

TEST FOR THE DURABILITY OF ROAD MARKING MATERIALS

(Durability test according to EN 13197:2012+A1:2014)
The tests marked with * are not covered by ENAC accreditation

TEST REPORT	REF.	5.313
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Delivered to: **SOVITEC IBÉRICA S.A.**
C/ Acústica, 10-12 (Pol. Ind. Santa Rita)
08755 CASTELLBISBAL (Barcelona) ESPAÑA

Issue date: 12-07-2021

A) INFORMATION PROVIDED BY THE CUSTOMER

BASE MATERIAL

Trade mark:	CONSTANCE (SBO-2000-10)				
Nature:	White acrylic paint				
Dosage:	720	g/m ²	Thickness:	-	µm
Producer:	SIGNATEKMA				
Applied by:	Spray				

DROP ON MATERIALS

	Glass beads	Antiskid aggregates	Glass beads - Antiskid aggregates
Trade mark:	ECHOSTAR 5 SBP	-	-
Nature:	Glass beads	-	-
Dosage g/m ² :	480	-	-
Producer:	POTTERS	-	-
Applied by:	Gravity	-	-
Certificate of Confor.	1137-CPR-494/81	-	-

	PREMIXED MATERIALS	OTHER MATERIALS
Trade mark:	-	-
Nature:	-	-
Dosage g/m ² :	-	-
Producer:	-	-
Applied by:	-	-
Certificate of Confor.	-	-

Reference of test plate received

1

TYPE OF MATERIAL:	White acrylic paint without premix glass beads applied by spray and with drop-on glass beads.
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CHARACTERISTIC OF THE ROAD MARKING: (in accordance with EN 1436:2018)	Not structured
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CLASS OF ROUGHNESS: (in accordance with EN 13197:2012+A1:2014)	RG2
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Roughness of the test plate on which the assembly has been tested

B) TEST RESULTS: initial and retained values and their technical classes, in accordance with EN 1436:2018

DURABILITY LEVEL		Traffic classes corresponding to each level of durability					
expressed in TRAFFIC CLASSES, in accordance with EN 13197:2012+A1:2014		in accordance with EN 1436:2018					
INITIAL		dry R _L	rain RR	wet RW	β	Qd	SRT
RETAINED	P0	R5	NPD	NPD	B5	Q5	S2
	P4	R5	NPD	NPD	B5	Q5	S1
	P5	R4	NPD	NPD	B4	Q5	S1
	P6	R4	NPD	NPD	B4	Q5	S2
	P7	R4	NPD	NPD	B3	Q4	S2
DRYING TIME (in accordance with EN 13197:2012+A1:2014)		T2					

The TRAFFIC CLASSES have been assigned based on the measured mean values, without considering their measurement uncertainties.

The results in this report relate only to the samples tested and can not be extended to other manufacturer's production.

Date of commencement of the test:	24-05-21	Date of end the test:	14-06-21
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1. Test conditions

in accordance with the specifications given in EN 13197:2012+A1:2014

Test plates:	1	Roughness:	RG2	Size:	G
Test plates orientation:	Parallel to the movement of the loading wheels				
Conditions during application:	t° amb: 21°C	HR:	45%	Material temperature (thermoplastic) °C:	-
Materials applied, % deviation on requested:	Film maker materi: 6,94	Glass beads:	0,00	Others materials:	-
	Antiskid aggregates:	Mixture:	-	Premix:	-
Test Tyres:	NEUMÁTICO COMERCIAL 205/60 R15				
Numer of wheels:	4				
Load on wheels (N):	3000 ± 300				
Tyre air pressure (Mpa):	0,25 ± 0,02				
Support angle (degrees):	0° ± 20°				
Steering angle (degrees):	alternating + 1° (± 10°) / - 1° (± 10°)				
Room temperature:	between + 5°C y + 10°C				
Drying cycle:	In accordance with EN 13197:2012+A1:2014				
Periodicity of measurements:	0,01; 0,1; 0,2; 0,5; 1,0; 2,0; 3,0 and 4,0 x 10 ⁶ wheel passages				
Deviations:					

