DD ENV
13419-2:1999

Building products — Determination of the emission of volatile organic compounds —

Part 2: Emission test cell method

ICS 13.040.99

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National foreword

This Draft for Development is the English language version of ENV 13419-2:1999.

This publication is not to be regarded as a British Standard.

It is being isued in the Draft for Development series of publications and is of a provisional nature because the subject matter is still under development requiring wider exposure. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the prestandard or to withdraw it. Comments should be sent in writing to the Secretary of BSI Subcommittee EH/2/3, Ambient atmospheres, at 389 Chiswick High Road, London W4 4AL, giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Summary of pages

This document comprises a front cover, an inside front cover, the ENV title page, pages 2 to 19 and a back cover.

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PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

ENV 13419-2

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English version

Building products - Determination of the emission of volatile organic compounds - Part 2: Emission test cell method

Produits de construction - Détermination des émissions de composés organiques volatils - Partie 2: Méthode de la cellule d'essai d'émission

Bauprodukte - Bestimmung der Emission von flüchtigen organischen Verbindungen - Teil 2: Emissionsprüfzellen-Verfahren

This European Prestandard (ENV) was approved by CEN on 6 May 1999 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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Full document details: DD ENV 13419-2:1999

Contents

	Page
Foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Definitions, abbreviations, symbols and units	5
4 Principle	6
5 Apparatus	7
6 Test conditions	8
7 Verification of the test conditions	9
8 Test specimens	10
9 Emission test cell preparation	10
10 Test method	10
11 Calculation of area specific emission rates and expression of results	11
12 Test report	12
Annex A (normative) **System for quality assurance / quality control**	14
Annex B (informative) **Examples of area specific air flow rates in a model room**	15
Annex C (informative) **Description of an example of an emission test cell**	16
Annex D (informative) **Bibliography**	18

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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.

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Introduction

The determination of volatile organic compounds (VOCs) emitted from building products using emission test cells 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.

- On-site (factory) quality control of products emitting volatile organic compounds.

- On-site investigation of building product surfaces.

The method can in principle be used for most building products used indoors.

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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 in principle also be applied to aged products. The emission data obtained can be used to calculate concentrations in a model room.

According to the definition of an emission test cell, it is also possible to perform non-destructive emission measurements on building products on-site in buildings. However, the procedure for such measurements is not described in this prestandard.

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.

An example of an emission test cell is described in annex C of this 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;
- **ENV 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 VOCx in the emission test cell, 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.

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