IAQ Consulting

Harmonisation framework for the health based evaluation of construction products emissions to indoor air

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IEH Consulting

The integrated environment and health consultancy

Human exposure to air pollution sources

Time exposed	
Outdoors – **10%**	Indoors – **90%**
Pollution Sources	
Outdoors	**Indoors**
Traffic	*All outdoor sources*
Industrial and domestic emissions	Construction products
	Furnishings
Natural sources e.g. volcano, biogenic, wind blown dusts, fires	Electrical goods
	Cosmetics & Cleaning products
	Smoking and vaping
	Cooking & heating appliances
	Ground contaminants
	Candles and incense
	Air freshener, etc., etc.

Construction products: Main indoor emission labelling schemes in Europe

Belgium (regulatory)

Denmark, DICL (voluntary)

Finland, M1 (voluntary)

France, Anses (regulatory), AFSSET (voluntary)

Germany, AgBB (regulatory)

E class (formaldehyde only)

Plus a range of sector schemes such as ecolabel, nature plus, blue angel…

Common features

Environmental chamber test of product to determine chemical emission rate; EN ISO 16000-9

Also differences

e.g. TVOC threshold, use of sensory tests, requirements for individual VOCs

Harmonisation of approaches in Europe sought through a ***European Collaborative Action*** and ***CEN (TC351 WG2)***

European harmonisation

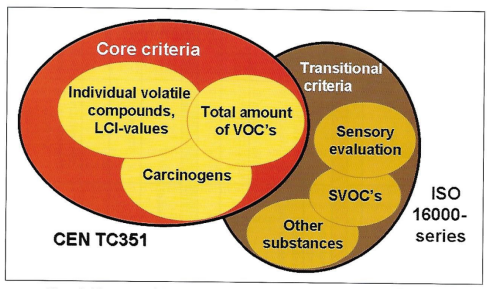


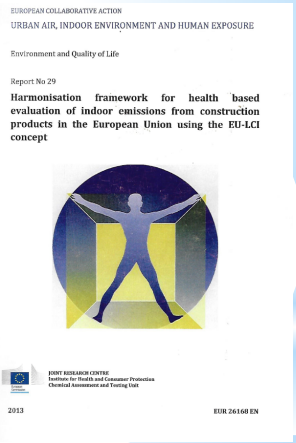
Figure 7. The concept of the harmonisation framework for indoor labelling schemes in EU.

CEN TS 16516: 2013

EN 16516: 2017

Harmonisation of LCI values

- EU-LCIs are health-based values used to evaluate emissions after 28 days from a *single product* during a laboratory test chamber procedure (as defined in the CEN TC 351 harmonised standard)
- EU-LCIs are applied in product safety assessment with the ultimate goal to avoid health risks from *long-term* exposure for the general population
- EU-LCI values are derived (since 2015) by a group of experts working under a mandate from DG Growth



EU LCI Application

- **6.3 Considering the EU-LCI in relation to combined effects of chemicals** 'applying the existing R-value concept - as opposed to several health end-point dedicated R-values - is considered to provide a pragmatic and, from a toxicological perspective, conservative approach'.
- **6.4 Harmonisation needs for TVOC…** 'TVOC does provide supplementary information when combined with the health-based evaluation using the EU-LCI concept and the limitation of CMR compounds.'
- Currently there are 111 EU-LCIs with an agreed programme of work to evaluate a further 80 substances.
- Full information about the EU Sub Group on EU-LCI Values and the current list of EU-LCI values is available at https://ec.europa.eu/growth/sectors/construction/eu-lci_en.

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Use of LCI in assessing mixtures

R value = sum of all R_i values

Ri value = Ratio C_i / LCI_i, where

C_i is the reference room mass concentration of compound *i*, and

LCI_i is the LCI value of compound *i*

Requirement R<1