

Emissionsrapport Scotte GT7

Metod och utförande

Emissionsmätningen utfördes enligt standarden för "Emission measurements for the Finnish Classification of Building Materials" med metoder enligt nedan, av VTT Expert Services (rapport VTT-S-01764-18/1).

Emissionsmätning av flyktiga organiska ämnen, ammoniak och formaldehyd, samt en sensorisk utvärdering, utfördes för produktprovet efter fyra veckors konditionering under standardförhållanden.

Prov	Appliceringsdag	Test specimen preparation
Scotte GT7	2018-01-30	on glass plate with 250 µm applicator, wet consumption ~204 g/m ²

Provningsförhållanden

Testcellens volym	0,5 m ³
Area på provet	0,50 m ²
Luftväxling	0,5 h ⁻¹
Areaspecifik luftväxlingshastighet	0,50 m ³ /m ² h
Temperatur	23±1°C
Relativ luftfuktighet	50 ± 5% RH

VOCs were adsorbed on Tenax TA adsorbent^{1,2}. VOC samples were analysed with a gas chromatograph after thermal desorption^{3,4}. The gas chromatograph is equipped with a mass selective detector (MSD).

The total amount of VOCs (TVOC) was determined by summing the individual concentrations of identified and unidentified compounds eluting from a gas chromatographic column between hexane and hexadecane inclusively, at concentration above 5 µg/m³ in reference room, all calculated as toluene equivalent from the MSD detector. The total amount of SVOCs (TSVOC) was calculated by summing the compounds between hexadecane and docosane at above 5 µg/ m³ in reference room, all calculated as toluene equivalent from the MSD detector.

Single VOCs were identified from the mass selective detector total ion chromatogram using Wiley 10th/NIST 2011 spectral library and quantified from the MSD-chromatogram with compound / compound group standard (for compounds exceeding 5 µg/ m³ concentration in reference room). The lowest detection limit of the measuring method for single VOCs is on the level of 1 µg/m³.

Formaldehyde and ammonia were absorbed in dilute sulphuric acid. Formaldehyde was analysed spectrophotometrically with acetylacetone method^{5,6}. Ammonia was analysed potentiometrically with ammonia specific electrode⁷.

An untrained panel of 15 members performed the sensory evaluation of the product^{1,8}. The panellists evaluated the acceptability of the chamber outlet air in scale clearly unacceptable ... fully acceptable (-1...+1).

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Resultat

Resultaten av emissionsmätningen sammanfattas i följande tabell. Alla emissionsfaktorer anges i toluenekvivalenter.

	Specific Emission Rate, SER				Sensory evaluation
	TVOC/TSVOC	Formaldehyde	Ammonia	Carcinogens	
	[mg/m ² h] (Toluene equivalents)	[mg/m ² h]	[mg/m ² h]	[mg/m ² h] (Toluene equivalents)	
Scotte GT7	<0,2	<0,05	<0,03	<0,005	+0.8
M1 classification criteria	<0,2	<0,05	<0,03	<0,005	≥ 0.0
Method	EN 16516* EN ISO 16000-9* EN ISO 16000-6*	EN 717-1	In-house method*		EN ISO 16000-28

* Method is accredited for the test institute

Den testade produkten uppfyller samtliga kriterier för M1-märkningen.

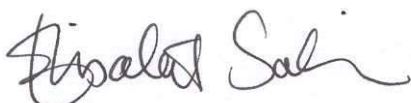
Measurement uncertainty

- TVOC/VOC emission factor > ±25 %
- Formaldehyde emission factor > ±23 %
- Ammonia emission factor > ±33 %

References

1. Protocol for Chemical and Sensory Testing of Building Materials. Version 15.11.2015 (<http://m1.rts.fi/>)
2. SFS-EN ISO 16000-9 Determination of the emission of volatile organic compounds from building products and furnishing. Emission test chamber method.
3. ISO 16000-6 Determination of volatile organic compounds in indoor and test chamber air by active sampling on Texax TA® sorbent, thermal desorption and gas chromatography using MS or MS-FID.
4. EN 16516 Construction products: Assessment of release of dangerous substances. Determination of emissions into indoor air.
5. EN 717-1. Wood based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method October 2004.
6. In-house method. Determination of formaldehyde using spectrometric acetylacetone-method.
7. In-house method. Determination of ammonium concentration in indoor air.
8. ISO 16000-28 Determination of odour emissions from building products using test chambers.

Tikkurila Sverige AB



ELISABET SAHLIN
SUSTAINABILITY MANAGER
TEL: +46 (0) 8 775 63 56

TIKKURILA SVERIGE AB
TEXTILGATAN 31
S-120 86 STOCKHOLM