

Certificate of conformity ISO12944 C5-High

ISO12944: 2018 Paints and varnishes — Corrosion protection of steel structures by protective paint systems

It is an international standard for the protection of steel against corrosion by protective paints systems. The 80µm coating of ROVAL or EPO ROVAL complies with the technical requirements specified by ISO12944 C5-High. This means that ROVAL or EPO ROVAL can be expected to have a useful life of 15 to 25 years in C5 corrosive environment.

Corrosivity categories

Category	Corrosivity	Examples of typical environments	
C1	Very Low	Inside buildings with clean atmospheres	
C2	Low	Atmospheres with low level of pollution: mostly rural areas Unheated buildings where condensation can occur	
С3	Medium	Urban and industrial atmospheres, moderate sulfur dioxide pollution: coastal areas with low salinity	
C4	High	Industrial areas and coastal areas with moderate salinity	
C5	Very High	Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity	
CX	Extreme	Offshore areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere and subtropical and tropical atmosphere	
lm1	Fresh water	River installations, hydro-electric power plants	
lm2	Sea or brackish water	Immersed structures without cathodic protection (e.g. harbour areas with structures like sluice gates, locks or jetties)	
lm3	Soil	Buried tanks, steel piles, steel pipes	
lm4	Sea or brackish water	Immersed structures with cathodic protection (e.g. offshore structures)	

Expected durability range

Category	Range	
Low (L)	Up to 7 years	
Medium (M)	7-15 years	
High (H)	15-25 years	
Very High (VH)	More than 25 years	

Note: The durability range is not a "guarantee time".



ROVAL

EPO ROVAL







Test Report

Report Number: TW21527W2 (En)

Product Name of

Roval Cold Galvanizing Compound

Entrusting Corporation

Shanghai Roval Zinc Rich Paint Corporation

Test Category

Entrusting Test

Report Issue Date

May 21, 2021



国家涂料质量监督检验中心回题 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

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Name of Produc	ct 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 Entrusti Corporation	ing 021-69156584	Samples Arriving Date	February 20, 2021
Sample Description	The appearance of the 16 test pa entrusting corporation is grey and f	anels on steel plates	s delivered by the
Test Basis	ISO 12944-6:2018 Paints and var structures by protective paint systemethods(Test regime 1,C5, high)	rnishes — Corrosion ms —Part 6: Laborat	protection of steel ory performance test
Test Date	February 24, 2021~May 11, 2021		ALC WIN ARTO
Conclusion	The sample delivered conforms to ISO 12944-6:2018 Paints and varnishes structures by protective paint systemethods(Test regime 1,C5, high)	s — Corrosion prote ms —Part 6: Laborat	etion of etaal
Remarks	1. Information provided by the entrus test panel is steel plate, of which t surface roughness is medium (G), and 2. The items tested of ISO 12944-6:201 accreditation and authorization of ou 3. The photos of the second and third in the appendix.	the surface is sandbithe film thickness is 8 are all within the creater.	lasted to Sa2.5, the is (80 ± 10) µm.

Approver the

Checker 彭带力

Tester

杨俊

Test Results:

Report Number: TW21527W2(En) Page 2 of Item's Test Items Technical Requirements Test Results No. Remarks Conclusion 0% adhesive failure between steel/ metalized steel respectively and the first coat (unless QT. Adhesion, MPa $5.9(5.1\sim7.1)$, 100%BQualified ISO 4624:2016 pull-off values are at least 5 MPa), minimum pull-off value of 2.5 MPa for each measurement 720h, blistering 0(SO). rusting RiO, 720h, blistering cracking 0(SO), 0(S0),rusting RiO, cracking O(SO), flaking O(SO); flaking 0(SO). 0% adhesive failure ISO between steel/ 6270 - 1Heat and 2 metalized adhesion (pull-Qualified 2017 Humidity Test ISO off test) after steel respectively and the first coat (unless heat and humidity 4624:2016 test is 5.7MPa pull-off values are at least 5 MPa), minimum (5.1MPa~6.2MPa), pull-off value of 2.5 100%B MPa for each measurement 1440h, the creepage from the scribe is≤1.5mm; 1440h, there is no On the unscribed areas creepage from the of scribe on the paint the paint film, film, blistering blistering O(SO), rusting RiO, O(SO), rusting RiO, cracking O(SO), cracking O(SO), flaking O(SO), the flaking 0(SO), Neutral salt ISO 9227:2017 3 whitening area is Qualified spray test 0% adhesive failure ISO 4624:2016 60%; adhesion (pullbetween steel/ off test) after metalized neutral steel respectively and salt spray test is 5.6MPa(4.7MPa~ the first coat (unless pull-off values are at 7.6MPa), 20%A/B, 80% least 5 MPa), minimum pull-off value of 2.5 MPa for each measurement Blank Below.









