

**Plastics - Thermoplastic materials -  
Determination of Vicat softening  
temperature (VST)**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 306:2004 sisaldab Euroopa standardi EN ISO 306:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 306:2004 consists of the English text of the European standard EN ISO 306:2004.</p> <p>This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This International Standard specifies four methods for the determination of the Vicat softening temperature (VST) of thermoplastic materials: — Method A50 using a force of and a heating rate of — Method B50 using a force of and a heating rate of — Method A120 using a force of and a heating rate of — Method B120 using a force of and a heating rate of .</p>	<p><b>Scope:</b></p> <p>This International Standard specifies four methods for the determination of the Vicat softening temperature (VST) of thermoplastic materials: — Method A50 using a force of and a heating rate of — Method B50 using a force of and a heating rate of — Method A120 using a force of and a heating rate of — Method B120 using a force of and a heating rate of .</p>
---	---

ICS 83.080.20

Võtmesõnad:

**English version**

Plastics

**Thermoplastic materials**

Determination of Vicat softening temperature (VST)  
(ISO 306 : 2004)

Plastiques – Matières thermoplastiques – Détermination de la température de ramollissement Vicat (VST) (ISO 306 : 2004)

Kunststoffe – Thermoplaste – Bestimmung der Vicat-Erweichungstemperatur (VST) (ISO 306 : 2004)

This European Standard was approved by CEN on 2004-07-07.

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**

## Foreword

International Standard

ISO 306 : 2004 Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST), 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 January 2005 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 306 : 2004 was approved by CEN as a European Standard without any modification.

## Contents

	Page
<b>1 Scope</b> .....	<b>3</b>
<b>2 Normative references</b> .....	<b>3</b>
<b>3 Principle</b> .....	<b>3</b>
<b>4 Apparatus</b> .....	<b>4</b>
<b>5 Test specimens</b> .....	<b>7</b>
<b>6 Conditioning</b> .....	<b>8</b>
<b>7 Procedure</b> .....	<b>8</b>
<b>8 Repeatability</b> .....	<b>8</b>
<b>9 Test report</b> .....	<b>8</b>
<b>Annex A (informative) Comparison of VST results obtained with heating bath and direct-contact heating unit</b> .....	<b>9</b>
<b>Annex B (informative) Repeatability</b> .....	<b>11</b>

## 1 Scope

**1.1** 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 °C/h
- Method B50 using a force of 50 N and a heating rate of 50 °C/h
- Method A120 using a force of 10 N and a heating rate of 120 °C/h
- Method B120 using a force of 50 N and a heating rate of 120 °C/h.

**1.2** 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 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 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 2818, *Plastics — Preparation of test specimens by machining*

ISO 3167, *Plastics — Multipurpose test specimens*

## 3 Principle

The temperature at which a standard indenting tip with a flat point penetrates 1 mm into the surface of a plastic test specimen is determined. The indenting tip exerts a specified force perpendicular to the test specimen, while the specimen is heated at a specified and uniform rate.

The temperature, in degrees Celsius, of the specimen, measured as close as possible to the indented area at 1 mm penetration, is quoted as the VST.