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## European Technical Assessment

**ETA 07/0224  
of 25/04/2018**

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**

F-2203  
Thermoplastic "profiles" white 30% (CE)

**Product family to which the construction product belongs**

ROAD MARKING PRODUCTS

**Manufacturer**

Fabricación y Aplicación de Pinturas Especiales, S.A.  
Calle Paloma, 13, P.I. Los Gallegos  
28946 FUENLABRADA (Madrid) – SPAIN  
[www.faplisa.es](http://www.faplisa.es)

**Manufacturing plant(s)**

FAPLISA  
Calle Paloma, 13, P.I. Los Gallegos  
28946 FUENLABRADA (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

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## Specific parts

### 1. Technical description of the product

**F-2203** is a road marking thermoplastic (as defined in EN 1871) used as a surface coating material for signalisation purposes when it is applied on the road requiring dropped-on materials. The thermoplastic is put on the market with indications on types and proportions of dropped-on materials.

Trademark: **F-2203 Thermoplastic “profiles” white 30% (CE)**  
Nature: Hot applied, by extrusion and in profiles, thermoplastic  
Colour: White  
Producer: FAPLISA

Physical and chemical characteristics: see Table 1.1.

Table 1.1: Characteristics in accordance with EN 1871	
CHARACTERISTICS	DECLARED VALUE
Luminance factor, $\beta$	$\beta = 0.82$
Chromaticity co-ordinates (x, y)	Inside the white polygon
Ageing UV-B	$\Delta\beta \leq 0.05$
Heat stability	$\Delta\beta \leq 0.03$
Softening point	$\geq 110 \text{ }^\circ\text{C}$

The product has to be considered as the basis of a family. It may be used in different combinations (proportions) and/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 the:

**F-2203 – System 1** defined by the installation instructions given in Table 1.2 together with the Certificate of Constancy of Performance number of the drop-on materials.

Table 1.2: Installation instructions of the F-2203 – System 1		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: <b>F-2203</b>	4 500 g/m <sup>2</sup>
	Thermoplastic with premix glass beads, hot-applied by extrusion with drop-on materials in profiles of 4 mm high x 50 mm length with gaps of 200 mm	
Drop-on material	Trademark: glass-beads <b>EHOSTAR 5</b> Certificate of Constancy of Performance: 0099-CPR-A72-0001	500 g/m <sup>2</sup>

**F-2203 – System 2** defined by the installation instructions given in Table 1.3 together with the Certificate of Constancy of Performance number of the drop-on materials.

Table 1.3: Installation instructions of the F-2203 – System 2		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: 1 <sup>st</sup> coating: a flat continuous line with <b>F-2003</b> (as in ETA 07/0227) applied by spray with drop-on material	2 500 g/m <sup>2</sup>
	2 <sup>nd</sup> coating: <b>F-2203</b> applied, over the flat continuous line by extrusion, in profiles of 4 mm thickness, 50 mm length and a gap of 200 mm between profiles; with drop-on material	1 600 g/m <sup>2</sup>
Drop-on material	Trademark: glass-beads <b>EHOSTAR 20 TRM</b> Certificate of Constancy of Performance: 0099-CPR-A72-0001	500 g/m <sup>2</sup> (in each coating)

*NOTE: Other combination(s) than Systems 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 F-2203; different Systems

#### 2.1.1 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 4 million roll-overs.
- This road marking provides, when rolled-over, acoustic and mechanical effects.
- The substrate on which it has provided satisfactory performances is bituminous asphalt 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 -20 °C to +50 °C for outside uses and from +5 °C to +50 °C for indoor uses. In addition, where relevant, the product has provided satisfactory performance for UV ageing.

#### 2.1.2 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, wet and rainy conditions and skid resistance properties at initial and after 4 million roll-overs.
- This road marking provides, when rolled-over, acoustic and mechanical effects.
- The substrate on which it has provided satisfactory performances is bituminous asphalt 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 -20 °C to +50 °C for outside uses and from +5 °C to +50 °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 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 F-2203 – System 1									
Basic Works Requirement: Safety in use									
Durability			Night and day visibility and skid resistance for each durability level						
Test method used	Number of roll-over x 10 <sup>6</sup>		Night-time visibility			Day-time visibility			Skid resistance
			R <sub>L</sub> in mcd·m <sup>-2</sup> ·lx <sup>-1</sup> under conditions of			β luminance factor	Q <sub>d</sub> in mcd·m <sup>-2</sup> ·lx <sup>-1</sup>	Chromaticity Co-ordinates CIE (x, y)	SRT Units
			dry	wetness	rain				
Method B wear simulator EN 13197	Initial	0.01	293	119	84	0.67	314	always inside white polygon (EN 1436)	NOT APPLICABLE Structured road marking as defined in EN 1436:2007+A1:2008 clause 3.6 Note 2
	Retained	0.1	310	119	77	0.66	319		
		0.2	325	108	78	0.67	320		
		0.5	289	101	62	0.68	309		
		1.0	280	94	50	0.69	320		
		2.0	269	86	44	0.67	297		
		4.0	253	79	34	0.68	305		
General aspects in relation to the intended use									
Retroreflection			Alkali resistance			Bleeding resistance		Test plates roughness	
Type II			NPA			not applicable		0.8 mm	
Indentation			Colour			Softening point		ageing UV	
NPA			White			114 °C		Δβ ≤ 0.05	

Table 2.2: Results for F-2203 – System 2									
Basic Works Requirement: Safety in use									
Durability			Night and day visibility and skid resistance for each durability level						
Test method used	Number of roll-over x 10 <sup>6</sup>		Night-time visibility			Day-time visibility			Skid resistance
			R <sub>L</sub> in mcd·m <sup>-2</sup> ·lx <sup>-1</sup> under conditions of			β luminance factor	Q <sub>d</sub> in mcd·m <sup>-2</sup> ·lx <sup>-1</sup>	Chromaticity Co-ordinates CIE (x, y)	SRT Units
			dry	wetness	rain				
Method B wear simulator EN 13197	Initial	0.01	308	100	61	0.61	263	always inside white polygon (EN 1436)	NOT APPLICABLE Structured road marking as defined in EN 1436:2007+A1:2008 clause 3.6 Note 2
	Retained	0.1	205	95	47	0.61	283		
		0.2	229	95	56	0.57	283		
		0.5	198	73	36	0.52	229		
		1.0	257	82	38	0.48	224		
		2.0	242	75	35	0.52	225		
		4.0	221	63	25	0.49	217		
General aspects in relation to the intended use									
Retroreflection			Alkali resistance			Bleeding resistance		Test plates roughness	
Type II			NPA			not applicable		0.8 mm	
Indentation			Colour			Softening point		ageing UV	
NPA			White			114 °C		Δβ ≤ 0.05	

### 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 ( $R_L$ ):** 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 ( $\beta$ ):** 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):** Not applicable.

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):** Not applicable.

3.2.10 **Alkali resistance:** No Performance Assessed.

3.2.11 **Indentation (only for thermoplastics):** No Performance Assessed.

3.2.12 **Softening point (only for thermoplastics):** according to the applicable part of EN 1871.

3.2.13 **UVB 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 Commission<sup>1</sup>, 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 IETcc<sup>2</sup>.

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 25<sup>th</sup> April 2018

By



Marta Mª Castellote  
Director

on behalf of Instituto de Ciencias de la Construcción Eduardo Torroja

<sup>1</sup> 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](http://www.new.eur-lex.europa.eu/oj/direct-access.html)

<sup>2</sup> 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.