

NETIVEY HAMIFRATZ
ROAD MARKING
COLD PLASTIC SPRAY

REPORT NUMBER: Exp 17/900-1

**LABORATORY REPORT
ROAD MARKING
COLD PLASTIC**

REPORT	: Exp 17/900-1
CUSTOMER	: NETIVEY HAMIFRATZ Ltd
ADDRESS	: Gulf Lines Ltd-Powerful Street 1 P.O. Box 130 Tirat Carmel-Israel 39100
TEST DATES	: From 16/02/2017 to 16/03/2017
TEST REQUESTED	: SI 1871:2012
DATE REPORT	: 16/03/2017

PRODUCT	: SIGNODUR KSP RED (COMPONENT A:B) COLD PLASTIC 1:1 RED
MANUFACTURER	: HELIOS TBLUS
MATERIAL RECEIPT DATE	: 16/02/2017

AREA MANAGER:



Luis M. AMOR

LABORATORY DIRECTOR:

 **Euroconsult**
an ECG Company

José Antonio HERGUETA

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Note: Packaging stability and conclusions are outside of ENAC Accreditation.

1.- BACKGROUND

At the request of NETIVEY HAMIFRATZ Ltd and in order to verify the technical characteristics of the two component cold plastic material, EUROCONSULT S.A. received the above material to come to the realization of the tests contained in the Standard SI 1871:2012.

The test methodology used and results are expressed in this report.

2.- TEST METHODOLOGY

The determination of values for each test was carried out following the methods specified in the following Standards:

- Road marking materials. Road marking performance for road users..... EN 1436:2009
- Road marking materials. Physical properties.. EN 1871:2000
- Road marking materials. Physical properties.....SI 1871:2012
- Plastics. Methods of exposure to laboratory light sources. Part 3: UV lights UNE-EN ISO 4892-3:2016

3.- RESULTS**3.1.- Colorimetry****3.1.1.- Test Methodology:**

The test is performed according to Annex A of the Standard SI 1871. Colorimetry is measured after seven days drying at $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and $50\% \pm 5\%$ of relative humidity. Measures are determined on the upper surface.

Chromatic coordinates and luminance factor are determined with a spectrophotometer, using the illuminant D65, geometry $45^{\circ}/0^{\circ}$ and standard observer of 2° according to Annex C of the Standard EN 1436.

3.1.2.- Results:

Test	Result without aggregate	Result with aggregate
Luminance factor	$\beta = 0.1503$	$\beta = 0.1384$
Chromatic coordinates	$x = 0.5593$	$x = 0.5644$
	$y = 0.3330$	$y = 0.3332$

3.1.3.- Specified Results:

SI 1871	
Luminance factor	
$0.12 \leq \beta \leq 0.22$	
The material shows a luminance factor according to EN 1436 (≥ 0.12)	

SI 1871				
COORDINATE	VERTEX NUMBER			
	1	2	3	4
X	0.51	0.57	0.57	0.51
Y	0.31	0.31	0.35	0.35
The material is within the polygon color				

3.2.- Artificial accelerated ageing
3.2.1.- Test methodology:

Two test pieces of aluminum are prepared (150 mm x 75 mm x 0,6 mm). A film of material is applied with a spreader suitable, they are maintained for 7 days in horizontal position at $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and $50\% \pm 5\%$ of relative humidity. The colour and the luminance factor are measured immediately before starting the test.

The test pieces are subjected to exposure to artificial accelerated ageing chamber, Q.U.V. Q-Panel Company(reference number: 176), according to Standard EN 1871 and to Standard ISO 4892-3, with cycles of 8 hours UV light at $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 4 hours condensation at $50^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 168 hours, under type II lamps (UVB-313).

3.2.2.- Results:

Test	Result without aggregate	Result with aggregate
Initial luminance factor	$\beta = 0.1486$	$\beta = 0.1384$
Final luminance factor	$\beta = 0.1437$	$\beta = 0.1355$
	$\Delta\beta = 0.0049$	$\Delta\beta = 0.0029$
Final Chromatic coordinates	$x = 0.5521$	$x = 0.5531$
	$y = 0.3334$	$y = 0.3329$

No surface defect is observed.

3.2.3.- Specified Results:

SI 1871	
$\Delta\beta$	
≤ 0.05	
The material comply with the SI 1871	

EN 1871				
COORDINATE	VERTEX NUMBER			
	1	2	3	4
x	0.51	0.57	0.57	0.51
y	0.31	0.31	0.35	0.35
The material is within the polygon colour				

3.3.- Packaging stability
3.3.1.- Test methodology:

The test is performed according to Annex C of Standard SI 1871.

3.3.2.- Results:

The result obtained for both components was 6. Definite cake of settled pigment. Spatula drops through cake under its own weight. Definite resistance to sideways motion of the spatula. Coherent portions of cake may be removed on spatula. Product can be remixed readily to a homogeneous state.

3.3.3.- Specified Results:

Two component cold plastic will have a result equal or more than 3.

3.4.- Alkali Resistance
3.4.1.- Test methodology:

The test is performed according to Annex E of the Standard SI 1871.

3.4.2.- Results:

No detachment or roughness and formation of blisters are observed.

3.4.3.- Specified Results:

After the test shall no present any surface defect.

4.- CONCLUSIONS

The tested cold plastic material comply with the performance requirements of the norm SI 1871 (analyzed according to the section on cold plastics of the mentioned norm).

NOTE: After review the SAFETY DATA SHEET of HELIOS TBLUS, according to regulation EC 1907/2006 the cold plastic spray 1:1 Ref.: SIGNODUR KSP RED for both components does not contain any raw material including of the following hazardous chemicals: As, Cd, Cr (VI), lead or Hg; benzene, chlorinated compounds and ethylenglicol. This cold plastic is not volatile in minimum 65% of the mass.

נתיבי המפרץ בע"מ
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