

CEN TC 351 WG 2
Emissions from construction products into indoor air

CEN/TC 351 conference,
 16-17 October 2019, Vilnius (LT)

afnor
 NORMALISATION

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Work assignment :

"Development of horizontal standardized assessment methods for harmonized approaches relating to dangerous substances under the construction products directive (CPD) - Emission to indoor air."

Mandatory work of WG 2 under the mandate M/366 of the European Commission

➤ A consistent evaluation method for all types of construction products (comparable results with different materials) to evaluate construction product emission in normal condition of use :



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EN 16516 October 2017

Scope

Method for the determination of emissions into indoor air from construction products of :

- Volatile organic compounds (VOC),
- Semi-Volatile Organic Compounds (SVOC)
- Very volatile aldehydes

based on the use of a test chamber with an harmonized scenario



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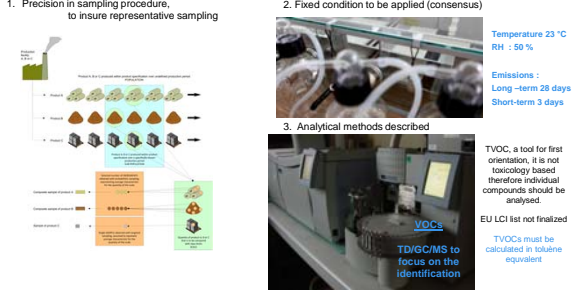
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EN 16516 Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air

- Precision in sampling procedure, to insure representative sampling
- Fixed condition to be applied (consensus)
 - Temperature 23 °C
 - RH : 50 %
 - Emissions : Long-term 28 days
 - Short-term 3 days
- Analytical methods described
 - TVOC, a tool for first orientation, it is not toxicology based therefore individual compounds should be analysed.
 - EU LCI list not finalized
 - TVOCs must be calculated in toluene equivalent
 - TDGC/MS to focus on the identification



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Conversion of the test result into indoor air concentration in a model room

Creation of a scenario reflecting the use of the material in the real life. This was call the model room.

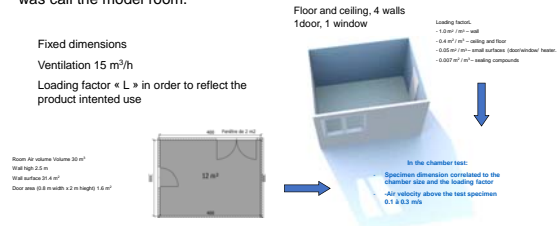
Fixed dimensions
 Ventilation 15 m³/h
 Loading factor « L » in order to reflect the product intended use

Floor and ceiling, 4 walls
 1door, 1 window

Loading factor:
 - 0.001 m²/m² wall
 - 0.4 m²/m² ceiling and floor
 - 0.05 m²/m² small surface (door/window/beam...)
 - 0.002 m²/m² loading component

In the chamber test:
 - Specimen dimension normalized to the chamber size and the loading factor
 - Air velocity above the test specimen 0.1 to 0.2 m/s

The results of the test are comparable and allow the decision about the use (implementation on the market) for any specific construction material whatever this material will be used for.



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- EN 16516:2017/prA1 Amendment on ammonia emissions (normal conditions of use)
- Finalized document EN 16516/prA1 expected for end of march 2020
- CEN/TR 17304 on ammonia emissions at 90% RH from cellulose based insulation product published in July 2019



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- **New project (WI 00351042) Methods for the determination of N-nitrosamines in air samples derived by EN 16516**

A Task Force created on Sept 18, 2019 with participants from Germany, UK and France.

A 1st meeting planned on December 16, 2019.


First step : a Technical Specification.



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Guidance document on a broader application of the model room TC 351 (work conducted under 2017-12.8_Phase IV of the SA 2017-12)

Historical aspects :
 Model room comes from ENV 13419 -1 (transposed in EN ISO 16000-9:2006), from Denmark (children's room size of 17 m³).
 More realistic scenario applied in EN 16516:2017 (30 m³), more reliable to the size of European room (bedroom).


Other field where a reference room is used
 The use of a model room already adopted for dose assessment CENTR17113



Potential broader use (still on discussion)

- To test furniture, combustible air fresheners, printers, cleaning products, candles, ...
- For other scenarios (in case of climate changes...)

[Final document for comment by the end of January 2020](#)



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Next CEN TC 351 WG 2 meeting on March 19, 2020, at AFNOR.

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THANK YOU FOR YOUR ATTENTION

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