

**Thermal performance of building products and components - Specific criteria for the assessment of laboratories measuring heat transfer properties - Part 4: Measurements by hot box methods**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1946-4:2000 sisaldab Euroopa standardi EN 1946-4:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.09.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1946-4:2000 consists of the English text of the European standard EN 1946-4:2000.</p> <p>This document is endorsed on 12.09.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This part 4 of this standard provides specific technical criteria for the assessment of laboratories to undertake steady-state heat transfer property measurements on products and components using calibrated or guarded hot box apparatus in accordance with EN ISO 8990:1996, including its application to doors and windows in accordance with EN ISO 12567, or using a heat flow meter in a hot box apparatus in accordance with EN 1934:1998.</p>	<p><b>Scope:</b></p> <p>This part 4 of this standard provides specific technical criteria for the assessment of laboratories to undertake steady-state heat transfer property measurements on products and components using calibrated or guarded hot box apparatus in accordance with EN ISO 8990:1996, including its application to doors and windows in accordance with EN ISO 12567, or using a heat flow meter in a hot box apparatus in accordance with EN 1934:1998.</p>
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**Võtmesõnad:**

ICS 91.100.01; 91.120.10

**English version**

Thermal performance of building products and building components  
**Specific criteria for the assessment of laboratories  
measuring heat transfer properties**  
Part 4: Measurements by hot box methods

Performance thermique des produits  
et composants pour le bâtiment –  
Critères particuliers pour l'évaluation  
des laboratoires mesurant les pro-  
priétés de transmission thermique –  
Partie 4: Mesurages selon les métho-  
des de la boîte chaude

Wärmetechnisches Verhalten von  
Bauprodukten und Bauteilen –  
Technische Kriterien zur Begutach-  
tung von Laboratorien bei der Durch-  
führung der Messungen von Wärme-  
übertragungseigenschaften – Teil 4:  
Messung nach dem Heizkasten-  
Verfahren

This European Standard was approved by CEN on 2000-03-04.

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.

The European Standards exist 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 89, "Thermal performance of buildings and building components", the secretariat of which is held by SIS.

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 October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

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

No existing European Standard is superseded.

This European Standard is divided into parts. The first part covers common criteria applicable to all heat transfer property measurements; each subsequent part covers the specific technical criteria applicable to each heat transfer property measurement method described in appropriate standards.

The following parts have been developed:

- Part 1: Common criteria
- Part 2: Measurements by the guarded hot plate method
- Part 3: Measurements by the heat flow meter method
- Part 4: Measurements by hot box methods
- Part 5: Measurements by the pipe test methods

Basic information on heat transfer in hot box apparatus and related temperature non-uniformities may be found in the CEN Technical Report "Heat transfer and errors in hot box apparatus", see [2] in the Bibliography.

Annex A of this European Standard is normative, annex B is informative.

## 1 Scope

This part 4 of this standard provides specific technical criteria for the assessment of laboratories to undertake steady-state heat transfer property measurements on products and components using calibrated or guarded hot box apparatus in accordance with EN ISO 8990:1996, including its application to doors and windows in accordance with EN ISO 12567, or using a heat flow meter in a hot box apparatus in accordance with EN 1934:1998.

It complements the common criteria in part 1. Guidance is given on the organization and contents of the equipment manual, the calibration and maintenance files and the measurement procedure document.

It provides information on mandatory equipment performance specifications and equipment description. It supplements error analysis and calculations for the equipment design not supplied in EN ISO 8990:1996, EN 1934:1998 and related standards.

It provides information on experimental procedures suitable for the assessment of instrument accuracy.

## 2 Normative references

This 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 standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1934:1998	Thermal performance of buildings - Determination of thermal resistance by hot box method using heat flow meter - Masonry
EN 1946-1:1999	Thermal performance of building products and components - Specific criteria for the assessment of laboratories measuring heat transfer properties - Part 1: Common criteria
EN ISO 6946	Building components and building elements - Thermal resistance and thermal transmittance - Calculation method (ISO 6946:1996)
EN ISO 7345	Thermal insulation - Physical quantities and definitions (ISO 7345:1987)
EN ISO 8990:1996	Thermal insulation - Determination of steady-state thermal transmission properties - Calibrated and guarded hot box (ISO 8990:1994)
EN ISO 12567:- <sup>1)</sup>	Thermal performance of windows and doors- Determination of thermal transmittance by hot box method (ISO 12567:-)

## 3 Definitions, symbols and units

### 3.1 Definitions

For the purposes of this standard, the following terms and definitions and the definitions given in part 1 of this standard, in EN ISO 7345, in EN 1934:1998, in EN ISO 12567 and those of EN ISO 8990:1996 not given in this standard, apply.

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<sup>1</sup> To be published