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European Technical Assessment

ETA 16/0008 of 19/12/2019

English translation prepared by IETcc. Original version in Spanish language

General Part

Technical Assessment Body issuing the European Technical Assessment:

Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc)

Trade name of the construction product

ECOPICRIL 2100

White water based paint without premix glass beads, requiring drop-on materials to be used on trafficked areas.

Product family to which the construction product belongs

ROAD MARKING PRODUCTS

Manufacturer

RALVA, S.L.
C/ Calahorra n.º 2
28864 – Ajalvir, Madrid, SPAIN
www.pinturasralva.com

Manufacturing plant(s)

RALVA, S.L.
C/ Calahorra n.º 2
28864 – Ajalvir, Madrid, SPAIN

This European Technical Assessment contains

7 pages

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of

EAD 230011-00-0106
ROAD MARKING PRODUCTS

This version replaces

ETA 16/0008 issued on 15/02/2016

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Specific parts

1. Technical description of the product

ECOPICRIL 2100 is a road marking paint (as defined in EN 1871) used as a surface coating material for signalisation purposes when it is applied on the road with or without dropped-on materials. The paint is put on the market with indications on types and proportions of dropped-on materials.

Trademark: **ECOPICRIL 2100**
Nature: Water based paint
Colour: White
Producer: RALVA, S.L.

Physical and chemical characteristics: see Table 1.1.

CHARACTERISTICS	DECLARED VALUE
Luminance factor	$\beta = 0.88$
Chromaticity co-ordinates	Inside the white polygon
Hiding power (300 g/m ²)	$r_c = 0.95$
Ageing UV-B	$\Delta\beta \leq 0.05$
Bleeding resistance	$\Delta\beta \leq 0.05$
Alkali resistance	no deterioration of the surface
Stability to storage	≥ 4

The product has to be considered as the basis of a family. It may be used in different combinations (proportions) or installation instructions in order to reach different intended uses. Each of these combinations is identified as a System of the same family.

Identification of the Systems

This ETA concerns:

ECOPICRIL 2100 – System 1 defined by the installation instructions given in Table 1.2, together with the relevant Certificate of Constancy of Performance number of the drop-on materials.

Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: ECOPICRIL 2100 Paint without premix glass beads, applied by spray with drop-on material	720 g/m ²
Drop-on materials	Trademark: glass-beads EHOSTAR 20 WBP Certificate of Constancy of Performance: 0099/CPR/A72/0001	480 g/m ²

ECOPICRIL 2100 – System 2 defined by the installation instructions given in Table 1.3 together with the relevant Certificate of Constancy of Performance number of the drop-on materials

Table 1.3: Installation instructions of the ECOPICRIL 2100 – System 2		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: ECOPICRIL 2100 Paint without premix glass beads, applied by spray with drop-on material	720 g/m ²
Drop-on materials	Trademark: glass-beads EHOSTAR 10 Certificate of Constancy of Performance: 0099/CPR/A72/0001	480 g/m ²

NOTE: Other combination(s) than System 1 and 2 must be assessed and it (they) can give rise to an addendum to this ETA

2. Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD).

2.1 ECOPICRIL 2100 different systems

2.1.1 ECOPICRIL 2100 – System 1

- It is intended to be used for white permanent road markings in trafficked areas without presence of traffic with studded tyres.
- It is designed to give to the resulting road marking satisfactory day and night visibility (on dry, wet and rainy conditions) and skid resistance properties at initial and after 2 million roll-overs.
- It is also designed to give to the resulting road marking satisfactory day and night visibility (on dry and wet conditions) and skid resistance properties at initial and after 4 million roll-overs.
- The substrates on which it has provided satisfactory performances are bituminous asphalt and cement concrete with a maximum roughness of 0.9 mm (texture depth in accordance with EN 13036-1).
- It is intended to be used (not applied) at a temperature range from -40 °C to +70 °C for outside uses and from +5 °C to +70 °C for indoor uses. In addition, where relevant, the product has provided satisfactory performance for UV ageing.

