

No.: SHIN2107051035MR-01

Date: Jan 18, 2022

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

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

2022, 2022 and supersedes the Report No.: SHIN2107051035MR dated: Jan.12 issued by SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd, original report will be invalid from today.

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. : 15629619

Date of Receipt : Jul 21, 2021 : Jul 21, 2021 **Testing Start Date**

Testing End Date Jan 10, 2022

For further details, please refer to the following page(s) Test result(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.

engoal wan

Crystal Wan

Authorized signatory





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Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Neutral Salt Spray Test	ISO 9227:2017	See result	/

Note: Pass: Meet the requirements;

Fail: Does not meet the requirements;

/: Not Apply to the judgment.





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Test Item: Neutral Salt Spray Test Sample Description: Metal part

Pretreatment: Scribe a 0.5mm wide line through coating to the substrate with Erichsen Mod.463

Test Method: ISO 9227:2017

Test Condition:

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

Chamber temperature: (35±2)°C

Volume of salt solution collected: (1.5±0.5) ml/(80cm²·h)

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

Exposure period: 3192h

Test Result:

Exposure		Degree of	Degree of	Degree of	Degree of
•	Sample	Blistering	Flaking	Cracking	Rusting
period		(See note 1)	(See note 2)	(See note 3)	(See note 4)
	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





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Exposure		Degree of	Degree of	Degree of	Degree of
period	Sample	Blistering	Flaking	Cracking	Rusting
period		(See note 1)	(See note 2)	(See note 3)	(See note 4)
	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
	1	0(S0)	0(S0)	0(S0)	Ri0
2016h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0



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Exposure		Degree of	Degree of	Degree of	Degree of
·	Sample	Blistering	Flaking	Cracking	Rusting
period		(See note 1)	(See note 2)	(See note 3)	(See note 4)
	1	0(S0)	0(S0)	0(S0)	Ri0
2184h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
2352h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(\$0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
2616h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(\$0)	0(S0)	0(S0)	Ri0
3120h	2	0(\$0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0
	1	0(S0)	0(S0)	0(S0)	Ri0
3192h	2	0(S0)	0(S0)	0(S0)	Ri0
	3	0(S0)	0(S0)	0(S0)	Ri0

Notes:

1. 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





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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

2. 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

	Size of flaked areas
Rating	(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





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3. 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

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

4. Degree of Rusting refers to ISO 4628-3:2016, 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



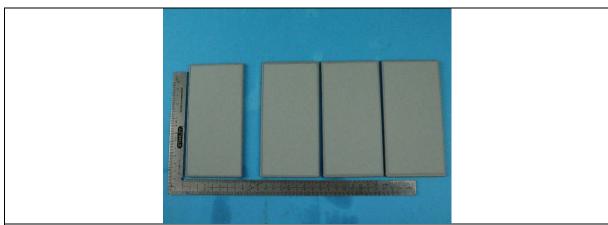


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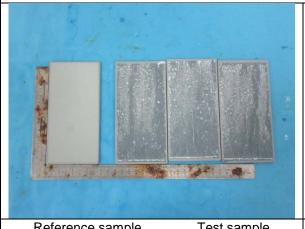
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Test Photo:



