

## 適合証明書 ISO12944 C5-High

ISO 12944 :2018 Paint and varnishes – Corrosion protection of steel structures by protective paint system  
(塗料とワニス — 防食塗装システムによる鋼構造物の腐食防食)

ISO12944 は保護塗料システムによる腐食から鋼を保護するための国際規格です。  
ローバル、またはエポローバルの 80  $\mu$ m 塗膜は ISO12944 C5-High で指定された技術要件に適合しています。  
つまり下記の表より、

(腐食環境分類:C5) 高湿度且つ腐食の激しい工業地域において、  
(期待耐用年数:High) 15~25 年の耐用年数が期待できる  
ことを意味します。

### 腐食環境分類

分類	腐食レベル	環境例
C1	極めて低い	清潔な環境の保温のある建物(事務所、店、学校、ホテルなど)
C2	低い	結露が生じる保温のない建物(倉庫、体育館など) 低汚染地域、農村地域
C3	中程度	都市および工業の雰囲気、中程度の二酸化汚染雰囲気、低塩分濃度の海岸
C4	高い	工業地帯および中塩分濃度の海岸
<b>C5</b>	<b>非常に高い</b>	<b>高湿度且つ腐食の激しい工業地域</b>
CX	極めて高い	高塩分濃度の海岸および海洋構造物
Im1	淡水浸漬	河川設備、水力発電所
Im2	海水または汽水浸漬	水門、突堤などの構造物のある港湾地域(電気防食なし)
Im3	土中埋設	埋設タンク、鉄杭、鉄製配管
Im4	海水または汽水浸漬	海洋構造物、浸漬構造物(電気防食あり)

### 期待耐用年数

分類	期待年数
Low (L)	~7 年未満
Medium (M)	7~15 年
<b>High (H)</b>	<b>15~25 年</b>
Very High (VH)	25 年以上

注意: 期待耐用年数は「保証期間」ではありません。



ローバル

エポローバル



170014240442 (2020)国认监认字(054)号



中国认可  
国际互认  
检测  
TESTING  
CNAS L0896

# Test Report

Report Number: TW21527W2 (En)

Name of Product	<u>Royal Cold Galvanizing Compound</u>
Entrusting Corporation	<u>Shanghai Royal Zinc Rich Paint Corporation</u>
Test Category	<u>Entrusting Test</u>
Report Issue Date	<u>May 21, 2021</u>



**国家涂料质量监督检验中心**  
**National Quality Supervision Testing Center for Paint**  
**国恒信(常州)检测认证技术有限公司**  
**National GoldSun(Changzhou) Test & Certification Technology Co.,Ltd.**



# National Quality Supervision Testing Center for Paint

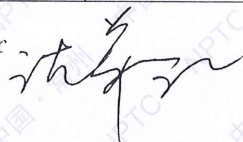
## Test Report

Report Number: TW21527W2 (En)

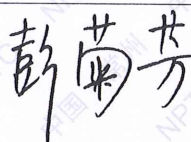
Page 1 of 2

Name of Product	Roval Cold Galvanizing Compound	Number of Sample	TW21527
Manufacturer	Shanghai Roval Zinc Rich Paint Corporation	Trademark	ROVAL
Address Of Entrusting Corporation	No. 393 Fenggong Road, Malu Town, Jiading District, Shanghai	Entrusting Date	February 20, 2021
Tel Of Entrusting Corporation	021-69156584	Samples Arriving Date	February 20, 2021
Sample Description	The appearance of the 16 test panels on steel plates delivered by the entrusting corporation is grey and flat.		
Test Basis	ISO 12944-6:2018 Paints and varnishes — Corrosion protection of steel structures by protective paint systems —Part 6: Laboratory performance test methods (Test regime 1, C5, high )		
Test Date	February 24, 2021 ~ May 11, 2021		
Conclusion	<p>The sample delivered conforms to the technical requirements specified in ISO 12944-6:2018 Paints and varnishes — Corrosion protection of steel structures by protective paint systems —Part 6: Laboratory performance test methods (Test regime 1, C5, high)</p> <p style="text-align: right;">Date of Sign and Issue: May 21, 2021</p>		
Remarks	<p>1. Information provided by the entrusting corporation: the substrate of the test panel is steel plate, of which the surface is sandblasted to Sa2.5, the surface roughness is medium (G), and the film thickness is <math>(80 \pm 10) \mu\text{m}</math>.</p> <p>2. The items tested of ISO 12944-6:2018 are all within the scope of accreditation and authorization of our center.</p> <p>3. The photos of the second and third items before and after tests are shown in the appendix.</p>		

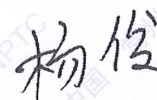
Approver



Checker




Tester




# Test Results:

Report Number: TW21527W2(En)

