass : Meet the requirements;
Fail : Does not meet the requirements;
N/A : Not Apply to the judgment.

Original Sample Photo(s):

Slipping Force / Failure Force / Pull-apart Force / Rotational Moment and the Stiffness - View 1

Slipping Force / Failure Force / Pull-apart Force / Rotational Moment and the Stiffness - View 2

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

	
Cruciform Bending Stiffness and Cruciform Bending Ultimate Moment - View 1	Cruciform Bending Stiffness and Cruciform Bending Ultimate Moment - View 2

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t (86-21) 61196300 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 sgs.china@sgs.com

1. Test Item: Slipping Force

Test Method: EN 74-1:2022 Clause 7.2.1

Test Condition:

Specimen: Right angle coupler, Class B, 10pcs

Test Results:

Test Item	Test Result	Requirement in EN 74-1:2022 Table 8	Conclusion
Slipping Force	$\triangle_1 \leq 7mm$, $F_{s,5\%}$ =20.9kN	$\triangle_1 \leq 7mm$, $F_{s,5\%} \geq 10.0kN$	Pass
	$1mm \leq \triangle_2 \leq 2mm$, $F_{s,5\%}$ =25.0kN	$1mm \leq \triangle_2 \leq 2mm$, $F_{s,5\%} \geq 15.0kN$	

Note:

1) $F_{f,5\%}$: the 5% quantile for the 75% level of confidence.

2) Specification of tube for slipping force: Steel tube of Φ48.3mm×3.2mm (wall thickness)

3) Please see Annex A for details of test results.

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

TEST REPORT

Annex A Details of Test Results

Specimen No.	F_s (kN, $\triangle_1$=7mm)	F_s (kN, 1mm≤$\triangle_2$≤2mm)
1	22.18	26.59
2	23.06	26.35
3	21.97	25.88
4	23.14	27.06
5	22.85	26.37
6	22.91	27.24
7	24.45	28.36
8	23.66	27.42
9	21.73	25.62
10	21.51	26.03
$F_{s,5\%}$	20.9	25.0

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

2. Test Item: Failure Force

Test Method: EN 74-1:2022 Clause 7.2.2

Test Condition:

Specimen: Right angle coupler, Class B, 5pcs

Test Results:

Test Item	Test Result	Requirement in EN 74-1:2022 Table 8	Conclusion
Failure Force	$F_{f,5\%}/\gamma R2$=57.6kN	$F_{f,5\%}/\gamma R2$ ≥30.0kN	Pass

Note:

1) $F_{f,5\%}$: the 5% quantile for the 75% level of confidence.

2) γR2=1.25 according to EN 74-1.

3) Specification of steel bar for failure force: Steel bar of Φ48.3mm.

4) Please see Annex B for details of test results.

Annex B Details of Test Results

Specimen No.	F_f (kN)
11	74.71
12	77.54
13	78.62
14	75.31
15	79.85
$F_{f,5\%}/\gamma R2$	57.6

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t (86-21) 61196300 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 sgs.china@sgs.com

3. Test Item: Pull-apart Force

Test Method: EN 74-1:2022 Clause 7.3

Test Condition:

Specimen: Right angle coupler, Class B, 5pcs

Test Results:

Test Item	Test Result	Requirement in EN 74-1:2022 Table 8	Conclusion
Pull-apart Force	$F_{p,5\%}/\gamma R2$=48.9kN	$F_{p,5\%}/\gamma R2 \geq$30.0kN	Pass

Note:

1) $F_{p,5\%}$: the 5% quantile for the 75% level of confidence.

2) γR2=1.25 according to EN 74-1.

3) Specification of steel bar for pull-apart force: steel bar of Φ48.3mm.

4) Please see Annex C for details of test results.

Annex C Details of Test Results

Specimen No.	F_P (kN)
16	66.85
17	71.96
18	64.27
19	69.83
20	67.24
$F_{p,5\%}/\gamma R2$	48.9

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21) 61196300 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 sgs.china@sgs.com

4. Test Item: Cruciform Bending Stiffness and Cruciform Bending Ultimate Moment

Test Method: EN 74-1:2022 Clause 7.4.1

Test Condition:

Specimen: Right angle coupler, Class B, 10pcs

Test Results:

Test Item	Test Result	Requirement in EN 74-1:2022 Table 8	Conclusion
Cruciform Bending Stiffness and Cruciform Bending Ultimate Moment	M_B/1.65=0.48kNm, C_1=28.9kNm/rad	M_B/1.65=0.48kNm, C_1≥15.0kNm/rad	Pass
	M_B=0.8kNm, C_2=7.5kNm/rad	M_B=0.8kNm, C_2≥6.0kNm/rad	
	$M_{ult,5\%}$=1.6kNm	$M_{ult,5\%}$≥1.6kNm	

Note:

1. $M_{ult,5\%}$: the 5% quantile for the 75% level of confidence.
2. Specification of tube for cruciform bending stiffness and cruciform bending ultimate moment: Steel tube of Φ48.3mm×3.2mm (wall thickness).

   Specification of steel bar for cruciform bending stiffness and cruciform bending ultimate moment: Steel bar of Φ48.3mm.
3. Please see Annex D for details of test results.

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t (86-21) 61196300 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 sgs.china@sgs.com

Annex D Details of Test Results

Sample No.	C_1 (kNm/rad, M_B/1.65=±0.48kNm)	C_2^+ (kNm/rad, M_B=0.8kNm)	C_2^- (kNm/rad, M_B=-0.8kNm)	M_{ult}(kNm)
26	29.35	8.07	-	1.61
27	30.96	7.59	-	1.63
28	29.75	8.45	-	1.60
29	31.43	8.08	-	1.64
30	24.62	8.26	-	1.62
31	30.72	-	6.45	1.59
32	30.52	-	6.61	1.64
33	25.12	-	6.73	1.60
34	27.19	-	7.74	1.61
35	31.56	-	7.41	1.63
-	C_1=28.9	C_2=7.5		$M_{ult,5\%}$=1.6

Test Photo(s):

In Test

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

5. Test Item: Rotational Moment and the Stiffness

Test Method: EN 74-1:2022 Clause 7.4.2

Test Condition:

Specimen: Right angle coupler, Class B, 5pcs

Test Results:

Test Item	Test Result	Requirement in EN 74-1:2022 Table 8	Conclusion
Rotational Moment and the Stiffness	M_T=±0.13kNm, C_φ=61.5kNm/rad	M_T=±0.13kNm, C_φ≥7.5kNm/rad	Pass
	1°≤θ≤2°, $M_{T,5\%}$=0.51kNm	1°≤θ≤2°, $M_{T,5\%}$≥0.13kNm	

Note:

1) $M_{T,5\%}$: the 5% quantile for the 75% level of confidence.
2) Specification of tube for rotational moment and the stiffness: Steel tube of Φ48.3mm×3.2mm (wall thickness).
3) Please see Annex E for details of test results.

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com

TEST REPORT

Annex E Details of Test Results

Sample No.	C_φ(kNm/rad, M_T=±0.13kNm)	M_T (kNm, 1°≤θ≤2°)
21	61.29	0.576
22	61.73	0.647
23	59.38	0.545
24	63.09	0.597
25	62.17	0.618
-	C_φ=61.5	$M_{T,5\%}$=0.51

This test report adds test item, supersedes the test report No. SHIN2503000511CM01_EN dated Apr 01st, 2025, original report will be invalid from today.

The test report shall only be used for clients' scientific research, teaching, internal quality control, product research and development, etc… and just for internal reference.

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********

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China. 201319 t(86-21)61196300 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 sgs.china@sgs.com