Report No. : 200501272M02-R1

Report Date : 2021-03-26

TEST REPORT

This new report release on 2021-03-26 the report replaces the previous version of the report (no. 200501272M02), the original report 200501272M02 is cancelled at the same time.

APPLICANT	:	WU Xi HUA DONG ZINDN SCIENCE AND TECHNLOLGY CO.,LTD.
ADDRESS OF APPLICANT	:	B ZONE INDUSTRIAL ZONE,GUANLIN TOWN,YIXING CITY,WUXI CITY JIANGSU PROVINCE
CONTACT OF APPLICANT	:	/
RECEIVED DATE	:	2020-09-05
TEST DURATION	:	2020-11-02~2021-02-25
SAMPLE NAME	:	ZINDN Cold sprayed zinc coating
SAMPLE MODEL	:	/

ISSUED BY	:	BUREAU VERITAS ADT (SHANGHAI) CORPORATION
LAB LOCATION	:	NO.829,XINZHUAN ROAD, SONGJIANG DISTRICT, SHANGHAI, CHINA

Edited by:	Verified by:	Approved by:
Weichao Jia	Lyon Zhang	David Wang
Name: Weichao Jia Job Role: Compiler Date: 2021-03-08	Name: Lyon Zhang Job Role: Verifier Date: 2021-03-08	Name: David Wang Job Role: Approver Date: 2021-03-26
2021-03-08	2021-03-08	2021-03-26

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Contents

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SUMMARY OF TEST RESULTS:

No.	Test Items	Test Method	Test Result	Conclusion
1.	Cyclic ageing test	ISO 12944-6:2018 & ISO 2409:2013 & ISO 4628-2:2016 & ISO 4628-3:2016 & ISO 4628-4:2016 & ISO 4628-5:2016	See Page 5~7	Pass

Note: Pass: Test result meets the requirement of standard or client.
Fail: Test result doesn't meet the requirement of standard or client.
/: Not Apply to the judgment.

Conclusion: The samples meets the requirements of C5 Very High for cyclic ageing test in ISO 12944-6:2018.

SAMPLE TABLE:

Sample Name	Sample No.	Sample Size
ZINDN Cold sprayed zinc coating	200501272Q02N01~21010029Q02N06	150*75*3mm;Dry film Thickness ZINDN:2*60 μm

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1 CYCLIC AGEING TEST

Test Method	ISO 12944-6:2018 & ISO 2409:2013 & ISO 4628-2:2016 & ISO 4628-3:2016 & ISO 4628-4:2016 & ISO 4628-5:2016
Test Date	2020-11-02~2021-02-25
Sample No.	200501272Q02N01~21010029Q02N06
Lab Environment	23±2℃，50±5%RH
Sample Check before Test	Sample is normal before test.
Test Condition/ Parameter	a)72 hours of UV and water exposure,according to the standard ISO 16474-3,the conditions are as follows.

Phase	Temperature (ºC)	Wavelength (nm)	Irradiance (W/m²@340nm)	Duration (h:min)
1(UV-A)	60	340	0.83	04:00
2(COND)	50	/	/	04:00

Remark: One cycle for 8 hours, a total of 9 cycles.

b)72-hour neutral salt spray test,according to ISO 9227.

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Serial number	Project	Specification	Measured value
1	Brine strength	（5±1）%	5%
2	PH of the test solution （23℃ ±3℃）	6.5~7.2	7.0
3	Volume of spray	（1.0~2.0）mL/h/80cm²	Left：1.3ml/h/80cm² Right：1.2ml/h/80cm²
4	Test cabinet temperature	（35.0±2.0）℃	35.0℃
5	Dwell time	72 hours	72 hours
6	Layout	The angle of inclination from the center perpendicular：30°	The angle of inclination from the center perpendicular：30°
7	Cleaning water temperature	＜38℃	24.5℃
Remark:All above using deionized water,wash and dry immediately after sample test.			

c)24 hours low temperature exposure test(-20±2)℃

Step	Temperature(℃)	Time(h:min:s)
1	25	00:05:00
2	-20	00:30:00
3	-20	24:00:00
4	25	00:30:00
5	25	00:30:00

Remark: check the samples at the 1 cycles.

Operation:

1.The UV condensation cycle begins with UV and ends with condensation.

2.Clean the test plate with deionized water between salt spray and temperature exposure without drying.

3.The temperature should be reached (-20±2)℃ within 30 minutes at the beginning of low temperature exposure.

4.Expose the test plate for 16 cycles or 2688 hours.

