

**Building products - Determination of the emission of
volatile organic compounds - Part 1: Emission test
chamber method**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

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English version

**Building products - Determination of the emission of volatile
organic compounds - Part 1: Emission test chamber method**

Produits de construction - Détermination des émissions de
composés organiques volatils - Partie 1: Méthode de la
chambre d'essai d'émission

Bauprodukte - Bestimmung der Emission von flüchtigen
organischen Verbindungen - Teil 1: Emissionsprüfkammer-
Verfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 264 "Air quality", the secretariat of which is held by DIN.

This prestandard consists of four parts:

- Part 1: Emission test chamber method;
- Part 2: Emission test cell method;
- Part 3: Procedure for sampling, storage of samples and preparation of test specimens;
- Part 4: Determination of VOCs; active sampling on Tenax TA, thermal desorption and gas chromatographic method.

Part 4 is under preparation within ISO/TC 146. It is intended that after the final voting stage, the CEN prestandard (Parts 1-3) will be taken over by ISO and the ISO standard (Part 4) will be taken over by CEN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The determination of volatile organic compounds (VOCs) emitted from building products using emission test chambers has objectives such as:

- to provide manufacturers, builders, and end users with emission data useful for the evaluation of the impact of building products on the indoor air quality;
- to promote the development of improved products.

The method can in principle be used for most solid and liquid (on solid substrate) building products used indoors.

1 Scope

This prestandard specifies a general laboratory test method for determination of the area specific emission rate of volatile organic compounds (VOCs) from newly produced building products under defined climate conditions. The method can also, in principle, be applied to aged products. The emission data obtained can be used to calculate concentrations in a model room.

This part of the prestandard applies to various emission test chambers used for determination of the emission of volatile organic compounds from building products.

Sampling, transport and storage of materials to be tested, and preparation of test specimens are described in ENV 13419-3. Air sampling and analytical methods for the determination of VOCs are described in part 4 of this prestandard.

A general description of an emission test chamber is given in annex C of this part of the prestandard.

This prestandard is not applicable for the determination of formaldehyde emissions from wood-based panels, for this purpose refer to ENV 717 „Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method“.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revisions. For undated references the latest edition of the publication referred to applies.

- ISO 554, Standard atmospheres for conditioning and / or testing - Specifications;
- ISO 1765, Machine-made textile floor coverings - Determination of thickness;
- ISO 8543, Textile floor coverings - Methods for determination of mass;
- EN 428, Resilient floor coverings - Determination of overall thickness;
- EN 430, Resilient floor coverings - Determination of mass per unit area;
- EN 13419-3, Building products - Determination of the emission of volatile organic compounds - Part 3: Procedure for sampling, storage of samples and preparation of test specimens;
- ENV 717-1, Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method“.

3 Definitions, abbreviations, symbols and units

3.1 Symbols and units

C_x	is the concentration of a VOC_x in the emission test chamber, in micrograms per cubic metre;
L	is the product loading factor, in square metres per cubic metre;
n	is the air exchange rate, in changes per hour;
q	is the area specific air flow rate ($= n/L$), in cubic metres per square metre and hour;
SER_a	is the area specific emission rate, in micrograms per square metre and hour;
SER_l	is the length specific emission rate, in micrograms per meter and hour;
SER_v	is the volume specific emission rate, in micrograms per cubic metre and hour;
SER_u	is the unit specific emission rate, in micrograms per unit and hour;
t	is the time after start of the test, in hours or days.