Plastics - Determination of temperature of deflection under load - Part 3: High-strength thermosetting laminates

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EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 75-3:2004 sisaldab Euroopa standardi EN ISO 75-3:2004 + AC:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 27.08.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 75-3:2004 consists of the English text of the European standard EN ISO 75-3:2004 + AC:2006. This document is endorsed on 27.08.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of ISO 75 specifies a method for the determination of the temperature of deflection under load of highstrength thermosetting laminates and compression-moulded long-fibre-reinforced plastics in which the fibre length is greater than 7,5 mm. The flexural stress used is not fixed, as in ISO 75-2, but is a fraction (1/1 000) of the initial (room-temperature) flexural modulus of the material under test. This allows the method to be applied to materials with a wide range of flexural moduli.	**Scope:** This part of ISO 75 specifies a method for the determination of the temperature of deflection under load of highstrength thermosetting laminates and compression-moulded long-fibre-reinforced plastics in which the fibre length is greater than 7,5 mm. The flexural stress used is not fixed, as in ISO 75-2, but is a fraction (1/1 000) of the initial (room-temperature) flexural modulus of the material under test. This allows the method to be applied to materials with a wide range of flexural moduli.

ICS 83.120, 83.140.20

Võtmesõnad: kõrgtemperatuuritestid, laminaatplastid, läbipaindumine, mehaanilised omadused, määramine, paindeteimid, plastid, sarrusplastid, testimine

EUROPEAN STANDARD
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EN ISO 75-3

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Supersedes EN ISO 75-3 : 1996.

English version

Plastics

Determination of temperature of deflection under load
Part 3: High-strength thermosetting laminates and long-fibre-reinforced plastics
(ISO 75-3 : 2004)

Plastiques – Détermination de la température de fléchissement sous charge – Partie 3: Stratifiés thermodurcissables à haute résistance et plastiques renforcés de fibres longues (ISO 75-3 : 2004)

Kunststoffe – Bestimmung der Wärmeformbeständigkeitstemperatur – Teil 3: Hochbeständige härtbare Schichtstoffe und langfaserverstärkte Kunststoffe (ISO 75-3 : 2004)

This European Standard was approved by CEN on 2003-06-20.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

Management Centre: rue de Stassart 36, B-1050 Brussels

Ref. No. EN ISO 75-3 : 2004 E

Foreword

ISO 75-3 : 2004 Plastics – Determination of temperature of deflection under load – Part 3: High-strength thermosetting laminates and long-fibre-reinforced plastics,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 249 'Plastics', the Secretariat of which is held by IBN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by November 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 75-3 : 2004 was approved by CEN as a European Standard without any modification.

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Introduction

In this edition of ISO 75-3, the test load is determined as a fraction of the flexural modulus of the material under test. This has the advantage that the test load is a fraction of the flexural strength of the material. The test determines the temperature-dependent decrease in the flexural modulus. Because tensile modulus and tensile strength are not necessarily related, using the flexural modulus to determine the test load leads to more readily comparable descriptions of material behaviour.

The strain increase at which the temperature of deflection under load is read has been increased from 0,1 % to 0,2 % to obtain greater commonality with ISO 75-2.

Unlike ISO 75-2, this part of ISO 75 only allows flatwise loading, as was already the case in the previous edition (ISO 75-3:1993).

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

1 Scope

This part of ISO 75 specifies a method for the determination of the temperature of deflection under load of high-strength thermosetting laminates and compression-moulded long-fibre-reinforced plastics in which the fibre length is greater than 7,5 mm. The flexural stress used is not fixed, as in ISO 75-2, but is a fraction (1/1 000) of the initial (room-temperature) flexural modulus of the material under test. This allows the method to be applied to materials with a wide range of flexural moduli.

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 178, *Plastics — Determination of flexural properties*

ISO 295, *Plastics — Compression moulding of test specimens of thermosetting materials*

ISO 1268 (all parts), *Fibre-reinforced plastics — Methods of producing test plates*

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

ISO 10724-1, *Plastics — Injection moulding of test specimens of thermosetting powder moulding compounds (PMCs) — Part 1: General principles and moulding of multipurpose test specimens*

ISO 14125, *Fibre-reinforced plastic composites — Determination of flexural properties*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 75-1 apply.

4 Principle

See ISO 75-1:2004, clause 4.