2. Test results: initial and retained values and their technical classes

in accordance with EN 1436:2018

CHARACTERISTIC		value and for each number of roll-overs x 10 ⁶								Uncertainty
		0,01 (P0)	0,1 (P2)	0,2 (P3)	0,5 (P4)	1,0 (P5)	2,0 (P6)	3,0	4,0 (P7)	
Night-time visibility, R _L	dry (mcd·m ⁻² ·lx ⁻¹)	447	413	379	327	291	276	259	242	± 9 %
	rain (mcd·m ⁻² ·lx ⁻¹)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	± 8 %
	wet (mcd·m ⁻² ·lx ⁻¹)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	± 8 %
Day-time visibility	x	0,327	0,328	0,328	0,329	0,329	0,329	0,329	0,330	± 0,005
	y	0,346	0,347	0,348	0,349	0,349	0,348	0,347	0,349	± 0,004
	β	0,639	0,634	0,622	0,611	0,548	0,518	0,526	0,486	± 0,023
	Qd (mcd·m ⁻² ·lx ⁻¹)	219	220	218	217	212	210	203	197	± 8 %
Skid resistance	SRT coor.	52	47	47	48	49	50	51	50	± 5
	Temperature slider (°C)	15	15	16	17	18	18	20	18	± 3,0

3. Tests covered by ENAC accreditation N°. 180/LE444

TESTING	REFERENCE STANDARD	RESULTS			UNCERTAINTY
Chromaticity co-ordinates and luminance factor	UNE-EN 1871:2021 UNE-EN 1436:18 Anexo C	x 0,3172	y 0,3348	β 0,91	U _x =±0,0025 U _y =±0,0025 U _β =±0,02
Density at 23°C.	UNE-EN ISO 2811-1:2016	1,58	g/cm ³		U=±0,006 g/cm ³
Solids content	UNE-EN 12802:2012 Anexo A	74,5	%		U=±0,6 %
Ash content	UNE-EN 12802:2012 Anexo H	40	%		U=±1 %
Binder content by combustion at 450°C	Internal procedure MECYL 2.107	18,4	% Solid		U=±0,6 %
Binder content by combustion at 450°C	Internal procedure MECYL 2.107	13,7	% Paint		U=±0,6 %
Binder content per extraction	Internal procedure MECYL 2.105	12,7	% Paint		U=±0,8 %
Krebs-Stormer consistency at 25°C.	UNE 48076:1992	84	U.K.		U=±4 U.K.
Titanium dioxide content	Internal procedure MECYL 2.105	9,4	% Paint		U=±0,04c % TiO ₂
* Covering power, with a wet film thickness of 300 µm	UNE-EN 1871:2021	99	Rc		U _β =±0,02

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4. Key words for the identification of type of material, intended use and technical classes

There are three groups of key words:

A first key word to identify if is for permanent or for temporary purposes.

P For a permanent road marking assembly.

T For a temporary road marking assembly.

A second key to identify the retroreflective properties of the road marking assembly:

R For a road marking assembly retroreflective under dry conditions.

RW For a road marking assembly retroreflective under dry and wet conditions.

RR For a road marking assembly retroreflective under dry, wet and rain conditions.

NR For a road marking assembly not retroreflective.

A third key to identify the type of the road marking assembly:

I For a conventional road marking.

II For a road marking assembly with special properties to enhance the retroreflection on wet or/and rainy conditions.

5. Interpretative note

The results in this report relate only to the samples tested and cannot be extended to other manufacturer's production.

The results achieved by a road marking assembly on the durability test, shall not be interpreted as being a guarantee for working life in practice. The later depends on many factors beyond the materials such as design, location (type of road surface, weather conditions, etc) and application conditions.

aetec	REF.	Issue date	Laboratory Manager	Document reference
Page 2 of 2	5.313	12-07-2021	<i>Francisco J. Guerra</i>	1-6-MC Rev. 13
This report is identical to the original spanish version.		D. Francisco J. Guerra		

