



21.12.2009

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Assignment: Emission measurements for the emission classification of building materials

Product information:

Product type	Insulation material
Product name	Aerogel Spaceloft Spaceline
Production date (by the manufacturer)	9.9.2009
Sending date (by the manufacturer)	13.10.2009
Description of packaging and transport	Wrapped in Al-foil in cardboard box
Product received at the testing laboratory, date	14.10.2009
Test specimen preparation / Deviation from protocol	Rears together, edgings taped
Test period started, date	15.10.2009
Conditions during ageing [°C] [RH%]	22.2°C 42.5%
Emission sampling, date	16-17.11.2009

Chamber technique:

TVOC, VOC formaldehyde, ammonia	Chamber volume [m ³]	Air change rate [h ⁻¹]	Temperature [°C±°C]	RH [%]	Test specimen loading factor [m ² m ⁻³]
	0.058	1	22.9±0.2	45	2.1

Sensory evaluation	Chamber volume [m ³]	Supply air flow-rate [L s ⁻¹]	Temperature [°C±°C]	RH [%]	Test specimen loading factor [m ² m ⁻³]
	0.1	0.9	22.3	51.3	24

Emission sampling and analytical methods:

	Standard or own validated method	Adsorbent/ Absorbent	Sampling volume [L]	Quantification/ Analysis method	Detection limit of the method used
VOC	ISO 16000-6:2004	Tenax TA	5.7 - 7.7	GC-MS	0.001
Formaldehyde	ISO 16000-3:2001	DNPH-glass fibre filter	39.9	LC-UV	0.02
Ammonia	TY01-TY-014	diluted sulphuric acid	247.2	LC-UV	0.01
Sensory evaluation	The number of the evaluators 13.11.2009 / 5				

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Results: Specific emission rates, SER

TVOC	mg/(m² h) as toluene equivalents between C ₆ -C ₁₆	0.002
Single VOCs the emission of which exceed C ₆ -C ₁₆ , SER > 0.005 mg/(m² h)	See separate table below.	
Single VOCs outside the frame C ₆ -C ₁₆ the emission of which exceed SER > 0.005 mg/(m² h)	See separate table below.	
Formaldehyde	mg/(m² h)	< 0.02
Ammonia	mg/(m² h)	0.01
Carcinogens between C ₆ -C ₁₆ , SER> 0.002 mg/(m² h)	mg/(m² h) as toluene equivalents or MS quantification	< 0.002
Chromatogram, main compounds identified	Appendix	
Sensory evaluation	Average of acceptability	1.0

Single VOCs, the emission of which exceed C₆-C₁₆ >0.005 mg/(m² h) as toluene equivalents

RT	Compound	CAS	mg/ (m²h)
		TVOC	0
		Identified	
		Identification-%	

Single VOCs outside the frame C₆-C₁₆, the emission of which exceed SER >0.005 mg/(m² h) as toluene equivalents

RT	Compound	CAS	mg/ (m²h)
2.38	tert-Butyldimethyl silanol	18173-64-3	0.005
		TVOC	
		Identified	
		Identification-%	

Measurement uncertainty

SER TVOC, VOC	±18 %
SER Formaldehyde	±20 %
SER Ammonia	±18 %

Appendices Chromatogram
Sensory evaluation results in detail



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Specialized Research Scientist



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