Test Report

Report Number: TW233597W1 (En)

Name of Product

Epo Roval Cold Galvanizing

Compound

Entrusting Corporation

Shanghai Roval Zinc Rich Paint

Corporation

Test Category

Entrusting Test

Report Issue Date

February 8, 2024





国恒信(常州)检测决证技术有限公司 回磁型图 National GoldSun(Changelion) Test & Certification Technology Co., Ltd. 家涂料质量检验检测 National Quality Inspection & Test Center for Paint



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

Test Report



Page 1 of 2

report number. 1 1120	70031 HI (DII)		rage Tor 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 parentrusting corporation is grey and fl		delivered by the
7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- X - X	
	ON (Mr. 1882)		
Test Basis	ISO 12944-6:2018 Paints and varni structures by protective paint system methods (C5, Test regime 1, High)		
- 4° - 2-	- K - 14 - 14 - 14 - 14 - 14 - 14 - 14 -		, % 4 <u>X</u>
	8, V., YO V.		
Test Date	October 31, 2023~January 11, 2024		
TOST Date	January II, 2021		
W. 1/10		· . A	
	XO (1) (1)		
	The delivered samples conform to	the technical requi	rements energified in
	ISO 12944-6:2018 Paints and varnishes	Corrosion protect	ion of steel
Conclusion	structures by protective paint system	s—Part 6: Laborato	ry performance test
11, 17,	methods (C5, Test regime 1, High)	1	1000
		1 3	
	Land Control of the C	74 1.111 -14	TEN
		"粉专用草"。	心心的 专用音 /
		Date of Sign	and Issue: February
	X0 - # 11	2021	
	21, 21, X.		
	Information provided by the entru	sting corporation:	the substrate of the
Remarks	test panels is steel plate, the grad profile grade is "medium (G)", and the is $(80\pm10) \mu m$.	le of surface treatm ne dry film thicknes	ent is Sa2.5, the s of the test panels
	<u> </u>		
	\$, 10 x, 4,		
	10 O. May 7/20 Mg		
	AC (A) AC		

Approved by

Report Number: TW233597W1 (En)

Verified by

Prepared by

Test Results:

Report Number: TW233597W1 (En) Page 2 of 2 Technical Item's Test Items Test Results Remarks No. Conclusion Requirements 0% adhesive failure between steel/ metalized steel respectively and the first coat 6(3.2~6.9), 100%B Adhesion, MPa Qualified (unless pull-off 01 values are at least 5MPa), minimum pull-off value of 2.5MPa for each measurement 720h, blistering 0 (S0), rusting RiO, cracking O(SO), flaking O(SO); 0% 720h, blistering 0 (S0), rusting RiO, adhesive failure cracking 0(S0), flaking O(SO), the between steel/ metalized steel whitening area is Qualified Resistance to 2 respectively and 40%; adhesion humidity the first coat (pull-off test) (unless pull-off after resistance to humidity is 4MPa (2.6MPa~ 4.8MPa), values are at least 5MPa), minimum pull-off value of 100%B 2.5MPa for each measurement 1440h, the creepage from the scribe 1440h, there is no is≤1.5mm; on the creepage from the unscribed areas of scribe on the paint the paint film. film; on the blistering O(SO), unscribed areas of rusting RiO, the paint film, cracking 0(S0), flaking 0(S0), 0% blistering O(SO), rusting RiO, cracking O(SO), flaking O(SO), the Neutral salt spray adhesive failure Qualified 3 between steel/ test metalized steel whitening area is respectively and 80%; adhesion the first coat (pull-off test) (unless pull-off after neutral salt values are at least spray test is 6MPa 5MPa), minimum (5.0MPa~ 6.7MPa), pull-off value of 40%A/B, 60%B 2.5MPa for each measurement Blank Below

---- End of the Report