Evaluation criteria	Adhesion=Level 0-2;Blistering=Level 0;Rusting=Level Ri0; Cracking=Level 0;Flaking=Level 0; Average corrosion width≤3mm

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<table>
<tr><td rowspan="6">Test Results</td><td colspan="3"><table>
<tr><th>Test item</th><th>Test purpose</th><th>Test Result</th></tr>
<tr><td>Adhesion Test of Coatings</td><td>Verify paint adhesion requirements</td><td>Level 0</td></tr>
<tr><td>Light Ageing Test-UV Exposure</td><td>To assess the effects of products exposed to solar radiation(uv)</td><td rowspan="3">Blistering=Level 0;
Rusting=Level Ri0;
Cracking=Level 0;
Flaking=Level 0</td></tr>
<tr><td>Salt spray test</td><td>Check the sample’s ability for resisting corrosion of salt spray.</td></tr>
<tr><td>Cold Test</td><td>The purpose of this test is to verify the sample’s ability of storage at low temperature.</td></tr>
<tr><td>Striking corrosion width</td><td>Verify paint adhesion requirements</td><td>Average corrosion width≤3mm</td></tr>
</table></td></tr>
<tr><td colspan="3">Note: The samples are provided by the client.</td></tr>
<tr><td rowspan="4">Equipment Information</td><td>Equipment Name</td><td>Equipment No.</td><td>Calibration Period</td></tr>
<tr><td>QUV Accelerated Weathering Tester</td><td>621-0001</td><td>2020-04-02~2021-04-01</td></tr>
<tr><td>Brine Spray Tester</td><td>913-0008</td><td>2020-05-21~2021-05-20</td></tr>
<tr><td>Comprehensive Test Chamber</td><td>955-0001</td><td>2020-04-29~2021-04-28</td></tr>
</table>

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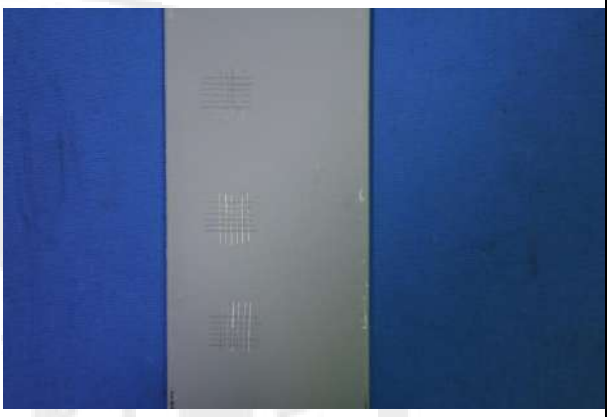
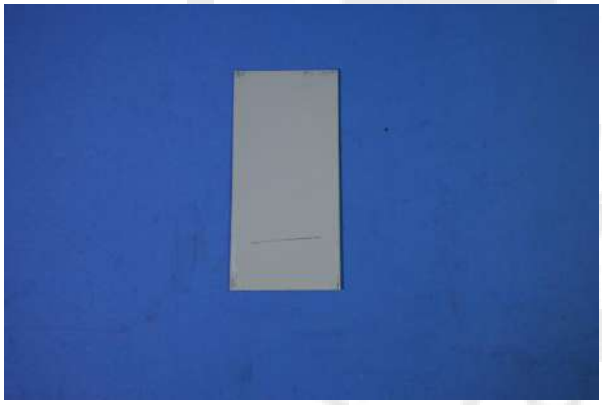
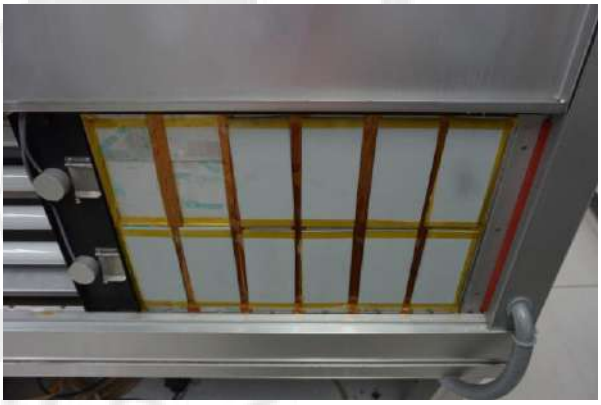
Test Photo	
	
Original sample	Adhesion test
	
Before test	Duringtest photo-1

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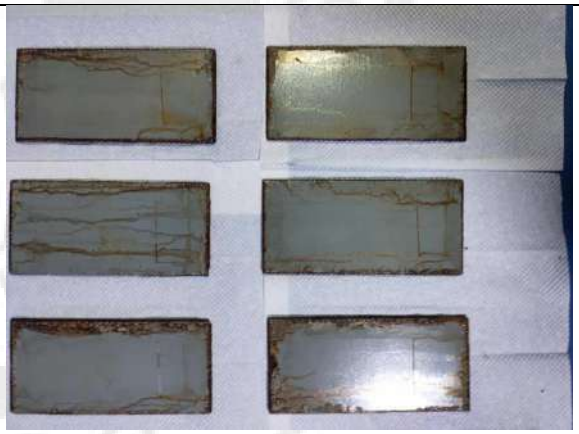
Test Photo	
	
Duringtest photo-2	Duringtest photo-3
	
Duringtest photo-4	After test

---TEST REPORT END ---

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