

---

---

**Thermal insulating products for building  
applications — Determination of  
compressive creep**

*Produits isolants thermiques destinés aux applications du bâtiment —  
Détermination du fluage en compression*



This document is a preview generated by EVS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
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)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

|  |           |
|--|-----------|
| <b>Foreword</b> .....  | <b>iv</b> |
| <b>Introduction</b> .....  | <b>v</b>  |
| <b>1 Scope</b> .....   | <b>1</b>  |
| <b>2 Normative references</b> .....  | <b>1</b>  |
| <b>3 Terms and definitions</b> .....                                       | <b>1</b>  |
| <b>4 Principle</b> .....   | <b>3</b>  |
| <b>5 Apparatus</b> .....   | <b>3</b>  |
| <b>6 Test specimens</b> .....  | <b>4</b>  |
| 6.1 Selection of test specimens .....                                      | 4         |
| 6.2 Dimensions of test specimens .....                                     | 4         |
| 6.3 Number of test specimens .....   | 5         |
| 6.4 Preparation of test specimens .....                                    | 5         |
| 6.5 Conditioning of test specimens .....                                   | 5         |
| <b>7 Procedure</b> .....   | <b>5</b>  |
| 7.1 Test conditions .....  | 5         |
| 7.2 Stress selection .....   | 6         |
| 7.3 Test procedure .....   | 6         |
| 7.4 Duration of test .....   | 7         |
| <b>8 Calculation and expression of results</b> .....                       | <b>7</b>  |
| <b>9 Accuracy of measurement</b> .....                                     | <b>7</b>  |
| <b>10 Test report</b> .....  | <b>7</b>  |
| <b>Annex A (normative) Calculation method</b> .....                        | <b>10</b> |
| <b>Annex B (informative) Example of a linear regression analysis</b> ..... | <b>13</b> |
| <b>Bibliography</b> .....  | <b>16</b> |

## 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 16534 was prepared by Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 1, *Test and measurement methods*.

ISO 16534 includes the original EN 1606 prepared by Technical Committee CEN/TC 88 “Thermal insulating materials and products”, with the following clauses modified to reflect the conditions for tropical countries:

- Clause 6.5: Conditioning of test specimens;
- Clause 7.1: Test conditions;
- Clause 10: Test report.

## Introduction

ISO 16534 is one of a series of existing European Standards on test methods which were adopted by ISO. This group of International Standards comprises the following group of interrelated standards:

| ISO   | Title  | Respective<br>EN<br>standard |
|-------|--|------------------------------|
| 12344 | Thermal insulating products for building applications — Determination of bending behaviour   | EN 12089                     |
| 12968 | Thermal insulation products for building applications — Determination of the pull-off resistance of external thermal insulation composite systems (ETICS) (foam block test)      | EN 13495                     |
| 29465 | Thermal insulating products for building applications — Determination of length and width  | EN 822                       |
| 29466 | Thermal insulating products for building applications — Determination of thickness   | EN 823                       |
| 29467 | Thermal insulating products for building applications — Determination of squareness  | EN 824                       |
| 29468 | Thermal insulating products for building applications — Determination of flatness  | EN 825                       |
| 29469 | Thermal insulating products for building applications — Determination of compression behaviour   | EN 826                       |
| 29470 | Thermal insulating products for building applications — Determination of the apparent density  | EN 1602                      |
| 29471 | Thermal insulating products for building applications — Determination of dimensional stability under constant normal laboratory conditions (23 degrees C/50 % relative humidity) | EN 1603                      |
| 29472 | Thermal insulating products for building applications — Determination of dimensional stability under specified temperature and humidity conditions                               | EN 1604                      |
| 29764 | Thermal insulating products for building applications — Determination of deformation under specified compressive load and temperature conditions                                 | EN 1605                      |
| 29765 | Thermal insulating products for building applications — Determination of tensile strength perpendicular to faces   | EN 1607                      |
| 29766 | Thermal insulating products for building applications — Determination of tensile strength parallel to faces  | EN 1608                      |
| 29767 | Thermal insulating products for building applications — Determination of short-term water absorption by partial immersion  | EN 1609                      |
| 29768 | Thermal insulating products for building applications — Determination of linear dimensions of test specimens   | EN 12085                     |
| 29769 | Thermal insulating products for building applications — Determination of behaviour under point load  | EN 12430                     |
| 29770 | Thermal insulating products for building applications — Determination of thickness for floating-floor insulating products  | EN 12431                     |

|       |  |          |
|-------|--|----------|
| 29771 | Thermal insulating materials for building applications — Determination of organic content  | EN 13820 |
| 29803 | Thermal insulation products for building applications — Determination of the resistance to impact of external thermal insulation composite systems (ETICS)                 | EN 13497 |
| 29804 | 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 | EN 13494 |
| 29805 | Thermal insulation products for building applications — Determination of the mechanical properties of glass fibre meshes   | EN 13496 |
| 16534 | Thermal insulating products for building applications — Determination of compressive creep   | EN 1606  |
| 16535 | Thermal insulating products for building applications — Determination of long-term water absorption by immersion   | EN 12087 |
| 16536 | Thermal insulating products for building applications — Determination of long-term water absorption by diffusion   | EN 12088 |
| 16537 | Thermal insulating products for building applications — Determination of shear behaviour   | EN 12090 |
| 16546 | Thermal insulating products for building applications — Determination of freeze-thaw resistance  | EN 12091 |
| 16544 | Thermal insulating products for building applications — Conditioning to moisture equilibrium under specified temperature and humidity conditions                           | EN 12429 |
| 16545 | Thermal insulating products for building applications — Determination of behaviour under cyclic loading  | EN 13793 |

A further group of existing European Standards on test methods for products used to insulate building equipment and industrial installations comprises the following group of interrelated International Standards:

|           |   |          |
|-----------|---|----------|
| ISO 12623 | Thermal insulating products for building equipment and industrial installations — Determination of short-term water absorption by partial immersion of preformed pipe insulation      | EN 13472 |
| ISO 12624 | Thermal insulating products for building equipment and industrial installations — Determination of trace quantities of water soluble chloride, fluoride, silicate, sodium ions and pH | EN 13468 |
| ISO 12628 | Thermal insulating products for building equipment and industrial installations — Determination of dimensions, squareness and linearity of preformed pipe insulation                  | EN 13467 |
| ISO 12629 | Thermal insulating products for building equipment and industrial installations — Determination of water vapour transmission properties of preformed pipe insulation                  | EN 13469 |

# Thermal insulating products for building applications — Determination of compressive creep

## 1 Scope

This International Standard specifies the equipment and procedures for determining the compressive creep of specimens under various conditions of stress. It is applicable to thermal insulating products.

## 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.

ISO 29469, *Thermal insulating products for building applications — Determination of compression behaviour*

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 definitions apply.

### 3.1

#### **thickness**

linear dimension measured perpendicular to the length and width plane

#### **3.1.1**

##### **thickness**

$d$

original product thickness

#### **3.1.2**

##### **thickness**

$d_s$

initial thickness of the test specimen

#### **3.1.3**

##### **thickness**

$d_L$

thickness of the test specimen under the basic compressive stress of the loading device ('dead weight')

#### **3.1.4**

##### **thickness**

$d_0$

thickness of the test specimen 60 s after the beginning of the loading process

#### **3.1.5**

##### **thickness**

$d_t$

thickness of the test specimen at a given time,  $t$