

**Vescom bv**  
**Dhr. Twan Ramaekers**  
**Sint-Jozefstraat 20**  
**5753 AV DEURNE**  
**Nederland**

**Your notice of**  
 02-09-2019

**Your reference**

**Date**  
 31-10-2019

## Analysis Report 19.04858.01

Required tests :

**EN 16516 (2017)**

**ISO 16000-3 (2011)**

**EN 12149 - test A (1997)**

**EN 12149 - test B (1997)**

**EN 12149 - test C (1997)**

**Emission of volatile organic compounds (chamber method)  
 determination of aldehydes after emission**

**Determination of heavy metals in wallpaper**

**Determination of vinylchloride in textile wall covering (GC-MS)**

**Determination of formaldehyde in textile wall covering (WKI method)**

Identification number	Information given by the client	Date of receipt
T1918640	Vescom PES/Acrylate Wallcovering	02-09-2019

**Kristina De Temmerman**  
 Order responsible

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 The results of the analysis cover the received samples. Centexbel is not responsible for the representativeness of the samples.  
 In assessing compliance with the specifications, we did not take into account the uncertainty on the test results.



**Reference: T1918640 - Vescom PES/Acrylate Wallcovering**

**Emission of volatile organic compounds (chamber method)**

Date of ending the test	30-10-2019
Standard used	EN 16516 (2017)
Product standard	décret Français sur les COV
Preparation	Procedure of sampling, storage of samples and preparation of test specimens as described in the standard EN 16516
Sampling and conditioning	Emission test chamber method at 23°C and 50% RH under ½ air exchange per hour. Sampling (under continuous ventilation) on Tenax TA
Sampling after X days	28 days
Analytical method	Volatile compounds are thermally desorbed, cryo-trapped and injected into a GC-MS.
Detection	Gas chromatography with Agilent MSD detector.
Quantification	Target compounds, non-target and unidentified compounds are quantified using toluene equivalents (TEQ). Target compounds are also calibrated component-specific.
Results	
Determination limit µg/m <sup>3</sup> (emissions)	5
Determination limit µg/m <sup>3</sup> (carcinogenic, mutagenic and toxic substances)	1

### Sample identification

#### Type of test method

Flec -  
Test-chamber x

#### Material of test chamber

Steel x  
Glass  
Other

Test chamber volume 0,25 [m<sup>3</sup>]  
Area of sample 0,25 [m<sup>2</sup>]  
Air exchange rate 0,5 [h<sup>-1</sup>]  
Area specific air exchange rate q 0,5 [mh<sup>-1</sup>]  
Temperature 23 [°C]  
Rel. humidity 50 [%]

Insert of sample into the test chamber Date  
06-09-19  
Sampling after 28 days 04-10-19

	Limieten	Measured µg/m <sup>3</sup>	Calibration
Rating	A+	A+	
Formaldehyde	<10	8	component specific_DNPH
Acetaldehyde	<200	< 5	component specific_DNPH
Toluene	<300	< 5	component specific
Tetrachloroethylene	<250	< 5	component specific
Ethylbenzene	<750	< 5	component specific
Xylene	<200	< 5	component specific
Styrene	<250	< 5	component specific
2 butoxyethanol	<1000	< 5	component specific
1,2,4-trimethylbenzene	<1000	< 5	component specific
1,4-dichlorobenzene	<60	< 5	component specific
TVOC	<1000	< 5	toluene equivalent
Benzene	<1	< 1	component specific
DBP	<1	< 1	component specific
DEHP	<1	< 1	component specific
Trichloroethylene	<1	< 1	component specific

Table 1: Summary of conditions and results of 28 day emission test

Annex 1

Annex.1\_report19.04858.01.pdf

**Reference:** T1918640\_01d - 00069 promotional - from V10DEURNE

**Determination of aldehydes after emission**

Date of ending the test 30-10-2019  
 Standard used ISO 16000-3 (2011)  
 Product standard décret Français sur les COV

Deviation from the standard  
 Sample preparation The sample is conditioned in a simulation room at 23°C and 50% R.H.  
 Air exchange rate 0.5 air exchange per hour  
 Sampling formaldehyde and acetaldehyde are adsorbed on dinitrophenylhydrazine (DNPH) impregnated silica

Analytical method RP-HPLC (UV 360 nm)

Results  
 Determination limit 0.002 mg/m<sup>3</sup> for formaldehyde and acetaldehyde, 0.005 mg/m<sup>3</sup> for the other components

	28 days
	mg/m <sup>3</sup>
Formaldehyde	0.008
Acetaldehyde	< 0.002
Acrolein	< 0.005
Propionaldehyde	< 0.005
Crotonaldehyde	< 0.005
Butyraldehyde	< 0.005
Isovaleraldehyde	< 0.005
Valeraldehyde	< 0.005
Hexaldehyde	< 0.005

**Reference: T1918640 - Vescom PES/Acrylate Wallcovering**

**Determination of heavy metals in wallpaper**

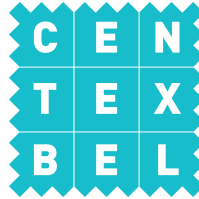
Date of ending the test 27-09-2019  
Standard used EN 12149 - test A (1997)  
Product standard EN 15102 +A1 (2011)

Deviation from the standard -  
Extraction method With a solution of 0.07 mol/L HCl  
Determination ICP-OES  
Analytical correction according to EN 233 (wallpaper cylindrical-specifications)

**Results**

Metals	Detection limit (DL) mg/kg	Concentration mg/kg	Corrected concentration (mg/kg)	Maximum migration * mg/kg
Sb (antimony)	0.60	72.15	29	
As (arsenic)	0.5	< 0.50	< 0.50	25
Ba (barium)	0.1	1.15	0.80	500
Cd (cadmium)	0.1	< 0.10	< 0.10	25
Cr (chromium)	0.2	< 0.20	< 0.20	60
Pb (lead)	0.05	0.40	0.28	90
Hg (mercury)	0.1	< 0.10	< 0.10	20
Se (selenium)	1	< 1.00	< 1.0	165

\* Limiting maximum migration according to EN 15102 (2007)+A1 (2011)



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**Determination of vinylchloride in textile wall covering (GC-MS)**

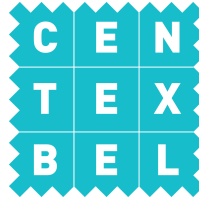
Date of ending the test 30-09-2019  
Standard used EN 12149 - test B (1997)  
Product standard EN 15102 +A1 (2011)

Deviation from the standard -  
Extraction method Dimethylacetamide is added to the sample in a closed bottle. The closed bottle is heated during 2 hours at 60°C. Air from the headspace is injected directly on GC.

Analysis method Gas chromatography, external standard

Results  
Detection limit 0.2 mg/kg

Result (mg/kg)	< 0.20
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**Reference: T1918640 - Vescom PES/Acrylate Wallcovering**

**Determination of formaldehyde in textile wall covering (WKI method)**

Date of ending the test 24-10-2019  
 Standard used EN 12149 - test C (1997)  
 Product standard EN 15102 +A1 (2011)

Deviation from the standard -

Principle Absorption of the released formaldehyde in water of textile wall covering.  
 Conditions: 2 \* 24 hours at 40°C in a closed bottle. Measurements take place on the 2nd 24 hours absorption liquid.

Determination Reaction with acetyl acetone  
 Spectrophotometric at 412 nm

**Results**

Maximum allowable concentration of formaldehyde: 12 mg/100g

mg/100g
< 12.0