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**European Technical
Assessment**

**ETA 10/0242
of 16/04/2018**

English translation prepared by IETcc. Original version in Spanish language

General Part

**Technical Assessment Body issuing the
ETA:**

Instituto de Ciencias de la Construcción Eduardo
Torroja (IETcc)

Trade name of the construction product:

SPRAYLINE 45 Cod. TP-502

White thermoplastic with premix glass beads
requiring drop-on materials to be used on trafficked
areas.

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

ROAD MARKING PRODUCT

Manufacturer:

MARCAS VIALES, S.A.
Vega del Tajo s/n
Polígono Industrial n1 de Quer
19209 QUER (Guadalajara)
SPAIN

Manufacturing plant(s):

MARCAS VIALES, S.A.
Vega del Tajo s/n
Polígono Industrial n1 de Quer
19209 QUER (Guadalajara)
SPAIN

**This European Technical Assessment
contains**

10 pages

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

European Assessment Document (EAD)
230011-00-0106, edition February 2017

This version replaces

ETA 10/0242 issued on 31/07/2017

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Specific parts

1. Technical description of the product

SPRAYLINE 45 COD. TP-502 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: **SPRAYLINE 45 COD. TP-502**
Nature: Hot applied (by spray) thermoplastic
Colour: White
Producer: MARCAS VIALES, S.A.

Physical and chemical characteristics: see Table 1.1.

Table 1.1: Characteristics in accordance with EN 1871	
CHARACTERISTICS	DECLARED VALUE
Luminance factor, β	$\beta = 0.81$
Chromaticity co-ordinates (x, y)	Inside the white polygon
Ageing UV-B	$\Delta\beta \leq 0.05$
Heat stability ($\Delta\beta$)	$\Delta\beta \leq 0.10$
Softening point	$\geq 95 \text{ °C}$ and $< 110 \text{ °C}$

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:

SPRAYLINE 45 COD. TP-502 – 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 SPRAYLINE 45 COD. TP-502 – System 1		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: SPRAYLINE 45 COD. TP-502	3 000 g/m ²
	Thermoplastic with premix glass beads, applied by spray with drop-on material	
Drop-on materials	Trademark: glass-beads VIALUX 20 Certificate of Constancy of Performance: 1137-CPR-0471-81	500 g/m ²

SPRAYLINE 45 COD. TP-502 – 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 SPRAYLINE 45 COD. TP-502 – System 2		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: SPRAYLINE 45 COD. TP-502 Thermoplastic with premix glass beads, applied by spray with drop-on material	3 000 g/m ²
Drop-on materials	Trademark: glass-beads EHOSTAR 20 TRM Certificate of Constancy of Performance: 0099-CPR-A72-0001	500 g/m ²

SPRAYLINE 45 COD. TP-502 – System 3 defined by the installation instructions given in Table 1.4 together with the Certificate of Constancy of Performance number of the drop-on materials.

Table 1.4: Installation instructions of the SPRAYLINE 45 COD. TP-502 – System 3		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: SPRAYLINE 45 COD. TP-502 Thermoplastic with premix glass beads, applied by spray with drop-on material	3 000 g/m ²
Drop-on materials	Trademark: glass-beads EHOSTAR 5 Certificate of Constancy of Performance: 0099-CPR-A72-0001	500 g/m ²

SPRAYLINE 45 COD. TP-502 – System 4 defined by the installation instructions given in Table 1.5 together with the Certificate of Constancy of Performance number of the drop-on materials.

Table 1.5: Installation instructions of the SPRAYLINE 45 COD. TP-502 – System 4		
Identification of materials and type of application		Dosage(s)
Surface coating material	Trademark: SPRAYLINE 45 COD. TP-502 Thermoplastic with premix glass beads, applied by spray with drop-on material	3 000 g/m ²
Drop-on materials	Trademark: 80 % glass-beads EHOSTAR 20 TRM Certificate of Constancy of Performance: 0099-CPR-A72-0001 20 % Antiskid aggregates SILI12 Certificate of Constancy of Performance: 1137-CPR-494-81	500 g/m ²

NOTE: Other combination(s) than Systems 1, 2, 3 or 4 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 SPRAYLINE 45 COD. TP-502 – 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 2 million roll-overs.
- 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 and wet conditions and skid resistance properties at initial and after 4 million roll-overs.
- It is designed to give to the resulting road marking satisfactory day and night visibility on dry and wet and rainy conditions and skid resistance properties at initial and after 2 million roll-overs.
- 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.

2.1.3 System 3

- 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 conditions and skid resistance properties at initial and after 4 million roll-overs.
- 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.

2.1.4 System 4

- 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 and skid resistance properties at initial and after 4 million roll-overs.
- 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 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, 2.2, 2.3 and 2.4 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 SPRAYLINE 45 COD. TP-502 – 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 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Q _d 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	495	178	92	0.67	221	always Inside white polygon (EN 1436)	45
	Retained	0.1	532	177	94	0.66	230		45
		0.2	467	117	55	0.65	225		45
		0.5	616	206	112	0.64	236		45
		1.0	616	205	119	0.65	228		45
		2.0	628	220	139	0.67	241		45
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			103 °C		Δβ < 0.05	

Table 2.2: Results for SPRAYLINE 45 COD. TP-502 – 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 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Q _d 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	467	118	NPA	0.67	255	always Inside white polygon (EN 1436)	49
	Retained	0.1	481	84	NPA	0.66	251		46
		0.2	450	73	NPA	0.66	239		47
		0.5	458	67	NPA	0.65	243		45
		1.0	440	61	NPA	0.65	245		45
		2.0	382	68	NPA	0.64	241		45
		4.0	294	45	NPA	0.63	248		45
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			103 °C		Δβ < 0.05	

Table 2.3: Results for SPRAYLINE 45 COD. TP-502 – System 3

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 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Q _d 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	398	NPA	NPA	0.68	267	always inside white polygon (EN 1436)	50
	Retained	0.1	424	NPA	NPA	0.65	262		46
		0.2	404	NPA	NPA	0.65	252		46
		0.5	432	NPA	NPA	0.65	250		45
		1.0	438	NPA	NPA	0.65	252		45
		2.0	399	NPA	NPA	0.64	240		45
		4.0	396	NPA	NPA	0.63	247		45
General aspects in relation to the intended use									
Retroreflection			Alkali resistance			Bleeding resistance		Test plates roughness	
Type I			NPA			not applicable		0.8 mm	
Indentation			Colour			Softening point		ageing UV	
NPA			White			103 °C		Δβ < 0.05	

Table 2.4: Results for SPRAYLINE 45 COD. TP-502 – System 4

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 ⁶		Night-time visibility			Day-time visibility			Skid resistance
			R _L in mcd·m ⁻² ·lx ⁻¹ under conditions of			β luminance factor	Q _d 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	438	307	157	0.72	245	always inside white polygon (EN 1436)	50
	Retained	0.1	489	200	97	0.73	241		50
		0.2	395	189	76	0.73	248		50
		0.5	500	160	48	0.72	246		50
		1.0	489	155	47	0.73	238		47
		2.0	470	121	45	0.71	245		47
		4.0	359	132	36	0.71	240		46
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			103 °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 Systems shall correspond to the respective values laid down in Tables 2.1, 2.2, 2.3 and 2.4 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 (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):** 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 1996/0579/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 the ETA holder and the notified body.



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On behalf of Instituto de Ciencias de la Construcción Eduardo Torroja

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Marta Mª Castellote
Director

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.