

**Plastics - Determination of temperature of deflection
under load - Part 2: Plastics and ebonite (ISO 75-2:2013)**

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NATIONAL FOREWORD

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English Version

Plastics - Determination of temperature of deflection under load
- Part 2: Plastics and ebonite (ISO 75-2:2013)

Plastiques - Détermination de la température de
fléchissement sous charge - Partie 2: Plastiques et ébonite
(ISO 75-2:2013)

Kunststoffe - Bestimmung der
Wärmeformbeständigkeitstemperatur - Teil 2: Kunststoffe
und Hartgummi (ISO 75-2:2013)

This European Standard was approved by CEN on 21 March 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 75-2:2013) 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 NBN.

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of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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

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Endorsement notice

The text of ISO 75-2:2013 has been approved by CEN as EN ISO 75-2:2013 without any modification.

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Introduction

The first editions of ISO 75-1 and this part of ISO 75 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 20753).

The previous (i.e. second) editions of ISO 75-1 and this part of ISO 75 specified the flatwise test position as preferred, while still allowing testing in the edgewise position with test conditions given in [Annex A](#) until the next revision of ISO 75-1 and this part of ISO 75, as agreed in ISO/TC 61/SC2/WG 5. Therefore, with this revision, the edgewise test position will be removed.

Technical development of testing instruments in recent years made instruments based on a fluidized bed or air ovens available. These are especially advantageous for use at temperatures at which the common silicone oil-based heat transfer fluids reach their limit of thermal stability. The fluidized bed and air oven methods of heat transfer are introduced in ISO 75-1.

An additional precision statement covering the new heating methods is introduced in this part of ISO 75.

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, which 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, $\Delta \epsilon_f$, 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 increase 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 1 The methods give better reproducibility with amorphous plastics than with semi-crystalline ones. With some materials, it can 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).

NOTE 2 For additional information, see ISO 75-1:2013, Clause 1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 293, *Plastics — Compression moulding of 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*

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 20753, *Plastics — Test specimens*