BS EN ISO 306:2013

BSI Standards Publication

Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)

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National foreword

This British Standard is the UK implementation of EN ISO 306:2013. It supersedes BS EN ISO 306:2004 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/21, Testing of plastics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST) (ISO 306:2013)

Plastiques - Matières thermoplastiques - Détermination de la température de ramollissement Vicat (VST) (ISO 306:2013)

Kunststoffe - Thermoplaste - Bestimmung der Vicat-Erweichungstemperatur (VST) (ISO 306:2013)

This European Standard was approved by CEN on 2 November 2013.

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Foreword

This document (EN ISO 306:2013) 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of an identical text or by endorsement, at the latest by May 2014, and conflicting national standards shall be withdrawn at the latest by May 2014.

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.

This document supersedes EN ISO 306:2004.

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Endorsement notice

The text of ISO 306:2013 has been approved by CEN as EN ISO 306:2013 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This fifth edition cancels and replaces the fourth edition (ISO 306:2004), which has been technically revised. The main changes are the following additions:

— new apparatus, namely heating equipment consisting of a fluidized bed;

— precision data based on round robin testing performed in 2009;

— comparison data for tests with liquid-filled and fluidized bed.

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Introduction

This revision introduces heating equipment, consisting of a fluidized bed, as a new apparatus; this is as an alternative to liquid-filled heating baths and direct-contact heating units. Fluidized beds can reach higher temperatures than traditional liquid-filled heating baths; therefore, they represent a suitable way to measure the Vicat softening temperature (VST) of thermoplastic materials having improved thermo-mechanical properties.

It was also felt necessary to add

— precision data based on round robin testing performed in 2009, and

— comparison data for tests with liquid-filled and fluidized bed.

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INTERNATIONAL STANDARD ISO 306:2013(E)

Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)

1 Scope

This International Standard specifies four methods for the determination of the Vicat softening temperature (VST) of thermoplastic materials:

— method A50 using a force of 10 N and a heating rate of 50 K/h;

— method B50 using a force of 50 N and a heating rate of 50 K/h;

— method A120 using a force of 10 N and a heating rate of 120 K/h;

— method B120 using a force of 50 N and a heating rate of 120 K/h.

The methods specified are applicable only to thermoplastics, for which they give a measure of the temperature at which the thermoplastics start to soften rapidly.

2 Normative references

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

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

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 294-2, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 2: Small tensile bars*

ISO 294-3, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates*

ISO 472, *Plastics — Vocabulary*

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

ISO 20753, *Plastics — Test specimens*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 and the following apply.

3.1
penetration
distance over which the indenting tip has to penetrate into the specimen under test

Note 1 to entry: It is expressed in millimetres (mm).

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