AS 1368—2000
ISO 306:1994

Australian Standard™

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

Standards Australia

This Australian Standard was prepared by Committee PL-010, Methods of Testing Plastics. It was approved on behalf of the Council of Standards Australia on 27 October 2000 and published on 19 December 2000.

The following interests are represented on Committee PL-010:

CSIRO Building, Construction and Engineering

Plastics and Chemicals Industries Association

Royal Australian Chemical Institute

Telstra Corporation

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This Standard was issued in draft form for comment as DR 99509.

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First published as AS 1368—1973.
Second edition 2000.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 3689 0

PREFACE

This Standard was prepared by the Standards Australia Committee PL-010, Methods of Testing Plastics.

This Standard is identical to and is reproduced from ISO 306:1994.

The objective of this Standard is to provide testing agencies of plastics products with a method for determining the softening point of plastics products.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

(d) References to International Standards should be replaced by references to equivalent Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
ISO/IEC		AS/NZS	
291	Plastics—Standard atmospheres for conditioning and testing	1396	Plastics—Standard atmospheres for conditioning and testing
293	Plastics—Compression moulding test specimens of thermoplastic materials	—	

AUSTRALIAN STANDARD

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

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 standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

1) To be published. (Revision of ISO 294:1975)

2) To be published. (Revision of ISO 2818:1980)

ISO 291:1977, *Plastics — Standard atmospheres for conditioning and testing.*

ISO 293:1986, *Plastics — Compression moulding test specimens of thermoplastic materials.*

ISO 294:—[1], *Plastics — Injection moulding of test specimens of thermoplastic materials.*

ISO 2818:—[2], *Plastics — Preparation of test specimens by machining.*

ISO 3167:1993, *Plastics — Multipurpose test specimens.*

3 Principle

Determination of the temperature at which a standard indenter penetrates 1 mm into the surface of a plastic test specimen under one of the loads given in 1.1 when the temperature is raised at a uniform rate.

The temperature at 1 mm penetration is quoted as the VST in degrees Celsius.

4 Apparatus

The apparatus consists essentially of:

4.1 **Rod**, provided with a **load-carrying plate** (4.4), held in a **rigid metal frame** so that it can move freely in the vertical direction, the base of the frame serving to support the test specimen under the indenting tip at the end of the rod (see figure 1).

Unless the rod and frame members have the same linear thermal expansion coefficient, the differential