COT bv
Independent advice, research and management for construction and industry

Civil projects
Corrosionprotection
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**REPORT**

Testing of the system
MCU-ALUPRIME / MCU-MIOMASTIC / MCU-TOPCOAT
according to various tests of Norsok M-501, Edition 6, System 1

Haarlem, January 13th, 2014

| | | |
|---|---|---|
| **Client** | : | MCU Coatings International s.l.<br>Spain<br>Contact person: Mr. Peter Lytens |
| **Project number:** | : | 20110685 |
| **Report number** | : | LAB14-0014-REP |
| **Handled by** | : | Mr. N. Blokker |

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# 1 INTRODUCTION

## 1.1 Order

By order of MCU Coatings International s.l. in Spain, the Centrum voor Onderzoek en Technisch advies (COT bv) in Haarlem, The Netherlands, has tested the system MCU-Aluprime / MCU-Miomastic / MCU-Topcoat according to Norsok M-501, Edition 6, System 1, no tidal or splash zones.

## 1.2 Samples

*Table 1: Paint products*

| Product name | COT sample number | Batch number | Colour | Received |
|---|---|---|---|---|
| MCU-Aluprime 8546 | 22-03-12/0227 | 0811111-SL | Grey | 22-03-2012 |
| MCU-Miomastic 8544 | 22-03-12/0224 | 1101121-SL | Beige | |
| MCU-Topcoat 8480 | 22-03-12/0226 | 1201121-SL | White | |
| MCU-SOLVENT 7283 | 22-03-12/0229 | 202121 | - | |

# 2 PROCEDURE

The system has been applied at, and by COT by airless application on grit blasted steel panels (Sa3, Ra 11 ± 2; size 75 x 150 x 5 mm).

All layers have been applied at 20 ± 4 °C and 40 ± 5 % relative humidity between 11 and 14 June 2012.

*Table 2: Application data*

| System | Required dft (µm) | Volume solids (%) | Wet film thickness wft (µm) | Thinner (%) | Pressure (bar) | Nozzle size |
|---|---|---|---|---|---|---|
| 1st coat MCU-Aluprime | 100 | 76 | 130 | - | 150 | 0.019" |
| 2nd coat MCU-Miomastic | 125 | 76 | 165 | - | 150 | 0.019" |
| 3rd coat MCU-Topcoat | 75 | 62 | 120 | - | 150 | 0.019" |

The following tests have been performed:

*Table 3: Tests*

| Test | Method |
|---|---|
| Ageing resistance | ISO 20340, 4200 hrs |
| Overcoatability and drying | Norsok M-501 |
| Adhesion | ISO 4624 (pull-off test) |

The tests have been performed in triplicate; the average value (avg) and the standard deviation (std) have been reported.

At the end of the test, photographs have been taken of the exposed panels (see Annex I).

The tests have been performed in the period between July 2012 and January 2013.

## 3 RESULTS

*Table 4: Performance tests (COT sample number 22-03-12/0227, 22-03-12/0224, 22-03-12/0226)*

| Coating test | Panel number | Dry film thickness* (µm) | Results | Adhesion ISO 4624 (MPa) | Requirement | Test date |
|---|---|---|---|---|---|---|
| Ageing test ISO 20340 | 2 | 333 ± 12 | 3.8 mm corrosion | 12.1 ± 0.1 | Corrosion at scribe ≤ 8.0 mm. No blisters, rusting, flaking or cracking (ISO 4628). Adhesion >5.0 MPa (ISO 4624) | July 2012 till January 2013 |
| | 4 | 362 ± 39 | 3.7 mm corrosion | 11.5 ± 0.8 | | |
| | 6 | 360 ± 34 | 4.0 mm corrosion | 12.3 ± 0.4 | | |
| Overcoatability after ageing test without mechanical treatment | 2 | 333 ± 12 | Good | 12.0 ± 0.2 | Minimum adhesion 5.0 MPa | January 2013 |
| | 4 | 362 ± 39 | Good | 12.3 ± 0.1 | | |
| | 6 | 360 ± 34 | Good | 12.3 ± 0.4 | | |
| Initial Adhesion ISO 4624 | 13 | 369 ± 37 | -- | 14.6 ± 2.0 | Minimum 5.0 MPa | August 2012 |
| | 14 | 381 ± 28 | -- | 13.2 ± 2.0 | | |
| | 15 | 413 ± 51 | -- | 11.2 ± 0.5 | | |
| Total layer thickness | Avg. all panels | 371 ± 23 | -- | -- | -- | July 2012 |
| Colour | | | White | | | |