Reference sample Test sample Before test



Reference sample Test sample After test -168h



Reference sample Test sample After test -336h



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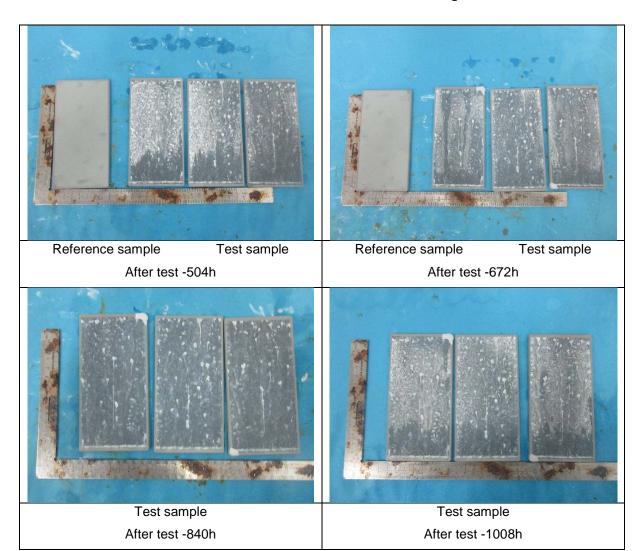
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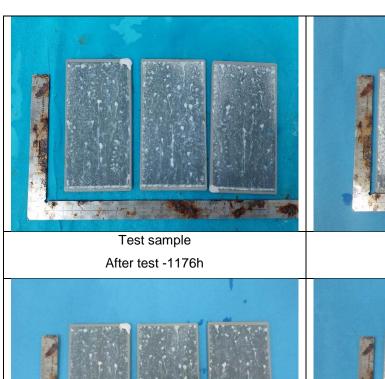




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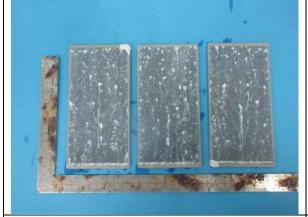
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Test sample After test -1344h



Test sample
After test -1512h



After test -1680h



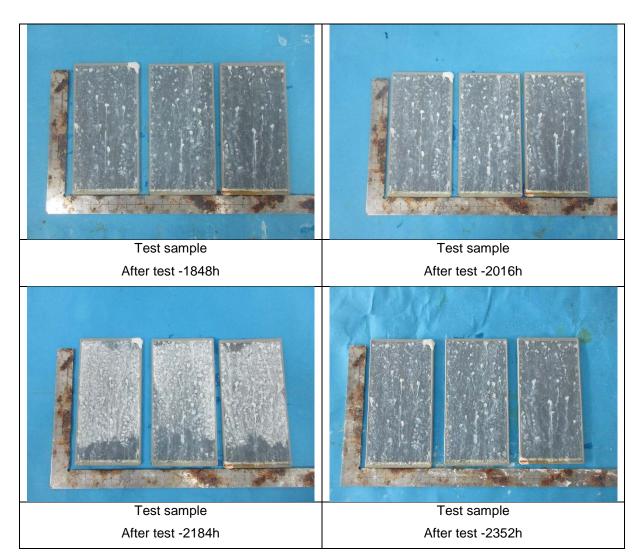
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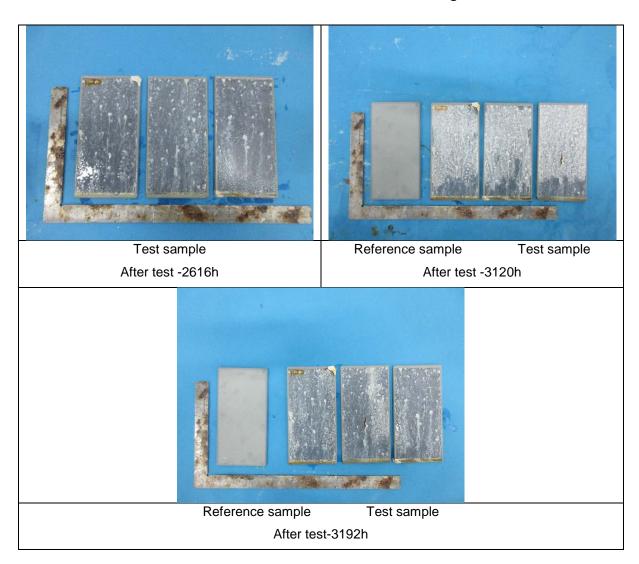




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Note: Report SHIN2107051035MR change to SHIN2107051035MR-01.

Revise Content	This report updates the test result description.	
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End of report'

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