SLOVENSKI STANDARD
SIST EN ISO 75-2:2004

01-oktober-2004

Nadomešča:
SIST EN ISO 75-2:2000

Polimerni materiali - Določanje temperature upogiba pod obremenitvijo - 2. del: Polimerni materiali, ebonit in z dolgimi vlakni ojačeni polimerni materiali (ISO 75-2:2004)

Plastics - Determination of temperature of deflection under load - Part 2: Plastics, ebonite and long-fibre-reinforced composites (ISO 75-2:2004)

Kunststoffe - Bestimmung der Wärmeformbeständigkeitstemperatur - Teil 2: Kunststoffe, Hartgummi und langfaserverstärkte Kunststoffe (ISO 75-2:2004)

Plastiques - Détermination de la température de fléchissement sous charge - Plastiques, ébonite et composites renforcés de fibres longues (ISO 75-2:2004)

Ta slovenski standard je istoveten z: **EN ISO 75-2:2004**

ICS:

83.080.01	Polimerni materiali na splošno	Plastics in general

SIST EN ISO 75-2:2004 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 75-2

May 2004

ICS 83.080.01; 83.060

Supersedes EN ISO 75-2:1996

English version

Plastics - Determination of temperature of deflection under load - Part 2: Plastics, ebonite and long-fibre-reinforced composites (ISO 75-2:2004)

Plastiques - Détermination de la température de fléchissement sous charge - Plastiques, ébonite et composites renforcés de fibres longues (ISO 75-2:2004)

Kunststoffe - Bestimmung der Wärmeformbeständigkeitstemperatur - Teil 2: Kunststoffe, Hartgummi und langfaserverstärkte Kunststoffe (ISO 75-2:2004)

This European Standard was approved by CEN on 20 June 2003.

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.

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Ref. No. EN ISO 75-2:2004: E

Foreword

This document (EN ISO 75-2:2004) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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 November 2004, and conflicting national standards shall be withdrawn at the latest by November 2004.

This document supersedes EN ISO 75-2:1996.

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.

Endorsement notice

The text of ISO 75-2:2004 has been approved by CEN as EN ISO 75-2:2004 without any modifications.

INTERNATIONAL STANDARD

ISO 75-2

Second edition
2004-05-15

Plastics — Determination of temperature of deflection under load —

Part 2: Plastics and ebonite

Plastiques — Détermination de la température de fléchissement sous charge —

Partie 2: Plastiques et ébonite

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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 75-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This second edition cancels and replaces the first edition (ISO 75-2:1993), which has been technically revised.

ISO 75 consists of the following parts, under the general title *Plastics — Determination of temperature of deflection under load*:

— *Part 1: General test method*

— *Part 2: Plastics and ebonite*

— *Part 3: High-strength thermosetting laminates and long-fibre-reinforced plastics*

Annex A forms a normative part of this part of ISO 75. Annex B is for information only.

Introduction

ISO 75-1:1993 and ISO 75-2:1993 described three methods (A, B and C) using different test loads and two specimen positions, edgewise and flatwise. For testing in the flatwise position, test specimens with dimensions 80 mm × 10 mm × 4 mm were required. These can be moulded directly or machined from the central section of the multipurpose test specimen (see ISO 3167). These “ISO bars” cannot be easily used in the edgewise position, because this would require both a reduction in span and an increase in test load by the same factor, and this may be impossible to achieve on existing instruments for edgewise testing. Specimens for testing in the edgewise position are less closely specified. Using the 80 mm × 10 mm × 4 mm ISO bar has the following advantages:

— Thermal expansion of the test specimen has less influence on the test result.

— Draft angles do not influence the test result. The specimen does not stand “on edge”.

— The moulding parameters and the specimen dimensions are specified more closely.

This increases the comparability of the test results. Therefore, it was decided that the possibility of testing in the edgewise position would be deleted from the standard. In order to provide a sufficient transition period, in this edition the flatwise position is described as the preferred and recommended one, while testing in the edgewise position is optional and has been moved to a normative annex (in this part of ISO 75). This annex and all other references to edgewise testing will be deleted on occasion of the next revision of this document.

Earlier editions of this International Standard allowed methods other than using a heating bath for heating the test specimen, namely forced-circulation ovens or fluidized beds. None of these alternative methods is widely used and no proven instruments are commercially available. Furthermore, there is no general comparability between tests using different heating methods due to the differences in the heat transfer characteristics and the temperature control methods described in this standard.

Therefore only heating in heating baths is allowed in this edition.

In order to maintain consistency with ISO 10350-1:1998, T_f has been used as the symbol for temperature of deflection under load.

Plastics — Determination of temperature of deflection under load —

Part 2: Plastics and ebonite

1 Scope

This part of ISO 75 specifies three methods, using different values of constant flexural stress, that can be used for the determination of the temperature of deflection under load of plastics (including filled plastics and fibre-reinforced plastics in which the fibre length, prior to processing, is up to 7,5 mm) and ebonite:

— method A, using a flexural stress of 1,80 MPa;

— method B, using a flexural stress of 0,45 MPa;

— method C, using a flexural stress of 8,00 MPa.

The standard deflection Δs used to determine the temperature of deflection under load corresponds to a flexural-strain increase $\Delta\varepsilon_f$ defined in this part of ISO 75. The initial flexural strain due to the loading of the specimen at room temperature is neither specified nor measured in this part of ISO 75. The ratio of this flexural-strain difference to the initial flexural strain depends on the modulus of elasticity, at room temperature, of the material under test. This method is therefore only suitable for comparing the temperatures of deflection of materials with similar room-temperature elastic properties.

NOTE The methods give better reproducibility with amorphous plastics than with semi-crystalline ones. With some materials, it may be necessary to anneal the test specimens to obtain reliable results. Annealing procedures, if used, generally result in an increase in the temperature of deflection under load (see 6.6).

For additional information, see ISO 75-1:2004, clause 1.

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 75-1:2004, *Plastics — Determination of temperature of deflection under load — Part 1: General test method*

ISO 293, *Plastics — Compression moulding test specimens of thermoplastic materials*

ISO 294-1, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens*

ISO 2818, *Plastics — Preparation of test specimens by machining*