

No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 1 of 11



SHANGHAI ROVAL ZINC RICH PAINT CORPORATION **CUSTOMER NAME:**

ADDRESS: NO.393 FENGGONG RD, JIADING MALU SHANGHAI, CHINA

Sample Name **ROVAL Cold Galvanizing Compound**

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.

SGS Ref. No. : 15579461

Date of Receipt Jun 11, 2021

Testing Start Date : Jun 11, 2021

Testing End Date Dec 02, 2021

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.

eysoal wan

Crystal Wan

Authorized signatory





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 2 of 11

Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Cyclic Corrosion Test	ISO 11997-1:2017 Cycle D	See result	/

Note: Pass: Meet the requirements;

Fail: Does not meet the requirements;

/: Not Apply to the judgment.





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 3 of 11

Test Item: Cyclic Corrosion Test Sample Description: Metal panel

Test Method: ISO 11997-1:2017 Cycle D

Test Condition:

Pretreatment: Scribe a line to the substrate with V cut.

① Salt spray test(See note 1), 0.5h

②(30±2)℃, (95±3)%RH, 1.5h

③(50±2)℃, hot dry, 2h

(4)(30±2)°C, warm dry, 2h

Step ①~④ as 1 cycle, total 308 cycles (1848h).

Test Result:

Test period	Sample	Degree of blistering (See note 2)	Degree of flaking (See note 3)	Degree of cracking (See note 4)	Degree of rusting (See note 5)
	1	0(S0)	0(S0)	0(S0)	Ri0
168h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
336h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
504h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
672h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 4 of 11

Test period	Cample	Degree of	Degree of flaking	Degree of	Degree of
Test period	Sample	blistering	(See note 3)	cracking	rusting
		(See note 2)		(See note 4)	(See note 5)
	1	0(S0)	0(S0)	0(S0)	Ri0
840h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1008h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1176h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1344h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1512h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1680h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
1848h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0



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 https://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 sadvised 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 cocument cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forger 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,

No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China 201319 中国・上海・浦东康桥东路1159弄69号 邮编: 201319

t (86-21) 61196300 f (86-21) 68183122/68183920 www.sgsgroup.com.cn t (86-21) 61196300 f (86-21) 68183122/68183920 e sgs.china@sgs.com



No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 5 of 11

Note:

1. Salt spray test:

Concentration of solution collected: (50±5)g/L NaCl

Chamber temperature: (30±2)°C

Volume of salt solution collected: (1.0~2.0)ml/(80cm²·h)

pH of collected solution at (25±2)°C: 6.5~7.2

2. Degree of Blistering refers to ISO 4628-2:2016, rating 0 is the best and rating 5 is the worst. If the coating is assessed as having blisters of quantity 0, size 0, degree of blistering is 0 (S0).

Rating scheme for designating the quantity of defects

Rating	Quantity of defect
0 none, i.e. no detectable defects	
1	very few, i.e. small, barely significant number of defects
2	few, i.e. small but significant number of defects
3	moderate number of defects
4	considerable number of defects
5 dense pattern of defects	

Rating scheme for designating the size of defects

Rating Size of defect	
0	not visible under ×10 magnification
1	only visible under magnification up to ×10
2	just visible with normal corrected vision
3	clearly visible with normal corrected vision (up to 0.5mm)
4	0.5mm to 5mm
5 larger than 5mm	





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 6 of 11

3. Degree of Flaking refers to ISO 4628-5:2016, rating 0 is the best and rating 5 is the worst. If the coating is assessed as having flaked area of quantity 0, size 0, degree of flaking is 0 (S0).

Rating scheme for designating the quantity of flaking

Rating	Flaked area %
0	0
1	0.1
2	0.3
3	1
4	3
5	15

Rating scheme for designating the size of areas exposed by flaking

Rating	Size of flaked areas
ramig	(largest dimension)
0	not visible under ×10 magnification
1	up to 1mm
2	up to 3mm
3	up to 10mm
4	up to 30mm
5	larger than 30mm

4. Degree of Cracking refers to ISO 4628-4:2016, rating 0 is the best and rating 5 is the worst. If the coating is assessed as having cracks of quantity 0, size 0, degree of cracking is 0 (S0).

Rating scheme for designating the quantity of cracks

Rating	Quantity of cracks
0	none, i.e. no detectable cracks
1	very few, i.e. small, barely significant number of cracks
2	few, i.e. small but significant number of cracks
3	moderate number of cracks
4	considerable number of cracks
5	dense pattern of cracks





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 7 of 11

Rating scheme for designating the size of cracks

Rating	Size of cracks
0	not visible under ×10 magnification
1	only visible under magnification up to ×10
2	just visible with normal corrected vision
3	clearly visible with normal corrected vision
4	large cracks generally up to 1mm wide
5	very large cracks generally more than 1mm with

5. Degree of Rusting refers to ISO 4628-3:2016, evaluate according to the rusted area of the substrate, rating Ri 0 is the best and rating Ri 5 is the worst.

Degree of Rusting	Rusted area %
Ri 0	0
Ri 1	0.05
Ri 2	0.5
Ri 3	1
Ri 4	8
Ri 5	40-50



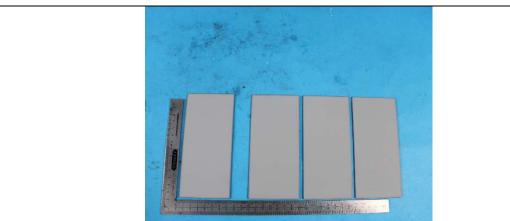


No.: SHIN2112090096MR

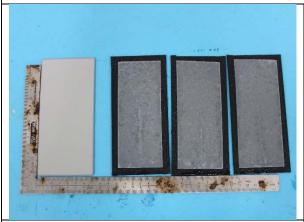
Date: Dec 24, 2021

Page: 8 of 11

Test Photo:



Reference sample Test sample Before test



Reference sample Test sample After test-168h



Reference sample Test sample After test-336h



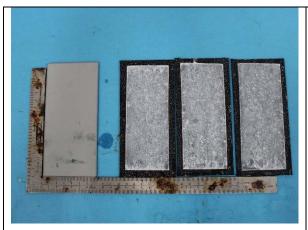
No.69, Block 1159, East Kang Qiao Road, Pudong District, Shanghai, China 201319 中国・上海・浦东康桥东路1159弄69号 邮编: 201319



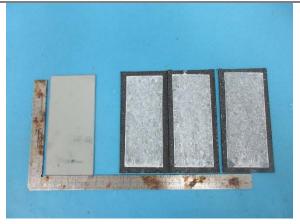
No.: SHIN2112090096MR

Date: Dec 24, 2021

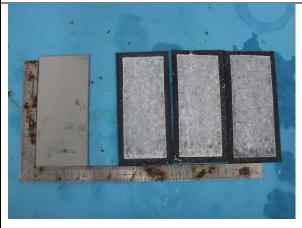
Page: 9 of 11



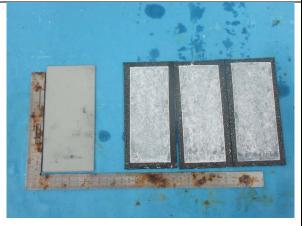
Test sample Reference sample After test-504h



Reference sample Test sample After test-672h



Reference sample Test sample After test-840h



Reference sample Test sample After test-1008h



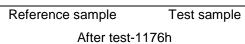


No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 10 of 11







Test sample After test-1344h



Test sample After test-1512h



Test sample After test-1680h





No.: SHIN2112090096MR

Date: Dec 24, 2021

Page: 11 of 11



Test sample After test-1848h

****** 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.

