Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method

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EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

Käesolev Eesti standard EVS-EN 717-1:2004 sisaldab Euroopa standardi EN 717-1:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 21.12.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 717-1:2004 consists of the English text of the European standard EN 717-1:2004. This document is endorsed on 21.12.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

NATIONAL FOREWORD

Käsitlusala: This European Standard specifies a chamber method with three options of test chambers for the determination of the formaldehyde emission from wood-based panels in terms of the steady-state concentration in a climate chamber under defined conditions, which relate to typical conditions in real-life. This chamber method can also be applied to the estimation of formaldehyde concentrations under various conditions in practice, by the use of mathematical models.	**Scope:** This European Standard specifies a chamber method with three options of test chambers for the determination of the formaldehyde emission from wood-based panels in terms of the steady-state concentration in a climate chamber under defined conditions, which relate to typical conditions in real-life. This chamber method can also be applied to the estimation of formaldehyde concentrations under various conditions in practice, by the use of mathematical models.

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Võtmesõnad: conditione, definition, definitions, determination, formaldehyde, formaldehyde concentration, formaldehyde emissions, output, test chamber, test pieces, test reports, test results, testing, testing conditions, wood products, woodbased sheet materials, wooden boards

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Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method

Panneaux à base de bois - Détermination du dégagement de formaldéhyde - Partie 1 : Emission de for-maldéhyde par la méthode à la chambre

Holzwerkstoffe - Bestimmung der Formaldehydabgabe - Teil 1: Formaldehydabgabe nach der Prüfkammer-Methode

This European Standard was approved by CEN on 16 August 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 717-1:2004) has been prepared by Technical Committee CEN/TC 112 “Wood-based panels”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2005, and conflicting national standards shall be withdrawn at the latest by April 2005.

This document supersedes ENV 717-1:1998.

Compared to ENV 717-1:1998 the following modifications have been made.

a) Conditions for a reduced test period have been specified in Clause 10.

b) The requirements for the air-tightness of the test chamber in 8.2.2 have been changed.

This European Standard is one of a series, which specifies methods for determining formaldehyde potential in or formaldehyde release from wood-based panels. The other standards of this series are:

EN 120, *Wood based panels — Determination of formaldehyde content — Extraction method called the perforator method.*

EN 717-2, *Wood-based panels — Determination of formaldehyde release — Part 2: Formaldehyde release by the gas analysis method*.

EN 717-3, *Wood-based panels — Determination of formaldehyde release — Part 3: Formaldehyde release by the flask method*.

This European Standard is based on CEN report CR 213 “Particleboards — Determination of Formaldehyde Emission under Specified Conditions” and COST Project 613: Indoor Air Quality and its Impact on Man, Report No. 2: “Formaldehyde emission from wood-based materials: Guideline for the determination of steady state concentrations in test chambers”.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

Each testing institute is responsible for the quality of the test procedure. To ensure the reproducibility of the test results, it is recommended to participate in a round-robin test for calibration at least once a year.

1 Scope

This European Standard specifies a chamber method with three options of test chambers for the determination of the formaldehyde emission from wood-based panels in terms of the steady-state concentration in a climate chamber under defined conditions, which relate to typical conditions in real-life. This chamber method can also be applied to the estimation of formaldehyde concentrations under various conditions in practice, by the use of mathematical models.

This standard can also be used for the testing of formaldehyde emissions of products other than wood-based panels.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 326-1, *Wood-based panels — Sampling, cutting and inspection — Part 1: Sampling and cutting of test pieces and expression of test results.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1
volume of the chamber
total air volume of the unloaded chamber, including recirculating ventilation ducts, expressed in cubic metres (m^3)

3.2
loading factor
ratio of the total surface area of the test piece, excluding the area of the edges, to the volume of the chamber, expressed in square metres per cubic metre (m^2/m^3)

3.3
air exchange rate
quotient of air volume passing through the chamber per hour (m^3/h) and the chamber volume (m^3)

3.4
air velocity
velocity of the air near the surface of test pieces in the chamber in metres per second (m/s)

3.5
steady-state
state when the formaldehyde emission of the wood-based panels is quasi constant under the test conditions, this means that the formaldehyde concentration in the chamber remains constant

NOTE In practice, a true steady-state is not achievable because formaldehyde is emitted irreversibly. This standard defines a steady-state condition for the purpose of the test (see Clause 10).