

# Implementation of health aspects (ER N°3) in the Construction Products Directive (CPD) regarding emissions to indoor air

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## 1 Introduction

The perception about the close relationship between indoor air quality and human health resulted in more and more concern among all stakeholders about healthy buildings and also healthy construction products. Standardisation work on test methods for dangerous substances in the field of construction products is currently ongoing at European level in CEN/TC 351 and EOTA PT9. Current European harmonisation initiatives and Belgian research projects in this field will be elaborated.

## 2 Materials/methods

Emission tests are performed on construction product families covered by the CPD by means of test chambers of different sizes: the so called  $\mu$ -chamber (Figure 1), 1m<sup>3</sup> & 50 m<sup>3</sup> test chambers and FLEC. VOCs are extracted by thermal desorption, analyzed with gas chromatography and identification of the compounds is done by mass spectrometry (Figure 2). Aldehydes are analyzed by means of HPLC coupled with UV detection.



Figure 1:  $\mu$ -chamber Figure 2: Thermal Desorption-GC-MS setup

## 3 Results

The main goal of the different ongoing research projects coordinated by BBRI is to improve the flow of knowledge and information vis-à-vis normalisation activities in the domain of indoor air measurements, indoor product emission

testing, labelling and certification by proposing an evaluation method and standardised assessment methods for a harmonised approach relating to emissions from building materials into indoor air for implementation in Belgium. This approach will comply with current harmonisation efforts ongoing on European level. For the purpose of harmonisation different types of evaluation protocols (prEN 15052, AgBB, AFSSET, etc) were examined.

Mandate M/366 issued by CEN in April 2005 mentions the use/development of simplified measurement/test methods of emission. In this context  $\mu$ -chamber experiments were undertaken and comparison was made with test chambers of various sizes.

Apart from the selection and adaptation of test methods for VOCs (including SVOCs and VVOCs), attention was also given to test methods for the determination of particle emission from building materials, methods for odour determination and methods for evaluating the microbial resistance.

## 4 Conclusions

Construction products may only be placed on the market in the European Union if they accord with the harmonised technical specifications and bear the CE mark. This requires that consideration is given to hygiene, health and environmental protection.

Manufacturers and authorities need transparent schemes in place to assess the performance of the product. The ongoing (Belgian) research activities support these developments.