C4EBD011

BATIK

PRODIS-GUT Certificate

The article mentioned meets the test criteria of
Gemeinschaft umweltfreundlicher Teppichboden e.V.

Short description of the textile floor covering

Type of production:	pile carpet acc. EN 1307 - tufted
Type of surface:	loop pile - loop pile like - multicoloured plain 100% PA6
Type of backing:	heavy backing Bitumen based - with textile bottom - reinforced

Harmful substances

The bans on use and thresholds, if applicable, in particular for SVHCs, carriers, azo dyes, allergenic and carcinogenic dyes, heavy metals chlorophenols (e.g. PCP), biocidal substances, phthalates and other softeners, halogenised flame retardants and Sb_20_3 as well as inorganic fibres specified in the GUT criteria have been met.

Formaldehyde

The ban on the use of adjuvants containing or splitting off formaldehyde have been met.
The formaldehyde emissions are < 10 µg/m³.

VOC emissions

Threshold in µg/m³	3 days	28 days
TVOC (C_6-C_{16}):	250	100
VOC without NIK:	100	50
SVOC (C_{16}-C_{23}):	30	30
R-value:	1,0	1
HCHO:	10	4
carcinogenics:	not detectable	
benzene:	not detectable	

The limit values for VOC emissions indicated alongside, determined in accordance with the test chamber process (ISO 16000-6 or EN 10580), have been met. The test was made 3 days, or, where required, 28 days after placement into the chamber.

The evaluation of the emissions and the calculation of the R value were based on the then current LCI list of the AgBB.

Odour

The product has passed the odour test with at least the grade 3.
A slight odour of low intensity is permissible in new merchandise.

Shares of recycled materials

The requirements regarding the content of contaminants and the emission behaviour apply unrestrictedly also to products whose manufacture included the use of recycled materials. The use of recycled raw materials (e.g. pile fibres) must be indicated when the manufacturer registers the article.

For a complete list of all limit values and test criteria see
www.gut-ev.de

Aachen, 10.09.2013

GUT security code

This certificate was issued electronically and requires no further signature

Gemeinschaft umweltfreundlicher Teppichboden e.V.,
D-52068 Aachen, Schönebergstrasse 2

PRODIS
THE COMPREHENSIVE EUROPEAN PRODUCT INFORMATION SYSTEM FOR TEXTILE FLOORCOVERINGS

Test Report

BALSAN

Product Emissions in
accordance with
CRI Green Label Plus
IKAT/ BATIK

July 2012

Client:	**BALSAN** Usine de Corbilly ARTHON BP50 36 330 LE POINCONNET FRANCE
Date:	5 July 2012
Testing Laboratory:	Eurofins Product Testing A/S Smedeskovvej 38, DK-8464 Galten, Denmark

Thomas Neuhaus
Head of product emission test centre

Pascal Ge
Analytical Service Manager

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Introduction

On 30 May 2012, Eurofins Product Testing A/S received a sample named

IKAT/ BATIK
Batch: 669581, Date of production: 19/04/2012

for emissions testing in accordance with the method for CRI Green Label Plus. 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 14 June 2012, the sample had been stored unopened at room temperature.

1 Description of the Applied Testing Method

The applied method complies with the method of the Carpet and Rug Institute CRI Green Label Plus. This method is based on the test method “Testing of volatile organic emissions from various sources using small-scale environmental chambers” as defined in the California Department of Public Health (CDPH) - Version of February 2010, in combination with CRI supplemental specifications. The internal method numbers are: 9810; 9811, 9812, 2802, 2803 , 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 and the sample was mounted into a frame in accordance with JIS A 1901. 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 0.4 m² test specimen per m³ air volume (internal method 9811).

1.3 Sampling, Desorption, Analyses

1.3.1 VOC Emissions Testing after 1 and 14 Days

The emissions of organic compounds after 1 and 14 days were tested by drawing air samples from the chamber outlet through Tenax TA tubes (main tube and backup tube). Analyses were done by thermal desorption and gas chromatography / mass spectroscopy (internal methods no.: 9812 / 2808). All single substances were identified if the toluene equivalent in the Total Ion Chromatogram (TIC) exceeded 2 µg/m³. Quantification was done with the respective response factor and the TIC signal, or in case of overlapping peaks by calculating with fragment ions. All non-identified substances were quantified as toluene equivalent if giving more than 2 µg/m³. All VOC listed on the CREL and TAC list were analysed and reported if present.

This test covered only substances that can be adsorbed on Tenax TA and that can be thermally desorbed. If other emissions occurred then these could not be monitored (or with limited reliability only).

