
Toplotna izolacija - Določanje toplotne prehodnosti v stacionarnem stanju - Metoda kalibrirane in zaščitene komore (ISO 8990:1994)

Thermal insulation - Determination of steady-state thermal transmission properties - Calibrated and guarded hot box (ISO 8990:1994)

Wärmeschutz - Bestimmung der Wärmedurchgangseigenschaften im stationären Zustand-Verfahren mit dem geregelten Heizkasten (ISO 8990:1994)

Isolation thermique - Détermination des propriétés de transmission thermique en régime stationnaire - Méthodes a la boîte chaude gardée et calibrée (ISO 8990:1994)

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ICS:

27.220

Rekuperacija toplote.
Toplotna izolacijaHeat recovery. Thermal
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EUROPEAN STANDARD

EN ISO 8990

NORME EUROPÉENNE

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English version

**Thermal insulation - Determination of steady-state
thermal transmission properties - Calibrated and
guarded hot box (ISO 8990:1994)**

Isolation thermique - Détermination des
propriétés de transmission thermique en régime
stationnaire - Méthodes à la boîte chaude
gardée et calibrée (ISO 8990:1994)

Wärmeschutz - Bestimmung der
Wärmedurchgangseigenschaften im stationären
Zustand Verfahren mit dem kalibrierten und dem
geregelten Heizkasten (ISO 8990:1994)

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This European Standard was approved by CEN on 1995-11-11. 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.

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CEN

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

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

Page 2
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Foreword

The text of the International Standard from Technical Committee ISO/TC 163 "Thermal insulation" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 89 "Thermal performance of buildings 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 February 1997, and conflicting national standards shall be withdrawn at the latest by February 1997.

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

Endorsement notice

The text of the International Standard ISO 8990:1994 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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Annex ZA (normative)
Normative references to international publications
with their relevant European publications

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 revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 7345	1987	Thermal insulation - Physical quantities and definitions	EN ISO 7345	1995

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INTERNATIONAL
STANDARD

ISO
8990

First edition
1994-09-01

**Thermal insulation — Determination of
steady-state thermal transmission
properties — Calibrated and guarded hot
box**
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*Isolation thermique — Détermination des propriétés de transmission
thermique en régime stationnaire — Méthodes à la boîte chaude gardée
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8990 was prepared by Technical Committee ISO/TC 163, *Thermal insulation*, Subcommittee SC 1, *Test and measurement methods*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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Introduction

Data on the thermal transmission properties of insulants and insulated structures are needed for various purposes including judging compliance with regulations and specifications, for design guidance, for research into the performance of materials and constructions and for verification of simulation models.

Many thermal insulating materials and systems are such that the heat transfer through them is a complex combination of conduction, convection and radiation. The methods described in this International Standard measure the total amount of heat transferred from one side of the specimen to the other for a given temperature difference, irrespective of the individual modes of heat transfer, and the test results can therefore be applied to situations when that is the property required. However, the thermal transmission properties often depend on the specimen itself and on the boundary conditions, specimen dimensions, direction of heat transfer, temperatures, temperature differences, air velocities, and relative humidity. In consequence, the test conditions must replicate those of the intended application, or be evaluated if the result is to be meaningful.

It should also be borne in mind that a property can only be assessed as useful to characterize a material, product or system if the measurement of the steady-state thermal transmission properties of the specimen and the calculation or interpretation of the thermal transmission characteristics represent the actual performance of the product or system.

Further, a property can only be characteristic of a material, product or system if the results of a series of measurements on a number of specimens from several samples provide sufficient reproducibility.

The design and operation of the guarded or calibrated hot box is a complex subject. It is essential that the designer and user of such apparatus has a thorough background knowledge of heat transfer, and has experience of precision measurement techniques.

Many different designs of the calibrated and the guarded hot box exist worldwide conforming to national standards. Continuing research and development is in progress to improve apparatus and measurement techniques. Also the variation of structures to be tested may be so great, and the requirements for test conditions so different, that it would be a mistake to restrict the test method unnecessarily and to confine all measurements to a single arrangement. Thus it is not practical to mandate a specific design or size of apparatus.

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