



REPORT

Testing of System 3 according to various
Items of Norsok Standard M-501, Rev. 4

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RB/MH

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ANNEX: FT-IR Spectra



1. INTRODUCTION

By order of MC Technology Belgium BVBA at Haasdonk, Centrum voor Onderzoek en Technisch advies (COT BV) has carried out tests according to the Norsok Standard M-501, Rev 4.

2. GENERAL DATA

	Sample	Colour	Batch number	COT sample number
1st coat	MCU-Aluprime	Grey	104.11	10-04-01/226
2nd coat	MCU-Ferroguard	Black	022.32	10-04-01/222
3rd coat	MCU-Ferroguard	Black	022.32	10-04-01/222

3. SUSTRATE

Mild steel panels, thickness 5 mm, blast cleaned to surface preparation grade Sa 2½ with titanium cast-steel alloy grit, size 0.4 - 1.1 mm.

Roughness: Ra : 9 - 13 micrometers
Rz : 55 - 65 micrometers
Rmax : 70 - 75 micrometers

Maximum content of soluble impurities : Less than the conductivity of 20 mg/m² NaCl
Water Condensation Test panels : Dimensions 100 x 150 mm
Cyclic Test panels : Dimensions 75 x 150 mm
Cathodic Disbonding Test panels : Dimensions 100 x 300 mm

4. PAINT APPLICATION AND CURING

The coatings have been sprayed according to the recommendations of the manufacturer.

Dry film thickness: 350 µm
1st coat MCU-Aluprime: 50 µm
2nd coat MCU-Ferroguard: 150 µm
3rd coat MCU-Ferroguard: 150 µm

After 3 weeks curing at 23 ± 2°C and 50 ± 5% R.H. the dry film thickness of the paint system have been measured on each panel, after which the tests have been started.

5. CATHODIC DISBONDING TEST -ASTM G8

Cathodic disbanding has been determined according to ASTM G8. After 30 days exposure time the maximum disbanding will be less than 10 millimeters.



6. REQUIREMENTS

Each coating product to be qualified shall be identified by the following:

1. Infrared scan (fingerprint)
2. Specific gravity of base and curing agent (ref. ISO 2811)
3. Ash content (ASTM D1650) volatile and non-volatile matters (ISO 3251) of each component.

Before and after exposure to the specified time, the test panels shall comply with the following requirements:

Method		Requirements
ISO 4628-2	Blistering	0
ISO 4628-3	Rusting	Ri 0
ISO 4628-4	Cracking	0
ISO 4628-5	Flaking	0
ISO 4624	Adhesion	Min 5.0 MPa, max 50 % reduction from original value

For the Cyclic Test corrosion creep from the scratch shall not exceed 3.0 millimeters.

7. RESULTS

7.1 Analysis

Infrared scan

See annex

	MCU-Aluprime	MCU-Ferrogard
Specific Gravity kg/dm ³	1.10	1.58
% ash content	19	48
% volatile matter	69	78
% non volatile matter	31	22



7.2 Cathodic Disbonding Test

Disbonding
- panel 1: 6 mm
- panel 2: 6 mm
- panel 3: 5,5 mm

8. SUMMARY OF TEST RESULTS

Test	Requirement	Result	Pass/Fail
Cathodic Disbonding Test	< 10 mm disbonding	max. 6 mm disbonding	Pass

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