

Emission test report of Bowiq Benelux BV sample “BoSpray”

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SPT2021-R254

Bowiq Benelux BV
Hullenbergweg 278
1101 BV, Amsterdam
The Netherlands

December 17th 2021

Servaco/Normec Product Testing is a joint venture between VITO and the Servaco/Normec Group. The new company focusses on product emission testing and VOC reduction performance testing. The product emission tests analyse the impact of all kinds of building and consumer products and materials on indoor air quality. Servaco Product Testing is the legal entity. Normec Product Testing is the trade name.

2. SAMPLE INFORMATION

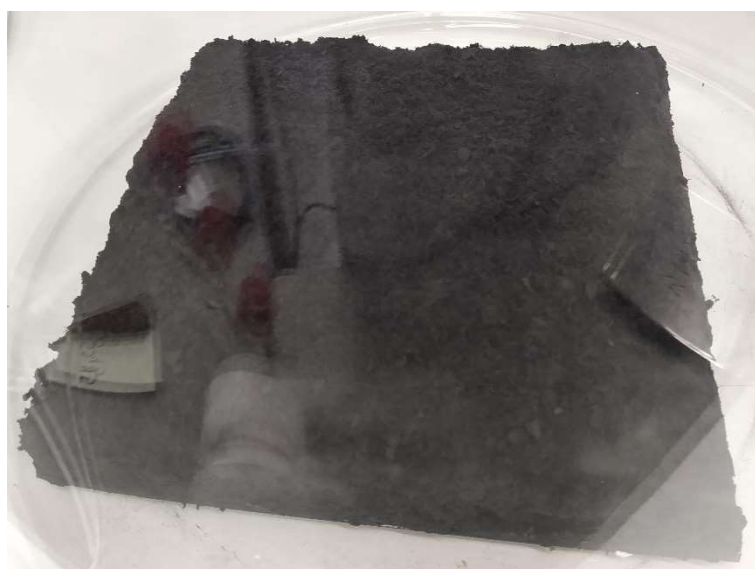
Table 1: Sample information provided by client

S1

Sample identification	BoSpray
Date of production	29/09/20
Date of sampling	26/10/20
Batch N°	164587
Type of product	Acoustical Spray plaster
Article nr.	BoSpray
Misc.	

Table 2: Sample information provided by Servaco Product Testing

Sample group code	SPT2021250
Sample code	SPT20213314
Date of reception of the sample	26/10/2021
Preconditioning period (start – end)	-
Date of the test (start – end)	26/10/2021 – 23/11/2021



Photograph 1: test sample “BoSpray”

3. TEST METHODS - ACCREDITATION

The following test methods were used:

- Test chamber was operated according to NBN EN 16516:2017+A1:2020 (ISO 16000-9 with extra clauses): Construction products – Assessment of release of dangerous substances – Determination of emissions into indoor air (internal procedure QM001)
- Analysis of TENAX samples was performed according to NBN EN 16516:2017+A1:2020 (ISO 16000-6 with extra clauses): Construction products – Assessment of release of dangerous substances – Determination of emissions into indoor air (internal procedure QM002)
- Analysis of DNPH cartridges was performed according to NBN EN 16516:2017+A1:2020 (ISO 16000-3): Construction products – Assessment of release of dangerous substances – Determination of emissions into indoor air (internal procedure QM003)
- The test sample preparation was performed according to NBN EN 16516:2017+A1:2020 (ISO 16000-11 with extra clauses): Construction products – Assessment of release of dangerous substances – Determination of emissions into indoor air (internal procedure QM001)
- Ammonia testing was performed according NBN EN 16516:2017+A1:2020 (ISO 16000-11 with extra clauses): Construction products – Assessment of release of dangerous substances – Determination of emissions into indoor air: sampling using impingers containing diluted sulphuric acid and spectrophotometric analysis of the liquid ammonia samples according to ISO 7150-1.
- Odour testing was performed according ISO 16000-28 (option acceptance): Indoor air - Part 28: Determination of odour emissions from building products using test chambers. The odour emission is measured using a sensory odour panel.