2.1.2 ECOPICRIL 2100 – System 2

- It is intended to be used for white permanent road markings in trafficked areas without presence of traffic with studded tyres.
- It is designed to give to the resulting road marking satisfactory day and night visibility (on dry and wet conditions) and skid resistance properties at initial and after 4 million roll-overs.
- The substrates on which it has provided satisfactory performances are bituminous asphalt and cement concrete with a maximum roughness of 0.9 mm (texture depth in accordance with EN 13036-1).
- It is intended to be used (not applied) at a temperature range from -40 °C to +70 °C for outside uses and from +5 °C to +70 °C for indoor uses. In addition, where relevant, the product has provided satisfactory performance for UV ageing.

2.2 Relevant general conditions for the use of the kits

The provisions made in this European Technical Assessment are based on an assumed working life of 1 year as minimum, according to EAD 230011-00-0106, provided that the conditions lay down for the installation, packaging, transport and storage as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a

means for choosing the right product in relation to the expected economically reasonable working life of the works.

Installation should be carried out according to the ETA holder's specifications and using the specific application instructions of the product manufactured by the ETA holder or by suppliers recognized by the ETA holder. Installation should be carried out by appropriately qualified staff and under the supervision of the technical responsible of the site.

3. Performance of the product and references to the methods used for its assessment

3.1. Essential characteristics of the product

The identification tests and the assessment for the intended use of this road marking product according to the Basic Work Requirements (BWR) were carried out in compliance with the EAD 230011-00-0106 for Road marking products.

The characteristics of each System shall correspond to the respective values laid down in Tables 2.1 and 2.2 of this ETA, checked by IETcc.

Methods of verification and of assessing and judging are listed afterwards.

3.1.1. Mechanical resistance and stability (BWR 1)

Not relevant

3.1.2 Safety in case of fire (BWR 2)

Not relevant

3.1.3 Hygiene, health and environment (BWR 3)

Not relevant

3.1.4 Safety and accessibility in use (BWR 4)

For testing durability the manufacturer may choose either:

- method A: Road trial with an option according to EN 1824 (expressed as roll-over number) or/and
- method B: Wear simulator according to EN 13197 (expressed as traffic number).

For this ETA, the manufacturer has chosen for testing durability the method B "Wear simulator". The option No Performance Assessed for method A "Road Trials" is used.

Table 2.1: Results for ECOPICRIL 2100 – System 1									
Basic Works Requirement 4: Safety in use									
Durability			Night and day visibility and skid resistance for each durability level						
Test method used	Number of roll-over x 10 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Qd in mcd·m ⁻² ·lx ⁻¹	Chromaticity Co-ordinates CIE (x, y)	SRT units
			dry	wetness	rain				
Method B wear simulator EN 13197	Initial	0.01	435	155	96	0.74	278	always inside white polygon (EN 1436)	48
	Retained	0.1	400	102	62	0.73	268		48
		0.2	395	87	56	0.73	264		48
		0.5	342	77	52	0.73	264		48
		1.0	368	79	44	0.72	267		48
		2.0	267	55	37	0.68	253		53
		4.0	151	35	NPA	0.65	228		50
General aspects in relation to the intended use									
Retroreflection			Alkali resistance			Bleeding resistance		Test plates roughness	
Type II			PASS			Δβ = 0.03		0.8 mm	
Indentation			Colour			Softening point		ageing UV	
Not applicable			White			Not applicable		Δβ = 0.03	

