



“The tests and activities marked with an ⁽¹⁾ are not covered by ENAC accreditation”.

REPORT No. 068893-2-a

CLIENT	INDUSTRIAS JUNO, S.A.
CONTACT PERSON	Luis Gil
ADDRESS	B.º Saconi, 10 48950 ERANDIO (Bizkaia)
PURPOSE	Tests according to 48316:2014 and UNE 48316:2014/1M:2015
TESTED MATERIAL	Painted metal panels Ref. Junolac Antioxidant Gloss
RECEIPT DATE	20.09.2017
TEST DATES	24.09.2017 / 10.10.2017
REPORT EMISSION DATE	23.10.2017



Blanca Ruiz de Gauna
Construction Materials Characterization
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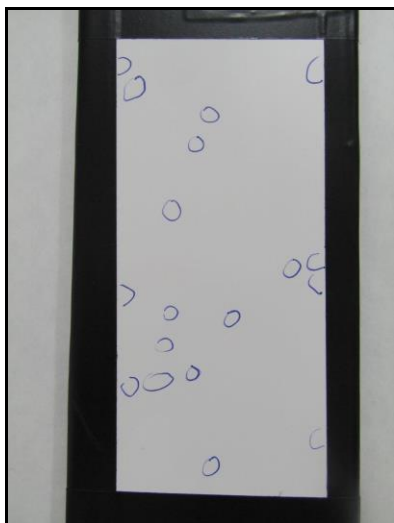
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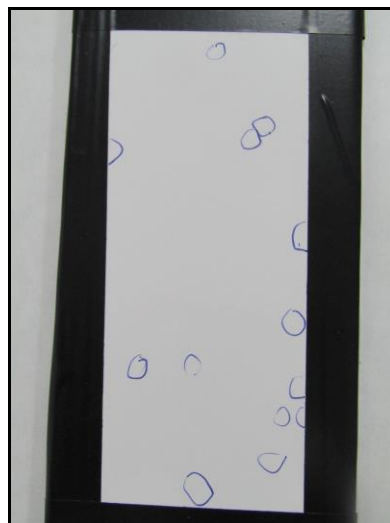
1. TEST SPECIMENS

Samples belonging to the company “**INDUSTRIAS JUNO, S.A.**” were received at Foundation Tecnalia R&I on September 20th of 2017 with the following references:

- Junolac Antioxidant Gloss N° 1
- Junolac Antioxidant Gloss N° 1.1
- Junolac Antioxidant Gloss N° 1.2



Photograph No.1 - Junolac Antioxidant Gloss N° 1



Photograph No.2 - Junolac Antioxidant Gloss N° 1.1



Photograph No.3 - Junolac Antioxidant Gloss N° 1.2.

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2. REQUESTED TESTS

The tests requested are those detailed in the standards 48316:2014 and UNE 48316:2014/1M:2015. These tests are:

- ◆ Corrosion tests in artificial atmospheres. Salt spray test according to UNE-EN ISO 9227:2012
- ◆ ⁽¹⁾ Assessment of degree of blistering according to UNE-EN ISO 4628-2:2016
- ◆ ⁽¹⁾ Assessment of degree of rusting according to UNE-EN ISO 4628-3:2016
- ◆ ⁽¹⁾ Assessment of degree of cracking according to UNE-EN ISO 4628-4:2016
- ◆ ⁽¹⁾ Assessment of degree of flaking according to UNE-EN ISO 4628-5:2016
- ◆ ⁽¹⁾ Assessment of corrosion along the scribe line according to UNE-EN ISO 12944-6:1999 Annex A

3. CARRIED OUT TESTS

- ◆ **Corrosion tests in artificial atmospheres. Salt spray test according to UNE-EN ISO 9227:2012**

The test specimens were tested to determine any variations experienced while neutral saline mist remained and this is carried out in a chamber that has been specially designed for such purpose, examining the specimens from time to time, indicated by the customer previously.

Prior to carrying out the test, we check to ensure the operational stability of the chamber by inserting reference test specimens. The loss in mass of the test specimens of reference has been 71.53 g/m².

Test specimens:

- Number of test specimens tested: 3, applied by the client
- Test specimen cleaning process following the test: water
- Angle of tilt of the test specimens in the test chamber: 20°

The conditions and characteristics of the test have been as follows:

- Saline solution: (50 ± 5) g/l of NaCl
 - Water: de-mineralised
 - Salt: for analysis 99.5% purity
- Temperature of the test enclosure: 35°C
- pH of the test solution: 6.8 (measured electrostatically at 25°C)
- pH of the solution collected: 6.8 (measured electrostatically at 25°C)
- Volume of solution collected: 38 ml/day
- Concentration of the solution output: 1.030 g/cm³

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The test duration was 240 hours.