Table 3: Overview of the test method parameters

EN 16516 method	
Analytical methods	analytes
ISO 16000-3	Volatile aldehydes (C1-C4)
ISO 16000-6 + extra clauses	VOC, SVOC
Test chamber parameters	values
	S1
Chamber volume (m ³)	0.062
Air exchange rate (h ⁻¹)	0.5
Temperature (°C)	23 ± 1
Relative humidity (%)	50 ± 5
Loading factor (m ² /m ³)	1.0
Sample preparation	
Dimensions (m ²)	0.25 x 0.25
Application amount (g)	Application done by Bowiq on glass plates provided by NPT

Servaco Product Testing is an accredited laboratory according to EN ISO/IEC 17025 (BELAC 633-TEST) for the internal procedures QM001, QM002 and QM003. At present the accreditation does not cover the compounds marked with *, however analysis for these compounds was performed at the same level of quality as for the accredited compounds. The analytical measurement uncertainty (expanded uncertainty) for volatile aldehydes amounts to maximum 15 % and 30 % for the other target compounds. The total measurement uncertainty amounts to maximum 30 % for all compounds. The ammonia analysis and odour testing (option acceptability) was subcontracted to Vito and Olfasense.

4. RESULTS

4.1. VOC EMISSION RESULTS AFTER 28 DAYS

VOC analysis after 28 days						
S1	CAS number	RT	Id ¹	Conc. (µg/m ³)	SER _a (µg/m ² h)	R _i
VOC with LCI²						
Acetic acid	64-19-7	7.9	1	1200	590	0.992
Heptane	142-82-5	10.5	1	12	6	0.001
VVOC with LCI						
Formaldehyde	50-00-0	2.2	1	13	6	0.127
Acetaldehyde	75-07-0	3.0	1	< 1		
Acetone	67-64-1	4.0	1	10	5	0.0001
Propionaldehyde	123-38-6	4.9	1	< 1		
Butyraldehyde	123-72-8	7.7	1	< 1		
VOC without LCI (non-assessable)²						
-	-	-	-	-	-	-
Non identified						
Unidentified 1*		24.7	3	10	5	
Sum of VOCs without LCI				10	5	
TVOC				170	87	
R value						1.12
Carcinogens				< 1		
Benzene				< 1		
D.L.: detection limit < 0.5 µg/m ³ Q.L.: quantification limit < 1 µg/m ³						

Analysis of the NH ₃ after 28 days		
Analyte	CAS number	Concentration (µg/m ³)
NH₃*	7664-41-7	33
Q.L.: quantification limit 30 µg/m ³		

¹ Identification:

- 1: identification by standard solution and retention time, confirmed by spectrum library and specifically calibrated
- 2: identification by comparison with spectrum library and plausibility declaration, calibrated as toluene equivalent
- 3: not identified, calibrated as toluene equivalent

² Compounds marked with an * are not part of the accreditation

5. EVALUATION OF THE RESULTS

5.1. COMPARISON WITH LIMIT VALUES OF M1

S1 Compound	CAS number	Identification ³	Emission rate (mg/m ² h)	Emission rate M1 (mg/m ² h)	Emission rate M2 (mg/m ² h)
TVOC		2	0.09	<0.2	<0.4
Formaldehyde	50-00-0	1	0.006	<0.05	<0.125
Ammonia	7664-41-7	1	0.02	<0.03	<0.06
Carcinogenic compounds		1	<0.001	<0.001	<0.001
Single VOC			≤EU-LCI	≤EU-LCI	≤EU-LCI
Odour (dimensionless)			0.00	0.0	0.0

³ Identification:

- 1: identification by standard solution and retention time, confirmed by spectrum library and specifically calibrated
- 2: identification by comparison with spectrum library and plausibility declaration, calibrated as toluene equivalent
- 3: not identified, calibrated as toluene equivalent

Test results are only valid for the tested sample(s), as received from the client. Test report may only be copied or reprinted in its entity, parts of it only with a written acceptance by Servaco Product Testing

