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TEST REPORT No. 318651

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

Customer: VIOMETALOUMIN BOUTSINIS J. - BAFALOUKAS J. G.P. - Thesi Patima - 19300 Aspro-pyrgou - 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/A

Description of specimen*

The test specimen comprises a types of grill:

– Sample “T120”: consists of columns aluminium reinforced interior with bars of iron. The columns linked together with inox 316 shears. The door pulled into the upper and lower guide with bearings that are at the bottom of the door.

(*) according to that stated by the Customer.

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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.

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Test results

Accelerated corrosion in a neutral salt spray cabinet

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

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

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

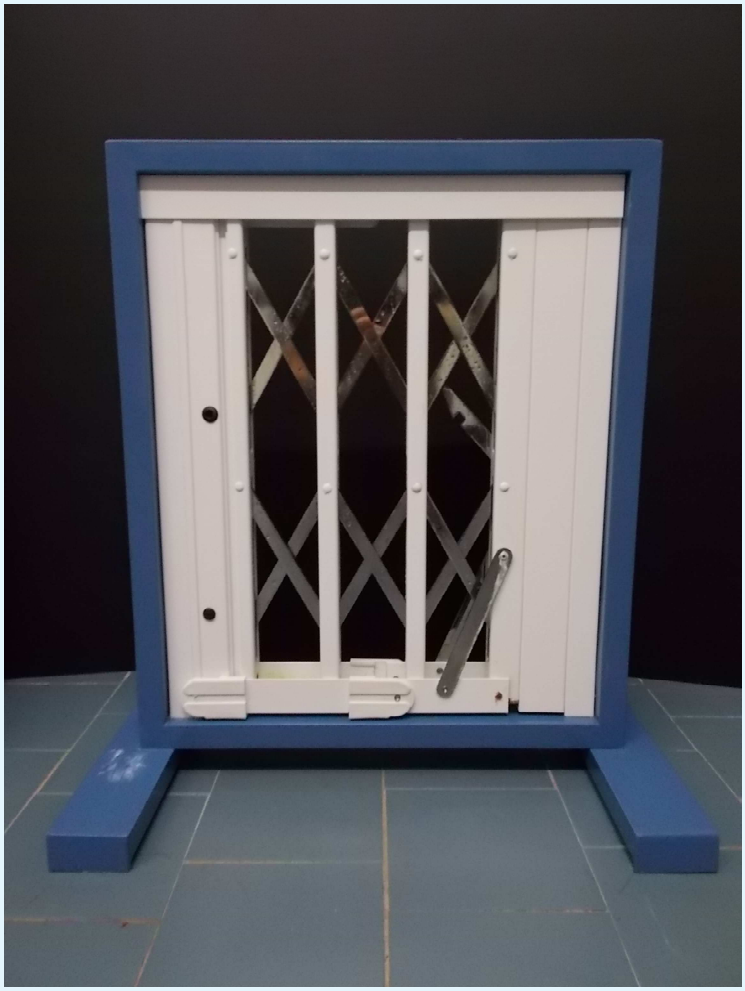

Photo of specimen at end of test

Test Technician
(Dott. Oscar Filippini)

Head of Chemistry Laboratory
(Dott. Oscar Filippini)

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

Firmato digitalmente da GIORDANO SARA LORENZA