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REPORT

Testing of Zingametall system Zinga 2x 60 micrometer according to ISO 12944-9 Im4

Haarlem, 8 May 2018

Client : Zingametall bvba
Industriepark Rozenstraat 4
9810 EKE Belgium
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Project number : 20060103

Report number : LAB18-0184-REP

CONTENTS

1. INTRODUCTION

By order of Zingametall bvba in Eke, Belgium, The Centrum voor Onderzoek en Technisch Advies (COT BV) has tested the system Zinga 2 X 60 µm according to ISO 12944-9 Im4.

The order has been given in the letter dated 18-08-2006 with reference Testen/Algemeen/COT/2/1-SD.

2. GENERAL DATA

Samples :

	Batch number	COT sample number
Test panels,		
applied with the system: Zinga, 2x 60 µm	--	22-08-06/667

test panels, size : 150 x 75 x 5 mm
150 x 300 x 5 mm

COT project number : 20060103

3. PAINT APPLICATION AND CURING

The coating system was applied on the test panels by Zingametall bvba.

Dry film thickness: Zinga: 2x 60 µm

After curing the dry film thickness of the paint system has been measured on each panel, after which the tests have been started.

4. PERFORMANCE TESTS

4.1 Seawater immersion

The fully cured coating system has been mechanically scribed horizontal down to bare metal. The scratch line is 2 mm wide and 50 mm long. The system has been immersed in synthetic seawater (according to ISO 15711) at 40°C during 4200 hours according to ISO 2812-2.

4.2 Cathodic disbonding

Cathodic disbonding has been determined according to ISO 20340 (ISO 15711). After 6 months exposure time the maximum disbonding is measured.

4.3 Adhesion test

The adhesion before and after the seawater immersion test has been determined by a pneumatic adhesion tester in accordance with ISO 4624. The coating surface and the dolly have been sanded lightly and a epoxy adhesive has been applied. After curing of the adhesive and prior to testing, the coating has been scratched around the dolly down to the bare metal. Three trials have been done and the average value has been reported.

5. REQUIREMENTS

5.1 Immersion test

After exposure to the specified time, the test panels shall comply with the following requirements:

Method		Requirements
--	Corrosion creep from scribe*	< 3.0 millimetres
ISO 4628-2	Blistering	0
ISO 4628-3	Rusting	0
ISO 4628-4	Cracking	0
ISO 4628-5	Flaking	0
ISO 4624	Adhesion	min. 5.0 MPa, max 50 % reduction from original value

* The corrosion creep is calculated from the equation: M=(C-W)/2, where
M = corrosion creep
C = average of the nine measurements
W = the original width of the scribe.

5.2 Cathodic disbonding

After exposure to the specified time, the test panels shall show no disbonding around the holiday with an equivalent diameter >20 mm.

6. RESULTS

6.1 Original adhesion value

The original Adhesion value is 4.7±0.1 MPa

6.2 Seawater immersion

Exposure Time: 4200 hours

Table 1. Results Immersion test

	Panel 1	Panel 2	Panel 3
Dry film thickness (µm)	146±9	174±8	149±14
Corrosion creep from scribe (mm)	0	0	0
ISO 4628-2 Blistering	0	0	0
ISO 4628-3 Rusting	0	0	0
ISO 4628-4 Cracking	0	0	0
ISO 4628-5 Flaking	0	0	0
ISO 4624 Adhesion (MPa)	4.7±0.1	5.1±0.1	5.0±0.0

6.3 Cathodic Disbonding Test (6 months)

Maximum disbonding ECD panel 1: 0 mm
Maximum disbonding ECD panel 2: 0 mm
Maximum disbonding ECD panel 3: 0 mm

7. CONCLUSION

The system Zinga, dry film thickness 60/60 µm, meets the evaluated requirements of ISO 12944-9 Im4.

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