1.3.2 Testing of Aldehydes after 1 and 14 Days

The presence of aldehydes (formaldehyde and acetaldehyde) was tested by drawing air samples from the chamber outlet through DNPH-coated silicagel tubes after 1 and 14 days. Analysis was done by solvent desorption, HPLC and UV-/diode array detection (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. 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.

1.3.4 Deviations from the Test Method

The chamber had a volume of 119 litres, not between 50 and 100 litres. The air exchange in the test chamber was ½ per hour during the whole period. The test specimen had been stored the whole period of 14 days in the emission test chamber. No other deviations.

1.3.5 Calculation of the Results

In order to calculate the model room concentrations, following formulas have been used:

Calculation of VOC concentration in office buildings:

$$C_{Office} = \frac{SER_A \cdot A}{n \cdot V \cdot 0.9}$$

C_{Office}	Concentration in the office building, µg/m^3
SER_A	Area specific emission rate, µg/m^{2}h
A	Floor area of office = 11.1 m^2
n	air exchange rate in office = 0.75 h^{-1}
V	Volume of office = 30.6 m^3

Calculation of emission factors after 14 days for annual testing after 24 hours:

The emission factor after 14 days can be calculated by using following equation for evaluation of the expected results after 14 days, if only testing after 24 hours was performed as for annual testing:

$$E_{14} = a \cdot t^{-b}$$

with E_{14}= Emission factor after 14 days (t=336 hours) and with

$$b = \frac{\ln E(t_1) - \ln E(t_2)}{\ln t_2 - \ln t_1}$$

$$a = E(t_1) \cdot t_1^{\,b} = E(t_2) \cdot t_2^{\,b}$$

with t_1 = 24 hours (1 day) and t_2 = 336 hours (14 days).

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 1 Day

IKAT/ BATIK	CAS No.	Emission factor, µg/m²h	Maximum Emission factor, µg/m²h	Office Building concentration, µg/m³	Target Office Building concentration, µg/m³
Target compounds					
Acetaldehyde	75-07-0	5.4	130	2.9	70
Benzene	71-43-2	< 3	55	< 2	30
Caprolactam *	105-60-2	18	130	9.7	70
2-Ethylhexanoic acid *	149-57-5	< 3	46	< 2	25
Formaldehyde	50-00-0	3.8	30	2.0	16.5
1-Methyl-2-pyrrolidinone *	872-50-4	< 3	300	< 2	160
Naphthalene	91-20-3	< 3	8.2	< 2	4.5
Nonanal *	124-19-6	< 3	24	< 2	13
Octanal *	124-13-0	< 3	13	< 2	7.2
4-Phenylcyclohexene *	4994-16-5	2.6	50	1.4	27
Styrene	100-42-5	< 3	410	< 2	220
Toluene	108-88-3	< 3	280	< 2	150
Vinyl acetate *	108-5-4	< 3	190	< 2	100
Other VOC					**Half CREL**
Not identified *	-	4.1		2.2	
Not identified *	-	3.1		1.7	
n-Tetradecane	629-59-4	3.1		1.7	
Not identified *	-	2.6		1.4	

n.d. Not detected
< Means less than
* Not a part of our accreditation. See 1.3.3.

2.2 Emissions Test after 14 Days

IKAT/ BATIK	CAS No.	Emission factor, µg/m²h	Maximum Emission factor, µg/m²h	Office Building concentration, µg/m³	Target Office Building concentration, µg/m³
Target compounds					
Acetaldehyde	75-07-0	< 3	130	< 2	70
Benzene	71-43-2	< 3	55	< 2	30
Caprolactam *	105-60-2	11	190	5.9	100
2-Ethylhexanoic acid *	149-57-5	< 3	46	< 2	25
Formaldehyde	50-00-0	< 3	30	< 2	16.5
1-Methyl-2-pyrrolidinone *	872-50-4	< 3	300	< 2	160
Naphthalene	91-20-3	< 3	8.2	< 2	4.5
Nonanal *	124-19-6	< 3	24	< 2	13
Octanal *	124-13-0	< 3	13	< 2	7.2
4-Phenylcyclohexene *	4994-16-5	< 3	50	< 2	27
Styrene	100-42-5	< 3	410	< 2	220
Toluene	108-88-3	< 3	280	< 2	150
Vinyl acetate *	108-5-4	< 3	190	< 2	100
Other VOC					**Half CREL**
n.d.	-	< 3	-	< 2	-

n.d. Not detected
< Means less than
* Not a part of our accreditation. See 1.3.3.

