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**Thermal insulating products for building  
applications — Determination of  
behaviour under point load**

*Produits isolants thermiques destinés aux applications du bâtiment —  
Détermination du comportement sous charge ponctuelle*

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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 29769 was prepared by Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 1, *Test and measurement methods*.

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## Introduction

This International Standard comprises the original EN 12430:1998 and its Amendment 1:2006 prepared by Technical Committee CEN/TC 88, *Thermal insulating materials and products*, which has been amended by ISO/TC 163/SC 1 with reference to conditioning and testing conditions in tropical countries.

This International Standard is one of a series of documents specifying test methods, based on existing European Standards, that are being adopted by ISO. This “package” of standards includes the following group of interrelated documents.

International Standard	Respective EN standard
ISO 29465, <i>Thermal insulating products for building applications — Determination of length and width</i>	EN 822
ISO 29466, <i>Thermal insulating products for building applications — Determination of thickness</i>	EN 823
ISO 29467, <i>Thermal insulating products for building applications — Determination of squareness</i>	EN 824
ISO 29468, <i>Thermal insulating products for building applications — Determination of flatness</i>	EN 825
ISO 29469, <i>Thermal insulating products for building applications — Determination of compression behaviour</i>	EN 826
ISO 29470, <i>Thermal insulating products for building applications — Determination of the apparent density</i>	EN 1602
ISO 29471, <i>Thermal insulating products for building applications — Determination of dimensional stability under constant normal laboratory conditions (23 °C/50 % relative humidity)</i>	EN 1603
ISO 29472, <i>Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions</i>	EN 1604
ISO 29764, <i>Thermal insulating products for building applications — Determination of deformation under specified compressive load and temperature conditions</i>	EN 1605
ISO 29765, <i>Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces</i>	EN 1607
ISO 29766, <i>Thermal insulating products for building applications — Determination of tensile strength parallel to faces</i>	EN 1608
ISO 29767, <i>Thermal insulating products for building applications — Determination of short-term water absorption by partial immersion</i>	EN 1609

ISO 29768, <i>Thermal insulating products for building applications — Determination of linear dimensions of test specimens</i>	EN 12085
ISO 29769, <i>Thermal insulating products for building applications — Determination of behaviour under point load</i>	EN 12430
ISO 29770, <i>Thermal insulating products for building applications — Determination of thickness for floating-floor insulating products</i>	EN 12431
ISO 29771, <i>Thermal insulating materials for building applications — Determination of organic content</i>	EN 13820
ISO 29803, <i>Thermal insulation products for building applications — Determination of the resistance to impact of external thermal insulation composite systems (ETICS)</i>	EN 13497
ISO 29804, <i>Thermal insulation products for building applications — Determination of the tensile bond strength of the adhesive and of the base coat to the thermal insulation material</i>	EN 13494
ISO 29805, <i>Thermal insulation products for building applications — Determination of the mechanical properties of glass fibre meshes</i>	EN 13496

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# Thermal insulating products for building applications — Determination of behaviour under point load

## 1 Scope

This International Standard specifies equipment and procedures for determining the behaviour of products under a force applied to a small area of a test specimen at a given speed. This International Standard is applicable to thermal insulating products.

This International Standard can be used to determine whether the products have sufficient strength to withstand the forces applied directly to them either during installation or during application, mainly caused by pedestrian traffic.

**NOTE** The test methods given in the main body of this International Standard and in Annex A are reported and interpreted in different ways. The similarities that exist between the methods are not sufficient to permit reasonable comparisons to be made.

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## 2 Normative references (standards.iteh.ai)

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.

ISO 29768, *Thermal insulating products for building applications — Determination of linear dimensions of test specimens*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

## 3 Terms and definitions

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

### 3.1

#### point load

compressive force applied to a test specimen by a circular indenter with a circular cross section of 50 cm<sup>2</sup>, equivalent to a diameter of 79,8 mm

