



TEST REPORT No. 318650

Place and date of issue: Bellaria-Igea Marina - Italy, 15/09/2014

Customer: VIOMETALOUMIN BOUTSINIS J. - BAFALOUKAS J. G.P. - Thesi Patima - 19300 Aspropyrgou - ATHENS

Date test requested: 16/07/2014

Order number and date: 63808, 17/07/2014

Date specimen received: 08/08/2014

Test date: from 19/08/2014 to 29/08/2014

Purpose of test: Determination of corrosion resistance in a salt spray cabinet in accordance with standard UNI EN ISO 9227:2012

Test site: Istituto Giordano S.p.A. - Blocco 4 - Via San Mauro, 8 - 47814 Bellaria-Igea Marina (RN) - Italy

Specimen origin: sampled and supplied by the Customer

Identification of specimen received: No. 2014/1695/B

Description of specimen*

The test specimen comprises a types of grill:

- Sample "T80": the removable rods of the metallic system T80 has a frame which consists of two vertical aluminium profiles with holes and a plurality of removable horizontal rods.

(*) according to that stated by the Customer.

Comp. PM
Revis. AC

This test report consists of 3 sheets.

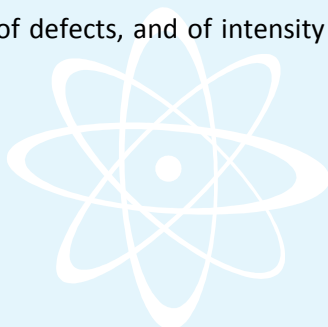
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1 of 3

Normative References

The test was performed according to the requirements of standard UNI EN ISO 9227:2012 dated 14/12/2012 "Corrosion tests in artificial atmospheres - Salt spray tests".

Assessments are carried out in accordance with the following standards:

- UNI EN ISO 4628-2:2007 dated 11/01/2007 "Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering";
- UNI EN ISO 4628-3:2007 dated 11/01/2007 "Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting";
- UNI EN ISO 4628-5:2007 dated 11/01/2007 "Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 5: Assessment of degree of flaking".



Test apparatus

The test uses an Erichsen Instruments CORROTHERM 610E salt spray corrosion chamber (in-house identification code CHG072).

Test method

The specimens were exposed in a salt spray chamber under the following conditions:

- test solution utilised = 5 % sodium chloride dissolved in deionised water;
- temperature inside the test cabinet= (35 ± 2) °C;
- type of exposure = continuous;
- intermediate inspection = none;
- total exposure time = 250 h.

At the end of the period of exposure, the specimens were removed from the test cabinet, washed with deionised water and dried in a stream of air.

The specimens are then evaluated to determine the degree of blistering, rusting, adhesion and degree of delamination and corrosion around the scribe.

Test results

Accelerated corrosion in a neutral salt spray cabinet

Degree of blistering " $n(S_m)$ "* after 250 h exposure	Degree of rusting " R_i "** after 250 h exposure
< 2(S2)	$R_i = 0$

(*) The degree of blistering is expressed as a quantity e.g. " n " from 2 to 5 and a size e.g. " S_m " from 2 to 5; " 2 " minimum quantity, " $S2$ " minimum size.

(**) The degree of rusting ranges from " $R_i = 0$ " (rusted area 0 %) to " $R_i = 5$ " (rusted area 40 to 50 %).



Photo of specimen at end of test

Test Technician
(Dott. Oscar Filippini)



Head of Chemistry Laboratory
(Dott. Oscar Filippini)



Chief Executive Officer
(Dott. Arch. Sara Lorenza Giordano)

