

TEST FOR THE DURABILITY OF ROAD MARKING MATERIALS

(Durability test according to EN 13197:2011+A1:2014)

TEST REPORT	REF.	4.569
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Delivered to: **SOVITEC IBÉRICA S.A.**
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Issue date: **January 08th, 2019**

A) INFORMATION PROVIDED BY THE CUSTOMER

BASE MATERIAL

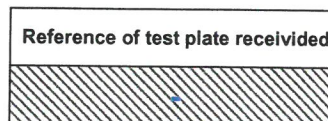
Trade mark:	SIGNALINE (SB0-3000-10)		
Nature:	White alkyd paint		
Dossage:	720	g/m ²	Thickness - μm
Producer:	SIGNATEKMA A.S		
Applied by:	Spray		

DROP ON MATERIALS

	Glass beads	Antiskid aggregates	Glass beads/Antiskid aggregates
Trade mark:	ECHOSTAR 5 SBP	-	-
Nature:	Glass beads	-	-
Dossage g/m ² :	480	-	-
Producer:	SOVITEC IBÉRICA S.A.	-	-
Applied by:	Drop-on	-	-

PREMIX GLASS BEADS

Trade mark:	-
Nature:	-
Dossage g/m ² :	-
Producer:	-



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

TYPE OF MATERIAL: White alkyd paint without premix glass beads applied by spray and with drop-on glass beads.

CHARACTERISTIC OF THE ROAD MARKING: (in accordance with EN 1436:2018)

Not structured

CLASS OF ROUGHNESS

(in accordance with EN 13197:2011+A1:2014)

RG2

Roughness of the test plate on which the assembly has been tested

DURABILITY LEVEL		Traffic classes corresponding to each level of durability					
expressed in TRAFFIC CLASSES, in accordance with EN 13197:2011+A1:2014		in accordance with EN 1436:2018					
		dry R _L	rain RR	wet RW	β	Qd	SRT
INITIAL	P0	R3	NPD	NPD	B5	Q5	S1
	P4	R4	NPD	NPD	B5	Q5	S1
RETAINED	P5	R4	NPD	NPD	B5	Q5	S1
	P6	R4	NPD	NPD	B5	Q5	S1
	P7	R4	NPD	NPD	B5	Q5	S1
DRYING TIME (in accordance with EN 13197:2011+A1:2014)		T3					

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: **November 12th, 2018**

Date of end of the test:

November 07th, 2018

1.- Test conditions

in accordance with the specifications given in EN 13197:2011+A1:2014

Test plates	1	Roughness	RG2	Size	G
Test plates orientation	Parallel to the movement of the loading wheels				
Test conditions during application	t° amb:	16°C	HR:	30%	Material temperature (thermoplastic) °C
Materials applied, % deviation on requested	Film maker material:	5,97	Glass beads:	0,00	Antiskid aggregates: - Mixture: -
Test Tyres	NEUMÁTICO COMERCIAL 205/60 R15				
Number 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 and + 10°C				
Drying cycle	In accordance with EN 13197:2011+A1:2014				
Periodicity of measurements	0,01; 0,1; 0,2; 0,5; 1,0; 2,0; 3,0 y 4,0 x 10 ⁶				
Deviation:	· Not				

2.- Pass/fail criteria

PERFORMANCE REQUIREMENTS OF THE ROAD MARKING ASSEMBLY in accordance with EN 1436:2018			TRAFFIC CLASSES - REQUIRED N° OF ROLL-OVERS in accordance with EN 13197:2011+A1:2014	
CHARACTERISTIC	TECHNICAL CLASSES AND MINIMUM VALUES		TRAFFIC CLASS	N° roll-overs x 10 ⁶
	Night-time visibility under conditions: (mcd·m ⁻² ·lx ⁻¹)	R _L DRY	R2 (100) ¹ - R1 (80) ²	P0
R _L RAIN		RR1 (25)	P1	0,05 (optional)
R _L WET		RW1 (25)	P2	0,1
Day-time visibility	(x,y)	inside the relevant polygon	P3	0,2
	β	B2 (0,3) ¹ - B1 (0,2) ²	P4	0,5
	Qd (mcd·m ⁻² ·lx ⁻¹)	Q2 (100) ¹ - Q1 (80) ²	P5	1,0
Skid resistance	SRT	S1 (45)	P6	2,0
			P7	4,0

1) for white colour
2) for yellow colour

3.- TEST RESULTS: initial and retained values and their technical classes

in accordance with EN 1436:2018

CHARACTERISTIC		value and for each number of wheel passages 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 , mcd·m ⁻² ·lx ⁻¹	dry R _L	169	189	193	222	231	224	235	215	± 7 %
	rain RR	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	± 7 %
	wet RW	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD	± 7 %
Day-time visibility	x	0,325	0,326	0,327	0,329	0,329	0,330	0,329	0,331	± 0,004
	y	0,345	0,347	0,349	0,352	0,350	0,353	0,350	0,353	± 0,004
	β	0,740	0,718	0,705	0,670	0,665	0,656	0,624	0,616	± 0,014
	Qd (mcd·m ⁻² ·lx ⁻¹)	275	272	268	256	252	249	246	226	± 9 %
Skid resistance	SRT corr.	47	46	45	45	45	45	45	45	± 5
	Temperature slider (°C)	14	13	13	14	13	11	10	10	± 2,8

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

The intended use is defined by three groups of key words.

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

P For permanent road marking.

T For temporary road marking.

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

R For road markings retroreflective under dry conditions

RW For road markings retroreflective under dry and wet conditions

RR For road markings retroreflective under dry, wet and rain conditions

NR For non retroreflective road markings.

The third key is to identify the type of road marking

I Conventional road marking

II Road marking with special properties to enhance the retroreflection in wet or rainy conditions

5.- Interpretative note

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

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

aetec	REF.	Issue date	Laboratory Manager	Document reference
	4.569	January 08th, 2019	<i>Francisco J. Guerra</i>	I-6-MC (E) Rev. 10

This report is identical to the original spanish version.

