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Harmonisation of standards for testing emissions into indoor air

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Overview

- **Introduction**
- **Testing standards : validation steps and drafting steps – Reference method**
- **Sampling and test specimen**
- **Quantification – calibration**
- **Short term and long term emissions**
- **Reference chamber and testing chamber**

Introduction

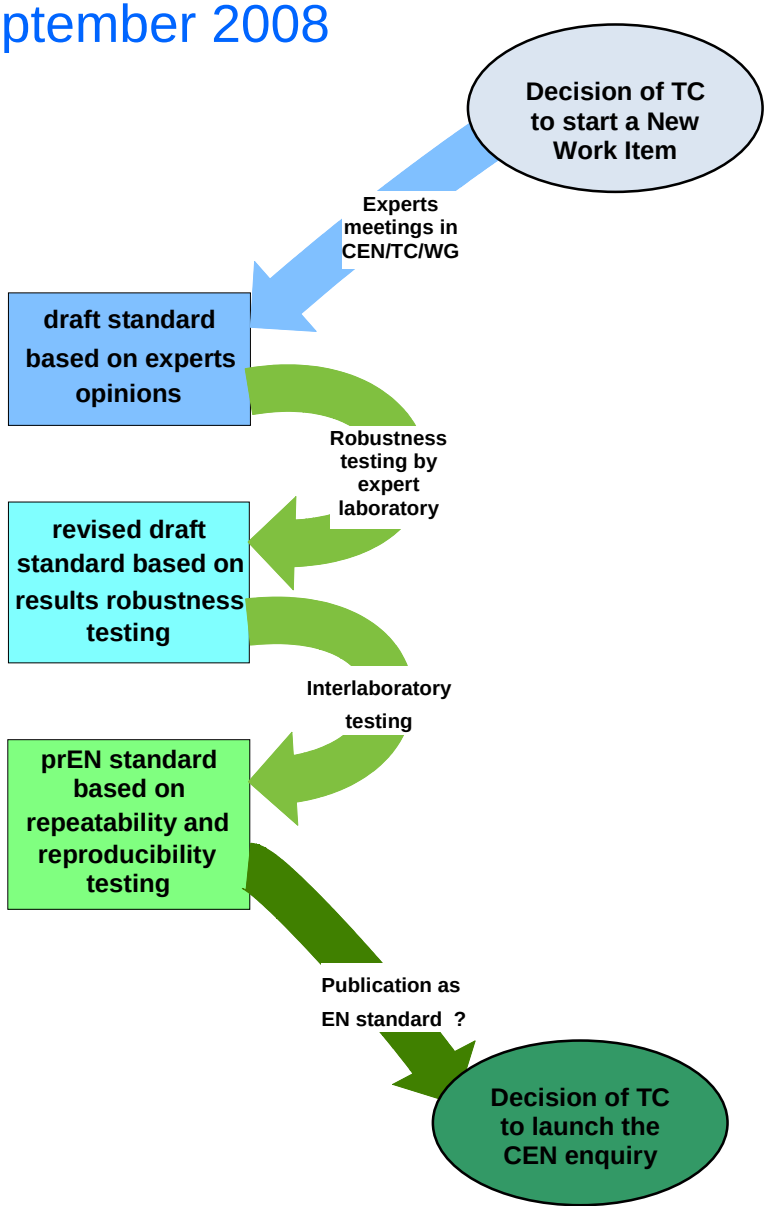
- Long standing IAQ assessment and emission source characterisation
- Long standing harmonised standards but still harmonisation needs
- Complex scope of harmonisation : not only testing, also expression of results

Test standards : validation steps and drafting steps – Reference method

- **CEN Guide on validation tasks in the process of standardisation of environmental test methods.**
  Validation of the whole measurement process as well as individual steps (April 2008)
- **Reference ("horizontal") method and other methods**

Testing standards : validation steps and drafting steps

Flow chart of the validation tasks in the standardisation process



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Sampling

- Identification of the product – source to be tested. Construction products to be considered in mandate M366 are specified in harmonised CEN standards (hEN) or in ETA and results are dedicated to CE marking (and associated AoC)
- The sample to be tested ("test specimen") shall reflect the product in use

Quantification - calibration

- Reliable and unbiased quantification for complex parameter e.g. VOCs requires calibration reference materials. They are not always available for all VOCs and are expensive.
- Alternative route with toluene equivalency
- ……

Short term and long term emissions (1)

- The continuous injection of clean air in the test chamber allows emission measurement at any time after the start of the test
- Main goal for testing is long term evaluation. This is done by measuring stabilised emission. For most substances this is achieved at 28 days.

Short term and long term emissions (2)

- Evaluation of short term emission is also needed. This is done by measuring emissions at 3 days. Definition of the starting time is critical for reliability.
- Secondary, simplified methods may be used provided that their traceability, correlation with the reference method has been verified

Reference chamber and test chamber (1)

- It is not possible to test emissions under all possible conditions-situations.
- A reference chamber is defined
- The emission rate is expressed in concentration in this chamber in proportion to the amount of product in this reference chamber.

Reference chamber and test chamber(2)

- The test chamber is designed according to the testing requirements so that the emission rate determined under the testing conditions applied in the test chamber can be expressed in concentration in the reference chamber.
- The test chamber shall also accommodate the test specimen prepared according to the applicable sampling requirements

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