



SALT SPRAY CHAMBER CORROSION REPORT

LLOVE S.L.	TEST DATA	Test No.: 3.16 Date: 18.01.16
Client: VONDOM, S.L.U. Specification: UNE EN ISO 9227	Type of coating: Various (see type of parts) Requested demand: 240h without signs of corrosion (Resistance Grade 4 according to UNE EN 1670:2007). It is advisable to point out discolorations as well as changes in visual appearance.	
Start date: 18.01.16 End date: 28.01.16		
Type of parts: (according to data provided by the customer): <ul style="list-style-type: none"> • 12 pieces of zinc-plated iron (10 zinc-plated + 2 with some parts protected with plastic). • 1 piece of aluminum (two different pieces coupled by means of thread) • 4 pieces of brass • 3 pcs. stainless steel (INOX quality not specified) 		
Thermal shock: NO		

For a better evaluation of the results, they will be grouped according to the type of part:

- A) ZINC-PLATED PARTS
- B) ALUMINUM PARTS
- C) BRASS PARTS
- D) STAINLESS PARTS

TEST PARAMETERS

The test is based on the UNE EN ISO 9227 specification. In which the sample pieces are introduced in a controlled saline environment chamber, being the concentration of the solution used 50g/l of NaCl and a pH of 6.5- 7.2.

The temperature of the chamber will be 35°C and the volume of salt mist collected in the 10cm diameter collectors will be 1.0-2.0 cc/h.

After the exposure time in the assay, the samples are washed with water at room temperature.

Manufacture of the saline solution used: No. 15.025

Control of the parameters during the test:

Date and time	Volume collected (1.0 - 2.0cc/h)	pH (6.5 - 7.2)	Concentration (5±0.5%)
18.01.16	1.6 cc/h	6,8	5,01%
25.01.16	1.7 cc/h	6,8	5,01%

REVIEW BY: J.M. Glanadell

REVIEWED BY: Sonia Vera

RESULTS OBTAINED IN THE TEST

GROUP A: ZINC PLATED PARTS (12 UNITS)

For each observation indicate the number of pieces affected. The sum of each column must correspond to the total number of pieces in the test.

- A. No corrosion
- B. Appearance of white corrosion
- C. White corrosion on more than 5% of the surface.
- D. Appearance of red corrosion

	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432
A	12																	
B		2																
C		7	4	1	1	1	1	1										
D		3	8	11	11	11	11	11	12	12								



240h in C.N.S.

GROUP B : ALUMINUM PARTS (1 UNIT)

For each observation indicate the number of pieces affected. The sum of each column should correspond to the total number of pieces in the test.

- A. No corrosion
- B. Appearance of white corrosion
- C. White corrosion on more than 5% of the surface.
- D. Appearance of red corrosion

	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432
A	1	1																
B																		
C																		
D			1	1	1	1	1	1	1	1								



72h in C.N.S.

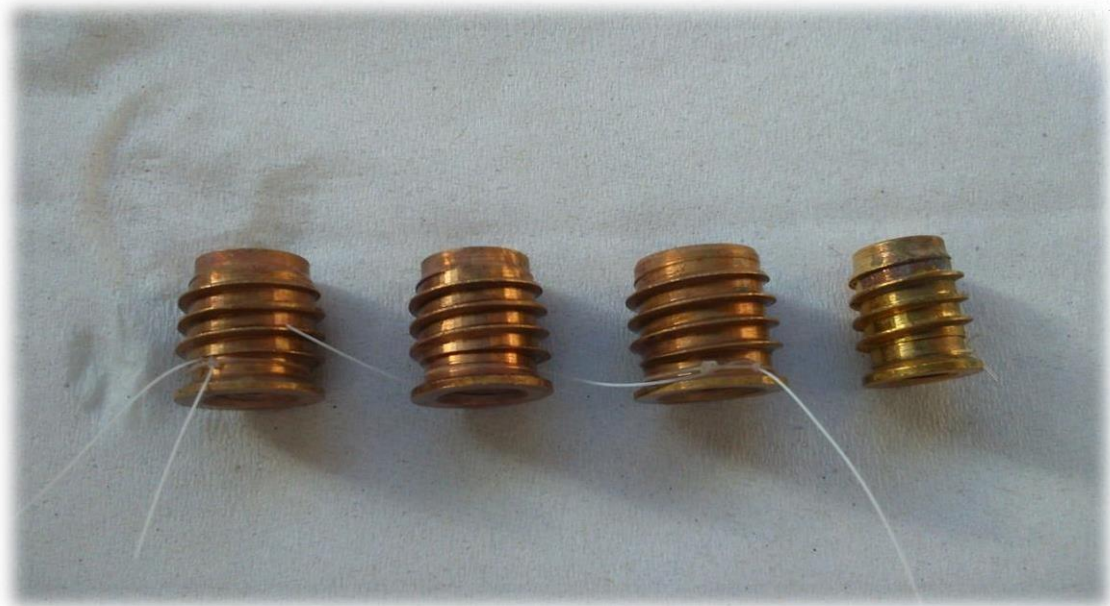
GROUP C : BRASS PARTS (4 UNITS)

