




**ΚΑΠΕ
CRES**

CENTER for RENEWABLE ENERGY SOURCES

ENERGY MEASUREMENTS LABORATORY

Test Report

 KAPE CRES EME EML	TEST REPORT	Code Nr. : EMLF-014e
		Date of issue : 4/3/2009
		Page : 1 of : 4

CONFIDENTIAL

Center for Renewable Energy Sources
 19th Km Marathonos Av., 190 09 Pikermi,
 Attiki
 Telephone: 210-6603300
 Fax : 210-6603305

WARNING
*The test results relate only to the item(s) tested.
 This test report shall not be reproduced except in full without the approval of the Laboratory.*

CLIENT MARIS POLYMERS S.A. Industrial area of Inofita, 320 11 Inofita, Viotia, Greece	SERVICE ORDERED TO THE LABORATORY Spectral Reflectance measurements of a one component polyurethane based membrane
--	---


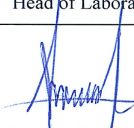
TEST ITEM DESCRIPTION 1 polyurethane based membrane specimen	ITEM MANUFACTURER MARIS POLYMERS S.A.
--	---

TEST ITEM IDENTIFICATION :
 Mariseal 250

TEST ITEM DATE OF RECEIPT : 17/02/2009

ATTACHMENTS TO THIS REPORT : -

REMARKS : -

NAME	A. Androutopoulos	A. Androutopoulos
TITLE	Measurement responsible	Head of Laboratory
SIGNATURE		

 KAFİE CRES EME EML	TEST REPORT		Code Nr. : EMLF-014e
			Date of issue : 4/3/2009
			Page : 2 of : 4

Measurement method

The measurements were carried out using the spectrophotometer UV/VIS/NIR type Lamda 19- Perkin Elmer with integrating sphere. The test specimen of a one component polyurethane based membrane Mariseal 250 (refer to Photo 1) has dimensions 4 x 4 cm and the aim of the measurements was the determination of the total spectral reflectance (%R) in the wavelength range from 400 to 2.000 nm on a 1 nm basis.

The measurement procedure is based on standard ASTM E 903-96.

The results of the measurements on a 50 nm basis are presented in the Table 1. In Figure 1, the spectral reflectance of the whole wavelength range measured is shown.

The mean spectral reflectance of the specimen at the visual spectrum range of 500 and 750 nm is found to be: $R = 91.00\%$.

The total uncertainty of measurement in the reported reflectivity values is estimated to be $\pm 2\%$.



Photo 1. Measured specimen.



**KAPE
CRES**
EME
EML

TEST REPORT

Code Nr. : EMLF-014e

Date of issue : 4/3/2009

Page : 3 of : 4

Table 1. Measurement results.

Wavelength (nm)	Spectral Reflectance (%)
	Mariseal 250
400	41.68
450	73.04
500	82.87
550	90.77
600	91.75
650	92.09
700	91.69
750	92.12
800	92.11
850	93.01
900	90.69
950	90.63
1000	89.92
1050	89.58
1100	89.51
1150	85.89
1200	82.17
1250	84.73
1300	86.97
1350	83.75
1400	76.74
1450	76.90
1500	75.61
1550	77.84
1600	77.44
1650	71.79
1700	53.12
1750	53.47
1800	56.48
1850	59.60
1900	55.71
1950	53.44
2000	51.88



TEST REPORT

Code Nr. : EMLF-014e
Date of issue : 4/3/2009
Page : 4 of : 4

Figure 1. Spectral reflectance of specimen Mariseal 250.