Page 2 of 2

No.	Test Items	Technical Requirements	Test Results	Item's Conclusion	Remarks
1	Adhesion, MPa	0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5 MPa), minimum pull-off value of 2.5 MPa for each measurement	5.9(5.1~7.1), 100%B	Qualified	ISO 4624:2016
2	Heat and Humidity Test	720h, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), 0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5 MPa), minimum pull-off value of 2.5 MPa for each measurement	720h, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0); adhesion (pull-off test) after heat and humidity test is 5.7MPa (5.1MPa~6.2MPa), 100%B	Qualified	ISO 6270-1:2017 ISO 4624:2016 
3	Neutral salt spray test	1440h, the creepage from the scribe is ≤1.5mm; On the unscribed areas of the paint film, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), 0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5 MPa), minimum pull-off value of 2.5 MPa for each measurement	1440h, there is no creepage from the scribe on the paint film, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), the whitening area is 60%; adhesion (pull-off test) after neutral salt spray test is 5.6MPa(4.7MPa~7.6MPa), 20%A/B, 80% B	Qualified	ISO 9227:2017 ISO 4624:2016
	<b>Blank Below</b>				

----- End of the Report -----



**国恒信**  
**N G T**



230014239439



中国认可  
国际互认  
检测  
TESTING  
CNAS L0896

# Test Report

Report Number: TW233597W1 (En)

<b>Name of Product</b>	<b>Epo Roval Cold Galvanizing Compound</b>
<b>Entrusting Corporation</b>	<b>Shanghai Roval Zinc Rich Paint Corporation</b>
<b>Test Category</b>	<b>Entrusting Test</b>
<b>Report Issue Date</b>	<b>February 8, 2024</b>



**国恒信(常州)检测认证技术有限公司**  
National GoldSun(Changzhou) Test & Certification Technology Co.,Ltd.  
**国家涂料质量检验检测中心**  
National Quality Inspection & Test Center for Paint



# National GoldSun (Changzhou) Test & Certification Technology Co., Ltd.





报告真伪查询

## Test Report

Report Number: TW233597W1 (En)

Page 1 of 2

Name of Product	Epo Roval Cold Galvanizing Compound	Number of Sample	TW233597
Manufacturer	Shanghai Roval Zinc Rich Paint Corporation	Trademark	ROVAL
Address Of Entrusting Corporation	No.393 Fenggong Road, Malu Town, Jiading District, Shanghai	Entrusting Date	October 23, 2023
Tel Of Entrusting Corporation	021-69156584	Samples Arriving Date	October 23, 2023
Sample Description	The appearance of the 10 test panels on steel plates delivered by the entrusting corporation is grey and flat.		
Test Basis	ISO 12944-6:2018 Paints and varnishes—Corrosion protection of steel structures by protective paint systems—Part 6: Laboratory performance test methods(C5, Test regime 1, High)		
Test Date	October 31, 2023~January 11, 2024		
Conclusion	<p>The delivered samples conform to the technical requirements specified in ISO 12944-6:2018 Paints and varnishes—Corrosion protection of steel structures by protective paint systems—Part 6: Laboratory performance test methods(C5, Test regime 1, High).</p> <div style="text-align: center;">   <p>Date of Sign and Issue: February 8, 2024</p> </div>		
Remarks	Information provided by the entrusting corporation: the substrate of the test panels is steel plate, the grade of surface treatment is Sa2.5, the profile grade is "medium (G)", and the dry film thickness of the test panels is (80±10) μm.		

Approved by 曹晓东

Verified by 张平

Prepared by 穆志超

# Test Results:

Report Number: TW233597W1(En)

Page 2 of 2

No.	Test Items	Technical Requirements	Test Results	Item's Conclusion	Remarks
1	Adhesion, MPa	0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5MPa), minimum pull-off value of 2.5MPa for each measurement	6(3.2~6.9), 100%B	Qualified	
2	Resistance to humidity	720h, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0); 0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5MPa), minimum pull-off value of 2.5MPa for each measurement	720h, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), the whitening area is 40%; adhesion (pull-off test) after resistance to humidity is 4MPa (2.6MPa~ 4.8MPa), 100%B	Qualified	
3	Neutral salt spray test	1440h, the creepage from the scribe is $\leq 1.5$ mm; on the unscribed areas of the paint film, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), 0% adhesive failure between steel/metalized steel respectively and the first coat (unless pull-off values are at least 5MPa), minimum pull-off value of 2.5MPa for each measurement	1440h, there is no creepage from the scribe on the paint film; on the unscribed areas of the paint film, blistering 0(S0), rusting Ri0, cracking 0(S0), flaking 0(S0), the whitening area is 80%; adhesion (pull-off test) after neutral salt spray test is 6MPa (5.0MPa~ 6.7MPa), 40%A/B, 60%B	Qualified	
<b>Blank Below</b>					

----- End of the Report -----