2.3 Determined values for extrapolation and further calculations

IKAT/ BATIK	CAS No.	Emission factor after 24 hours, µg/m²h	Emission factor after 14 days, µg/m²h	a	b
Acetaldehyde	75-07-0	5.4	< 3		
Benzene	71-43-2	< 3	< 3		
Caprolactam *	105-60-2	18	11	32.6	0.187
2-Ethylhexanoic acid *	149-57-5	< 3	< 3		
Formaldehyde	50-00-0	3.8	< 3		
1-Methyl-2-pyrrolidinone *	872-50-4	< 3	< 3		
Naphthalene	91-20-3	< 3	< 3		
Nonanal *	124-19-6	< 3	< 3		
Octanal *	124-13-0	< 3	< 3		
4-Phenylcyclohexene *	4994-16-5	2.6	< 3		

IKAT/ BATIK	CAS No.	Emission factor after 24 hours, µg/m²h	Emission factor after 14 days, µg/m²h	a	b
Styrene	100-42-5	< 3	< 3		
Toluene	108-88-3	< 3	< 3		
Vinyl acetate *	108-5-4	< 3	< 3		

< Means less than
* Not a part of our accreditation. See 1.3.3.

3 Interpretation of the Results

The results of IKAT/ BATIK can be summarised as follows:

No individual compound exceeds the maximum emission factor after 24 hours.

No individual compound exceeds the maximum emission factor after 14 days.

The tested product, IKAT/ BATIK complies with the requirements of the CRI Green Label Plus.

Appendix 1: Photo of the sample

Approved Environmental Profile

Characterised and Normalised Data for:

1 square metre over 60 Year Study Period: Floor Finishes: Soft floor coverings: Batik 60% solution dyed & 40% space dyed polyamide carpet tile with bitumen backing (Pile Weight 580g/m2)

Quality of Data for Profiled Material (Data for other constituent materials are available from BRE Global)

Start Date:	**01/01/2012**	Source of Data:	**Company records**
End Date:	**31/12/2012**	Geography:	**France**
Representativeness:	**2 sites representing 100% production**		
LCA Methodology:	**BRE Environmental Profiles Methodology 2008**		
Allocation:	**100% to product**		
Date of Data Entry:	**15/04/2014**		
Boundary:	**Cradle to Grave over 60 Year Study Period**		
Applicable Buildings:	**Offices, Healthcare, Education and Retail (Replacement by durability)**		
Comments:			

Issue	*Characterised Data*	*Unit*
Climate Change	**60**	**kg CO2 eq. (100yr)**
Water Extraction	**1.2**	**m³**
Mineral Resource Extraction	**0.036**	**tonnes**
Stratospheric Ozone Depletion	**0.000062**	**kg CFC11 eq.**
Human Toxicity	**18**	**kg 1,4-DB eq**
Ecotoxicity to Freshwater	**3.3**	**kg 1,4-DB eq**
Nuclear Waste (higher level)	**0.0000002**	**m³ high level waste**
Ecotoxicity to Land	**0.11**	**kg 1,4-DB eq**
Waste Disposal	**36**	**kg**
Fossil Fuel Depletion	**1200**	**MJ**
Eutrophication	**0.049**	**kg PO4 eq.**
Photochemical Ozone Creation	**0.046**	**kg ethene eq.**
Acidification	**0.53**	**kg SO2 eq.**

Issue	*Normalised Data*	*Western European Citizen's Impacts*
Climate Change	**0.0049**	**12300 kg CO2 eq. (100yr)**
Water Extraction	**0.0031**	**378 m³**
Mineral Resource Extraction	**0.0015**	**24.4 tonnes**
Stratospheric Ozone Depletion	**0.00028**	**0.217 kg CFC11 eq.**
Human Toxicity	**0.00091**	**19700 kg 1,4-DB eq.**
Ecotoxicity to Freshwater	**0.0025**	**1320 kg 1,4-DB eq.**
Nuclear Waste (higher level)	**0.0085**	**2.37E-05 m³ high level waste**
Ecotoxicity to Land	**0.00089**	**123 kg 1,4-DB eq.**
Waste Disposal	**0.0096**	**3750 kg**
Fossil Fuel Depletion	**0.0043**	**273 GJ**
Eutrophication	**0.0015**	**32.5 kg PO4 eq.**
Photochemical Ozone Creation	**0.0021**	**21.5 kg ethene eq.**
Acidification	**0.0075**	**71.2 kg SO2 eq.**
BRE Ecopoints Score	**0.359**	*Ecopoints*

Appendix No: 499 d

Issue No: 1

Valid From: 27/06/2014

Last Revised: 24/06/2014

Signed On Behalf of BRE Global: D Hughes