### 3.2

#### critical point

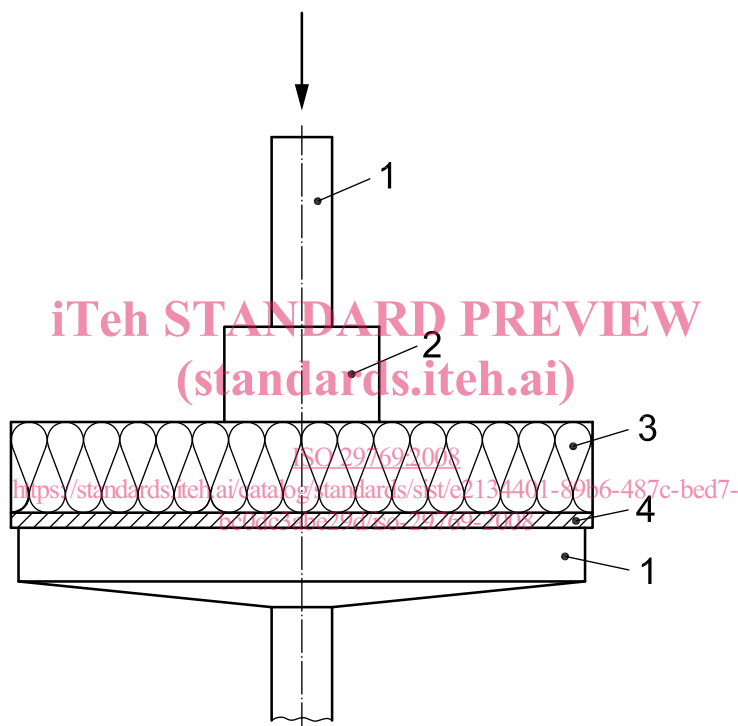
point on the force-deformation curve where a straight line, forming a tangent to the curve, separates from the curve [see Figure 4 a)]

## 4 Principle

A point load is applied with an indenter at a given speed in an axial direction perpendicular to the major faces of a squarely cut square test specimen and the compressive force at the critical point and/or the force for a given deformation is calculated.

## 5 Apparatus

**5.1 Compression-testing machine**, appropriate to the range of force and displacement involved and having one rigid, polished, fixed or vertically movable square or circular plane plate, the length of one side (or the diameter) of which is at least as large as the length (or the diagonal length) of the test specimen (see Figure 1).



### Key

- 1 connection to the testing machine
- 2 indenter
- 3 test specimen
- 4 supporting plate

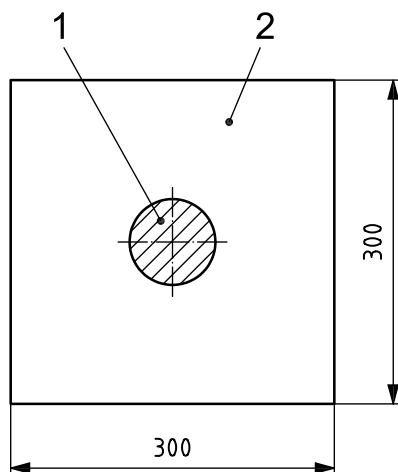
**Figure 1 — Test set-up**

**5.2 Cylindrical indenter**, steel, with a diameter of  $(79,8 \pm 0,1)$  mm, connected to a vertically movable or fixed support.

If appropriate, the indenter shall be connected to the compression machine through a centrally positioned ball joint to ensure that only an axial force is applied to the relevant area of the test specimen. The indenter or the supporting plate shall be capable of moving at a constant speed in accordance with 7.2 (see Figures 2 and 3).



Dimensions in millimetres



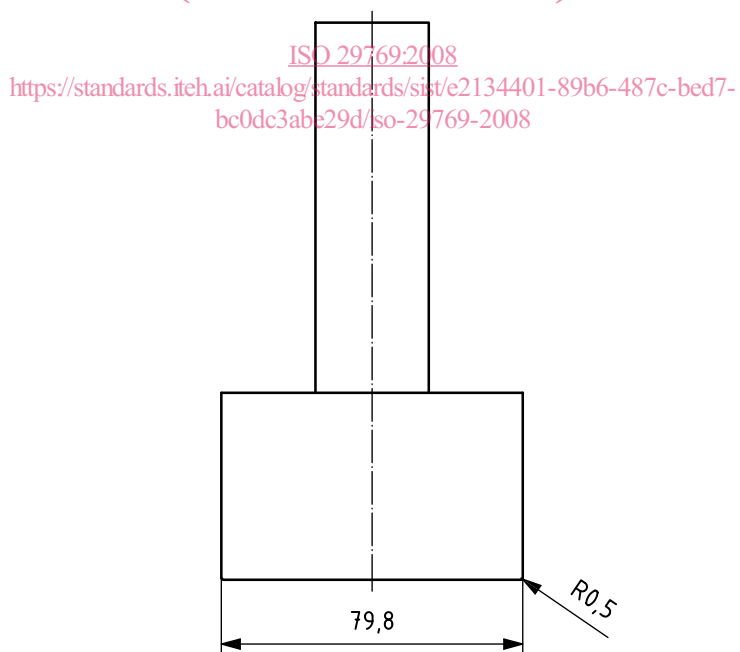
**Key**

- 1 cylindrical indenter
- 2 test specimen

**Figure 2 — Test specimen**

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Dimensions in millimetres



**Figure 3 — Cylindrical indenter**