At the end of the test has made the following assessments:

- ⁽¹⁾ Assessment of degree of blistering according to UNE-EN ISO 4628-2:2016
- ⁽¹⁾ Assessment of degree of rusting according to UNE-EN ISO 4628-3:2016
- ⁽¹⁾ Assessment of degree of cracking according to UNE-EN ISO 4628-4:2016
- ⁽¹⁾ Assessment of degree of flaking according to UNE-EN ISO 4628-5:2016
- ⁽¹⁾ Assessment of corrosion along the scribe line according to UNE-EN ISO 12944-6:1999 Annex A

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4. RESULTS

“The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%”.

♦ **Corrosion tests in artificial atmospheres. Salt spray tests according to UNE-EN ISO 9227:2012**

The enclosed tables shows the results obtained:

Table I

Reference	Test	Standard	Result	Specification according 48316:2014 and UNE 48316:2014 /1M:2015	Result
Junolac Antioxidant Gloss N°1	⁽¹⁾ Assessment of degree of blistering	UNE-EN ISO 4628-2:2004	0(S0)	0(S0)	Satisfactory
	⁽¹⁾ Assessment of degree of rusting	UNE-EN ISO 4628-3:2004	Ri0	Ri0	
	⁽¹⁾ Assessment of degree of cracking	UNE-EN ISO 4628-4:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of degree of flaking	UNE-EN ISO 4628-5:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of corrosion along the scribe line $M = \frac{C - W}{2} \text{ (mm)}$	UNE-EN ISO 12944-6:1999 (Annex A)	0	<1	Satisfactory

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Table II

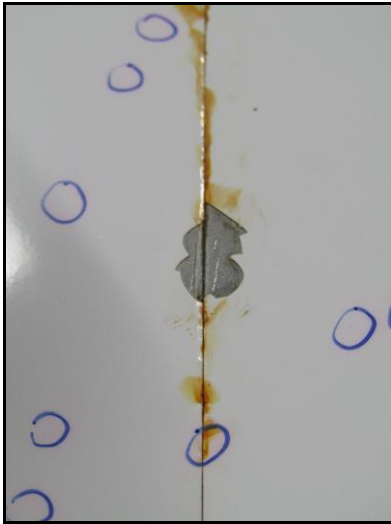
Reference	Test	Standard	Result	Specification according 48316:2014 and UNE 48316:2014 /1M:2015	Result
Junolac Antioxidant Gloss Nº 1.1	⁽¹⁾ Assessment of degree of blistering	UNE-EN ISO 4628-2:2004	0(S0)	0(S0)	Satisfactory
	⁽¹⁾ Assessment of degree of rusting	UNE-EN ISO 4628-3:2004	Ri0	Ri0	
	⁽¹⁾ Assessment of degree of cracking	UNE-EN ISO 4628-4:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of degree of flaking	UNE-EN ISO 4628-5:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of corrosion along the scribe line $M = \frac{C - W}{2} \text{ (mm)}$	UNE-EN ISO 12944-6:1999 (Annex A)	0	<1	Satisfactory

Table III

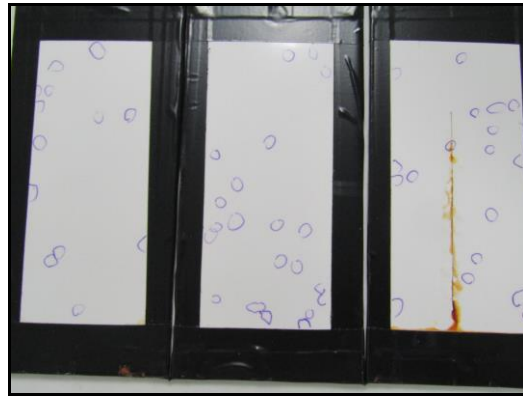
Reference	Test	Standard	Result	Specification according 48316:2014 and UNE 48316:2014 /1M:2015	Result
Junolac Antioxidant Gloss Nº 1.2.	⁽¹⁾ Assessment of degree of blistering	UNE-EN ISO 4628-2:2004	0(S0)	0(S0)	Satisfactory
	⁽¹⁾ Assessment of degree of rusting	UNE-EN ISO 4628-3:2004	Ri0	Ri0	
	⁽¹⁾ Assessment of degree of cracking	UNE-EN ISO 4628-4:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of degree of flaking	UNE-EN ISO 4628-5:2004	0(S0)	0(S0)	
	⁽¹⁾ Assessment of corrosion along the scribe line $M = \frac{C - W}{2} \text{ (mm)}$	UNE-EN ISO 12944-6:1999 (Annex A)	0	<1	Satisfactory

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Below are shown several photographs taken after 240 hour test:



**Photograph No.4 - Junolac
Antioxidant Gloss scribe line**



**Photograph No.5 - Junolac
Antioxidant Gloss**



**Photograph No.6 - Junolac
Antioxidante, N° 1.2.**

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5. CONCLUSIONS ⁽¹⁾

The sample referenced as *Junolac Antioxidant Gloss* complies with the requirements defined in the standards 48316:2014 y UNE 48316:2014/1M:2015.