*) Determined by COT according to ISO 2178

## 4 CONCLUSION

The system MCU-Aluprime / MCU-Miomastic / MCU-Topcoat meets the requirements of Norsok M-501, Edition 6, System 1, no tidal or splash zones.

CENTRUM VOOR ONDERZOEK
EN TECHNISCH ADVIES (COT)

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**ANNEX**

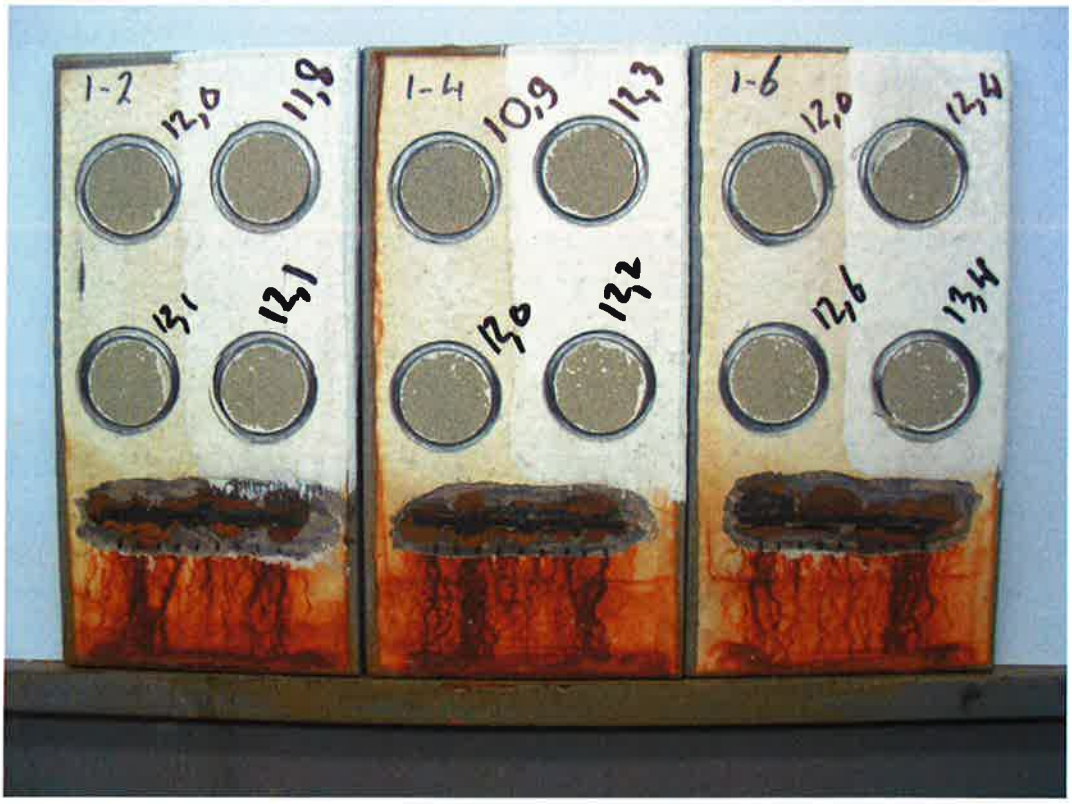


Photo 1. Cyclic ageing test, panels 2, 4 and 6.