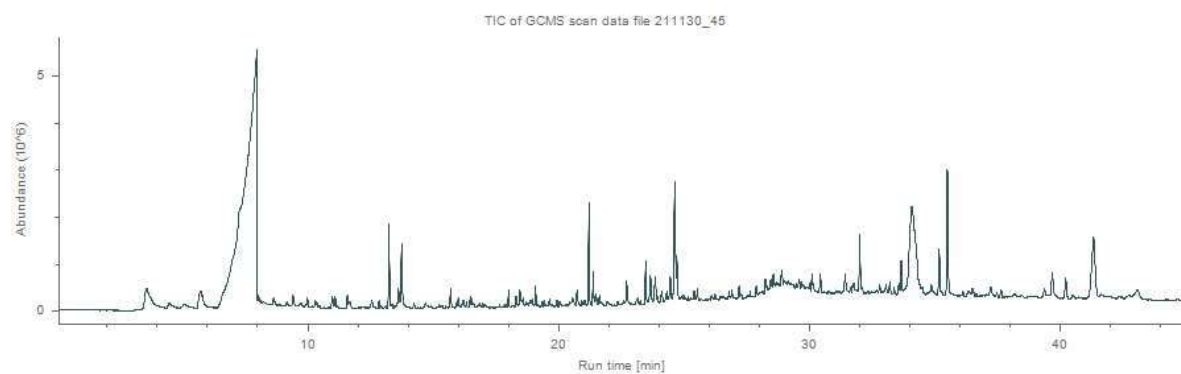
SPT2021-R254
Page 10 of 14

6. APPLIED LCI/NIK VALUES

Compound	CAS number	EU-LCI ($\mu\text{g}/\text{m}^3$)
Formaldehyde	50-00-0	100
Acetone	67-64-1	120000
Acetic acid	64-19-7	1200
Heptane	142-82-5	15000

7. CHROMATOGRAMS

S1 28 days



9. AUTHORISATION OF REPORT

This report contains the results of samples, analysed within the scope of a study ordered by Bowiq Benelux BV (Hullenbergweg 278; 1101 BV, Amsterdam; The Netherlands). It relates to the sample(s) with the following Servaco Product Testing - identification:

Sample monster codes belonging to sample group SPT2021250	
From	To
SPT20213314	SPT20213314

Servaco Product Testing is an accredited laboratory according to EN ISO/IEC 17025 (BELAC 633-TEST) for the internal procedures QM001, QM002 and QM003.

The laboratory is not responsible for the accuracy of the information provided by the customer (see Table 1). The analytical results in this research report only relate to the samples analysed. Interpretations, advice and other not merely objective information are not covered by the EN ISO/IEC 17025 accreditation. Further information on measurement uncertainty and sample preservation will be provided upon request.

Dates of analysis:

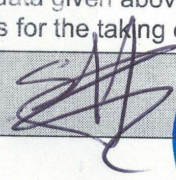
- DNPH: 15/12/2021
- Tenax: 09/11/2021

This research report consists of 14 numbered pages, and the signature below confirms the authorisation of the analytical results according to EN ISO/IEC 17025.



M. Lor
Managing Director Servaco Product Testing

Sampling report

Testing laboratory / certification body: Normec Product Testing Honderdweg 13 9230 Wetteren Belgium		Sampler (name, company, telephone): Bowiq Benelux BV (003120 5857108)	
Name of the manufacturer at the place of sampling (address/stamp): Jx BV, Hullenbergweg 278, 1101 BV, Amsterdam, The		Manufacturer (if deviating from company's name at the place of sampling):	
Name of the product: BoSpray		Type of product (e.g. GEV product group, laminate, textile flooring, PVC- flooring): Acoustical spray plaster	
Model/program/series:		Batch No: 164587	
Article No: BoSpray Misc.:		Date of batch production: 29/9/20	
Sample is taken from Store	☐ Production ☐ Store ☐ Miscellaneous	How had the product been stored prior to sampling? in the store	☐ Open ☐ In the stack ☐ Wrapped up
	Place of storage: Wierden		Packing material:
Specifics (possible negative influences by emission at the place of taking the sample, petrol emissions, solvent emissions from production, uncertainties, questions, etc.):			
Cut edges (identification of cut edges when present and identification of new surfaces and surface to be exposed in the emission test):			
Confirmation The signer herewith confirms the correctness of the data given above. The sample was selected, drawn and packed personally in accordance with the instructions for the taking of samples.			
Date of sampling: 26/10/20		Signature:  (Stamp) 	

Servaco/Normec Product Testing – Joint venture with VITO

Sites:

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BTW BE-0723.519.238

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