

Test Report
SPM – GROUPE GERFLOR
Product Emissions in accordance
with ISO 16000
Décochoc

July 2012

Client: **SPM – GROUPE GERFLOR**
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France

Date: 31 July 2012

Testing Laboratory: Eurofins Product Testing A/S
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Introduction

On 22 July 2011 Eurofins Product Testing A/S received a sample of floor covering named

Décochoc

Batch: 00:45, Date of production: 14/07/2011

for emissions testing in accordance with ISO 16000. The sample was clearly labelled, properly packaged and not damaged. Testing was carried out in the laboratories of Eurofins Product Testing A/S. Before starting the testing procedure on 18 August 2011 the sample had been stored unopened at room temperature.

1 Description of the Applied Testing Method

The applied method complies with the test method as defined in ISO 16000-3, ISO 16000-6, 16000-9, 16000-11, ISO 16017-1. The internal method numbers are: 9810; 9811, 9812, 2808 , 8400.

1.1 Test Specimen

A sample was sent by the client to the laboratory of Eurofins Product Testing A/S in an airtight package. The package was opened and a test specimen was cut out. Edges and back were covered with aluminium foil. The test specimen was transferred into a test chamber immediately (internal method no.: 9810).

1.2 Test Chamber

The test chamber was consisting of stainless steel and had a volume of 119 litres. The air clean-up was realized in multiple steps. Before loading the chamber a blank check of the empty chamber was performed. The operation parameters were 23 °C, 50 % relative air humidity (in the supply air) with an air exchange rate of ½ per hour. The loading of the test chamber was 1 m² test specimen per m³ air volume (internal method 9811).

1.3 Sampling, Desorption, Analyses

1.3.1 VOC Emissions Testing after 28 Days

The emissions of organic compounds after 28 days were tested by drawing air samples from the chamber outlet through Tenax TA tubes (main tube and backup tube) after 28 days. Analyses were done by thermal desorption and gas chromatography / mass spectroscopy (internal methods no.: 9812 / 2808).

1.3.2 Testing of Aldehydes after 28 Days

The presence of aldehydes was tested by drawing air samples from the chamber outlet through DNPH-coated silicagel tubes after 28 days. Analysis was done by solvent desorption, HPLC and UV-/diode array detection (ISO 16000-3, internal methods no.: 9812 / 8400).

The absence of the aldehydes was stated if the specific wavelength UV detector response was lacking at the specific retention time in the chromatogram. Otherwise it was checked whether the detection limit was exceeded. In this case the identity was finally checked by comparing full scan sample UV spectra with full scan standard UV spectra.

1.3.3 Accreditation

The testing methods described above have been accredited (EN ISO/IEC 17025:2005) by DANAK (no. 522). But some parameters are not yet covered by that accreditation. It is difficult to obtain accreditation for complex mixtures of substances. At present the accreditation does not cover the parameters marked with a note *. But the analysis was done for these parameters at the same level of quality as for the accredited parameters.

1.4 Uncertainty of the test method

The relative standard deviation of the test method is amounted to 22% (RSD). The expanded uncertainty U_m is 45% and equals 2 x RSD%, see also www.eurofins.dk, search: Uncertainty.

2 Results

2.1 Emissions Test after 28 Days (French VOC label)

Décochoc	Concentration after 28 days, $\mu\text{g}/\text{m}^3$	C	B	A	A+
Formaldehyde	< 3	>120	<120	<60	<10
Acetaldehyde	< 3	>400	<400	<300	<200
Toluene	< 2	>600	<600	<450	<300
Tétrachloroethylene	< 2	>500	<500	<350	<250
Ethylbenzene	< 2	>1500	<1500	<1000	<750
Xylene	< 2	>400	<400	<300	<200
Styrene	< 2	>500	<500	<350	<250
2-Butoxyethanol	< 2	>2000	<2000	<1500	<1000
Trimethylbenzene	< 2	>2000	<2000	<1500	<1000
1,4-Dichlorobenzene	< 2	>120	<120	<90	<60
TVOC	15	>2000	<2000	<1500	<1000

<: Means less than
>: Means higher than

3 Interpretation of the results

The emission of the tested product Décochoc corresponds to the emission class A+ of the French regulation on the labeling of product for construction or wall cladding or flooring and paint and varnish on their emissions of volatile pollutants (arrêté April 2011).