

The Finnish Classification of Indoor Environment and Material Emissions

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Finnish Classification of Indoor Environment 2008

- An update of the classification first published in 1995 and revised in 2001.
- A voluntary system for setting target values for indoor environment in new construction

Finnish Classification of Indoor Environment

**Target values for indoor air quality
and climate, acoustics and lighting (S)**

**Instructions for design and
construction (P)**

**Building and
constructions**

HVAC systems

**Requirements for building
products (M)**

**Classification of
emissions from
building
materials**

**Classification of
cleanliness of
ventilation
components**

Target values (S)

- Three categories
 - S1 "individual" ~ cat I of EN15251
 - S2 "comfortable" ~ cat II
 - S3 "satisfactory" – building code level
- Specified from client's and engineer's viewpoints

SI2008 S1: Individual indoor environment

- The indoor air quality of the space is very good and there are no discernible odours.
- There are no damages or pollution sources in spaces and constructions that are connected with the indoor air
- The thermal environment is comfortable, and draught or overheating does not occur. The user of the space can individually control the thermal environment.
- The acoustic environment of the spaces is very good and the good lighting environment can be individually controlled.

Technical target values

- Operative temperature (EN 15251 applied in Finnish climate)
- Air velocity (based on EN ISO 7730)
- Carbon dioxide (based on EN 15251)
- Outdoor air flow rates (EN 15251, very low emitting buildings)
- Radon
- Lighting (based on SFS-EN 12464-1:2003)
- Acoustics (based on SFS 5907)

Some target values have been replaced with prescriptive criteria

- *VOC, ammonia, formaldehyde* → use low emitting building materials
- *Fine particles* → use F9/F8 class filtration of supply air (EN 13779)
- *Dust and dirt* → criteria for cleanliness of surfaces of the new building
- *Microbes* → ensure good control of moisture in design and construction
- *ETS* → ban smoking indoors

Organisation of M1-labelling

Development of criteria
Finnish Society of Indoor Air
Quality and Climate

Product manufacturing
Finnish and foreign industry

Product testing
Independent laboratories

**Administration of
M1-labelling**
The Building Information Foundation RTS
Committee PT 17 Indoor Air Classification
- 19 members + secretary (RTS)
- industry representation

Requirements for emission class M1

- TVOC $< 0,2 \text{ mg/m}^2, \text{h}$
- Formaldehyde $< 0,05 \text{ mg/m}^2, \text{h}$
- Ammonia $< 0,03 \text{ mg/m}^2, \text{h}$
- Carcinogenic comp (IARC cat 1) $< 0,005 \text{ mg/m}^2, \text{h}$
- Odour acceptability $> 0,1$ (scale $-1 \dots +1$)

- *Plasters and tiling products, levelling agents, putty, mastics, fillers, screeds and renders shall not contain casein.*

M1 labelled products

- Today there are over 1500 labelled products by over 110 producers.
- The largest product groups:
 - Plaster, rendering, putties, fillers, flooring, paints and varnishes, building boards and mineral wool.
- See *www.rts.fi* for complete listing

No changes in the criteria for M1- labelling (at this time)

- We follow the work of CEN TC351 on CE-marking of emissions from building materials
- We participate in the harmonisation of test methods
- New product groups have been added to the M1-labelling of ventilation components
 - Sound attenuators
 - Supply air filters