



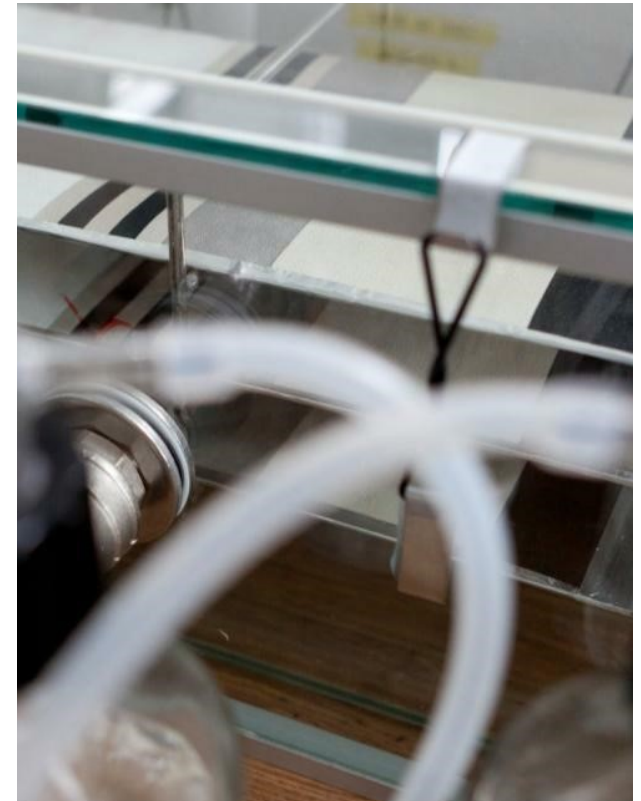
Harmonization effort and results for VOC evaluation under the CPR

18/11/2020 – François MAUPETIT

EN 16516 : Construction products:
Assessment of release of dangerous
substances – Determination of emissions
into indoor air (CEN, 2017)

- > Characterization of VOC, formaldehyde, ammonia emissions from construction products
- > Intended conditions of use of products (emission scenarios)
- > Emissions assessed using the reference room concept

- > Developed by CEN TC351 WG2
- > Based on pre existing EN ISO 16000 standards
- > EN 16516 (or EN ISO 16000 standards) already widely used in the EU for mandatory requirements (D, B, F) or voluntary labels (e.g. M1, EC1 Emissioncode, Blauer Engel, Nature plus, EU Ecolabel, etc.)



Health-related evaluation of VOC emissions from building products is based on the LCI concept

- > LCI is a limit value derived from toxicological and risk assessment principles
- > Evaluation of individual VOC emission ($C_i < LCI$) or global emissions from a product ($R = \sum (C_i / LCI) < 1$)
- > EU LCI are already used in the EU for mandatory requirements (D, B) or voluntary labels (e.g. M1, EC1 Ecode, Blauer Engel, Nature plus, EU Ecolabel, etc.)

December 2019

Agreed EU-LCI values

No.	CAS no.	Compound	EU-LCI ($\mu\text{g}/\text{m}^3$)	Status of EU-LCI value	Year of adoption
1		Aromatic hydrocarbons			
1-1	108-88-3	Toluene	<u>2900</u>	Derived EU-LCI	2013
1-2	100-41-4	Ethylbenzene	<u>850</u>	Derived EU-LCI	2013
1-3	1330-20-7 106-42-3 108-38-3 95-47-6	Xylene (o-, m-, p-) and mix of o-, m- and p-xylene isomers	<u>500</u>	Derived EU-LCI	2013
1-4	98-82-8	Isopropylbenzene (cumene)	<u>1700</u>	Derived EU-LCI	2017
1-5	103-65-1	n-Propylbenzene	<u>950</u>	Derived EU-LCI (read-across)	2013
1-6	108-67-8 95-63-6 526-73-8	Trimethylbenzene (1,2,3-,1,2,4-,1,3,5-)	<u>450</u>	Derived EU-LCI	2013
1-7	611-14-3	2-Ethyltoluene	<u>550</u>	Derived EU-LCI (read-across)	2014
1-8	527-84-4 535-77-3 99-87-6 25155-15-1	Cymene (o-, m-, p-,) (1-isopropyl-2(3,4)-methylbenzene) and mix of o-, m-, and p-cymene	1000	Ascribed EU-LCI	2013
1-9	95-93-2	1,2,4,5-Tetramethylbenzene	<u>250</u>	Derived EU-LCI (read-across)	2016
1-10	104-51-8	n-Butylbenzene	<u>1100</u>	Derived EU-LCI (read-across)	2014
1-11	99-62-7 100-18-5	Diisopropylbenzene (1,3-, 1,4-)	<u>750</u>	Derived EU-LCI (read-across)	2013
1-12	2189-60-8	Phenyl octane and isomers	<u>1100</u>	Derived EU-LCI (read-across)	2013
1-16	100-42-5	Styrene	<u>250</u>	Derived EU-LCI	2013

Full list available on

https://ec.europa.eu/growth/sectors/construction/eu-lci/values_en

Two different approaches:

- > Pass or fail system, long list of substances
- > Class system, short list of substances

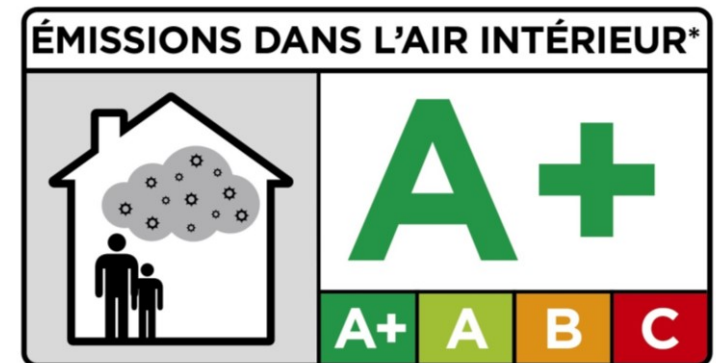
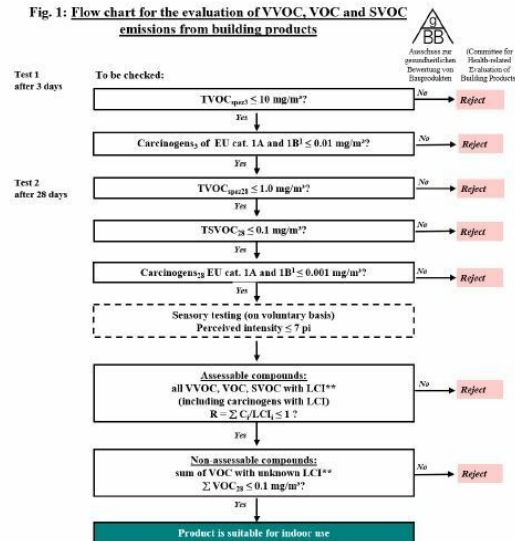
Can be combined in harmonized VOC classes

> 4 parameters, 2-4 classes:

- Formaldehyde
- Individual VOC ($R < 1$)
- Carcinogenic VOC
- TVOC

> Consensus if the lowest EU class is at least as protective as lowest existing classes

AgBB - Evaluation procedure for VOC emissions from building products; August 2018
Part 3: LC1 values





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le futur en construction