Table 2.2: Results for ECOPICRIL 2100 – System 2									
Basic Works Requirement 4: Safety in use									
Durability			Night and day visibility and skid resistance for each durability level						
Test method used	Number of roll-over x 10 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Qd in mcd·m ⁻² ·lx ⁻¹	Chromaticity Co-ordinates CIE (x, y)	SRT units
			dry	wetness	rain				
Method B wear simulator EN 13197	Initial	0.01	414	115	NPA	0.74	256	always inside white polygon (EN 1436)	58
	Retained	0.1	361	93	NPA	0.75	232		54
		0.2	308	66	NPA	0.72	247		56
		0.5	251	62	NPA	0.72	237		56
		1.0	184	63	NPA	0.69	228		58
		2.0	175	64	NPA	0.67	229		55
		4.0	162	45	NPA	0.62	233		56
General aspects in relation to the intended use									
Retroreflection			Alkali resistance			Bleeding resistance		Test plates roughness	
Type II			PASS			Δβ = 0.03		0.8 mm	
Indentation			Colour			Softening point		ageing UV	
Not applicable			White			Not applicable		Δβ = 0.03	

3.1.5 Protection against noise (BWR 5)

Not relevant

3.1.6 **Energy economy and heat retention (BWR 6)**

Not relevant

3.1.7 **Sustainable use of natural resources (BWR 7)**

Not relevant

3.2 **Methods of verification**

The assessment for the intended use was carried out according to the Basic Work Requirements (BWR). The characteristics of the components shall correspond to the respective values laid down in Tables 2.1 and 2.2 of this ETA, checked by IETcc.

3.2.1 **Retroreflectivity in dry conditions (R_L):** as coefficient of retroreflected luminance R_L (or retroreflectivity), according to the applicable part of EN 1436.

3.2.2 **Retroreflectivity in conditions of wetness (R_L):** as coefficient of retroreflected luminance R_L (or retroreflectivity), according to the applicable part of EN 1436.

3.2.3 **Retroreflectivity in conditions of rain (R_L):** as coefficient of retroreflected luminance R_L (or retroreflectivity), according to the applicable part of EN 1436.

3.2.4 **Chromaticity co-ordinates (x, y):** as chromaticity co-ordinates CIE (x, y), according to the applicable part of EN 1436.

3.2.5 **Luminance Factor (β):** according to the applicable part of EN 1436.

3.2.6 **Luminance coefficient under diffuse illumination (Q_d):** according to the applicable part of EN 1436.

3.2.7 **Skid resistance (SRT):** according to the applicable part of EN 1436.

3.2.8 **Durability:** for this ETA, the manufacturer has chosen for testing durability the method B "Wear simulator" according to the specifications given in EN 13197. Test plates roughness: measured according to EN 13036-1 and the results expressed as the texture depth.

3.2.9 **Bleed resistance (only for paints):** according to the applicable part of EN 1871, as variation on the values for luminance factor (β) and chromaticity co-ordinates.

3.2.10 **Alkali resistance:** according to the applicable part of EN 1871 and the result expressed as pass/fail.

3.2.11 **Indentation (only for thermoplastics):** Not applicable.

3.2.12 **Softening point (only for thermoplastics):** Not applicable.

3.2.13 **UV-B ageing:** according to the applicable part of EN 1871.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

4.1 System of assessment and verification of constancy of performance

According to the decision 96/579/EC of the European Commission¹, system 1 of assessment and verification of constancy of performance (see EC delegated regulation (EU) No 568/2014 amending Annex V to Regulation (EU) N° 305/2011) applies.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan which is deposited at IETcc².

For type testing, the results of the tests performed as part of the assessment for the European Technical Assessment shall be used unless there are changes in the production line or plant. In such cases, the necessary type testing has to be agreed between IETcc and the notified body.

Issued in Madrid on 19th December 2019

By



Director
on behalf of Instituto de Ciencias de la Construcción Eduardo Torroja

¹ Published in the Official Journal of the European Union (OJEU) L254 of 8.10.1996, p0052 -0055.
See www.new.eur-lex.europa.eu/oj/direct-access.html

² The Control Plan is a confidential part of the ETA and only handed over to the notified certification body involved in the assessment and verification of constancy of performance.