For each observation indicate the number of pieces affected. The sum of each column should correspond to the total number of pieces in the test.

- A. No corrosion
- B. Appearance of white corrosion
- C. White corrosion on more than 5% of the surface.
- D. Appearance of red corrosion

	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432
A	4	4	4	4	4	4	4	4	4	4								
B																		
C																		
D																		

NOTE: with the passage of time only a discoloration of the metal is visible.



240h in C.N.S

GROUP D : STAINLESS STEEL PARTS (3 UNITS)

For each observation indicate the number of pieces affected. The sum of each column should correspond to the total number of pieces in the test.

- A. No corrosion
- B. Appearance of white corrosion
- C. White corrosion on more than 5% of the surface.
- D. Appearance of red corrosion

	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432
A	3	2	2	2	2	2	2	2	2	2								
B																		
C																		
D		1	1	1	1	1	1	1	1	1								



240h in C.N.S



TEST CONCLUSIONS

- Zinc plated parts have the worst corrosion resistance. They are probably zinc-plated and passivated parts with finishes that have good decorative properties, brightness and tone, but provide little resistance to corrosion. In this sense, it has caught our attention that one of the pieces (the one located at the bottom right according to the photo) has a higher resistance than the rest of its group, probably because it has been treated with a different product. It should be noted that there are other types of zinc finishes on the market (high-strength passivated and/or sealed) that can provide much greater corrosion resistance.
- The aluminum part: shows oxidation at 72h and also black colorations.
- The brass parts withstand visually well the 240h of test. However, during the test they are slightly tinged and at the end of the 240h, once dry, they show some green oxidation stains.
- Two of the three stainless steel parts withstand 240h without oxidation. In one of them there are rust spots, but these are localized areas, there are no generalized areas of corrosion on the entire surface of the piece, probably produced by iron contamination at the time of machining.

**REPORT OF TEST MADE BY THE AIDIMA LABORATORY. S.C..**

Company: VONDOM, S.L.U.
Address: AVENIDA DE VALENCIA 3
Town: 46891 PALOMAR (VALENCIA)
C.I.F.: B-98.195.746

Product: METALLIC STRUCTURE.
Stainless steel ring of 250 mm diameter , 74 mm height
and 1,8 mm of nominal thickness.

Samples provided by the client corresponding to initial tests for
obtaining the AIDIMA's Quality Symbol (S.C.)

Reception date: 20/05/2010
Starting/finishing test date 7/06/2012 – 28/06/2013

ELEMENT	TEST METHOD	RESULT
Corrosion resistance (*)	(REQUIREMENTS)	
ESTRUCTURA DE ACERO INOXIDABLE	EN ISO 9227:2007 UNE 56 843 :2001	Appearance of isolated stains. Without corrosion of the metallic support CORRECT

(*) pH of the dissolution $7,0 \pm 0,2$. Exposure time 500 hours

CONCLUSIONS:

The sample fulfills the characteristics contemplated in the internal procedures of AIDIMA for the concession of the S.C (Quality Symbol) for PUBLIC OUSTIDE USE (according UNE 56843:2001: Test exposure 500 hours)

Date: 08TH July 2010

Signed: Jose Molla Landete
Department of Materials of AIDIMA

The result of this report only refer to the tested sample.

This document could not be reproduced either totally or partially without express authorization of AIDIMA's laboratory.