**Doc: PCD 27 (24269) F**

***भारतीय मानक***

***Indian Standard***

 **IS 13360 (Part 6/Sec 1) : 2024**

**ISO 306 : 2022**

***प्लास्टिक - परीक्षण की विधियाँ :***

 **भाग 6 तापीय गुण**

**अनुभाग 1 थर्मोप्लास्टिक सामग्रियों के विकट मृदुकरण तापमान का निर्धारण**

**(तीसरा पुनरीक्षण)**

**PLASTICS — METHODS OF TESTING**

**PART 6 THERMAL PROPERTIES**

**SECTION 1 DETERMINATION OF VICAT SOFTENING TEMPERATURE OF THERMOPLASTIC MATERIALS**

 *(Third Revision)*

 ICS 83.080.20

 © BIS 2024

 © ISO 2022

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI - 110002

[www.bis.gov.in](http://www.bis.org.in) [www.standardsbis.in](http://www.standardsbis.in)

**September 2024 Price Group X**

Methods of Sampling and Test for Plastics Sectional Committee, PCD 27

**NATIONAL FOREWARD**

This Indian Standard (Part 6/Sec 1) (Third Revision) which is identical with ISO 306 : 2022
‘Plastics — Thermoplastic materials — Determination of Vicat softening temperature (VST)’ issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Methods of Sampling and Test for Plastics Sectional Committee and approval of the Petroleum, Coals and Related Products Division Council.

This Indian Standard was originally published in 1992 and subsequently revised in 1999 and 2018. This revision has been undertaken to align with the latest version of ISO 306 : 2022.

The major changes in this revision are as follows:

* The document has been updated to allow for the use of commercial universal equipment (i.e. covering both [ISO 75](https://www.iso.org/obp/ui/en/#iso:std:iso:75:en) and ISO 306) and modern testing practices.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

|  |  |  |
| --- | --- | --- |
| *International Standard*  | *Corresponding Indian Standard*  | *Degree of Equivalence*  |
| [ISO 291](https://www.iso.org/obp/ui/en/#iso:std:iso:291:en), Plastics — Standard atmospheres for conditioning and testing | IS 196 : 2024 Atmospheric Conditions for testing (*second revision*) | Not equivalent  |
| ISO 293 Plastics — Compression moulding of test specimens of thermoplastic materials | IS 13360 (Part 2/Sec 1) : 2024 / ISO 293 : 2023 Plastics — Methods of Testing : Part 2 Sampling and Preparation of Test Specimens, Section 1 Plastics — Compression moulding of test specimens of thermoplastic materials (second *revision* (*under printing*) | Identical |
| [ISO 294-1](https://www.iso.org/obp/ui/en/#iso:std:iso:294:-1:en) Plastics — Injection moulding of test specimens of thermoplastic materials — Part 1: General principles, and moulding of multipurpose and bar test specimens | IS 13360 (Part 2/Sec 3) : 2019/ISO 294-1 : 2017 Plastics ― Methods of Testing : Part 2 Sampling and Preparation of Test Specimens, Section 3 Injection moulding of test specimens of thermoplastic materials ― General principles and moulding of multipurpose and bar test specimens (*first revision*) | Identical |
| [ISO 294-2](https://www.iso.org/obp/ui/en/#iso:std:iso:294:-2:en) Plastics — Injection moulding of test specimens of thermoplastic materials — Part 2: Small tensile bars | [IS 13360 (Part 2/Sec 9) : 2021ISO 294-2: 2018](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/standard_review/Standard_review/Isdetails?ID=MjY2MTc%3D) Plastics — Methods of Testing : Part 2 Sampling and Preparation of Test Specimens, Section 9 Injection moulding of test specimens of thermoplastic materials — Small tensile bars ( First Revision ) | Identical |
| [ISO 294-3](https://www.iso.org/obp/ui/en/#iso:std:iso:294:-3:en) Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates | [IS 13360 (Part 2/Sec 7) : 2021/ISO 294-3](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/standard_review/Standard_review/Isdetails?ID=MjY2MTY%3D) Plastics — Methods of Testing : Part 2 Sampling and Preparation of Test Specimens, Section 7 Injection moulding of test specimens of thermoplastic materials — Small plates (*third revision*) | Identical |
| [ISO 472](https://www.iso.org/obp/ui/en/#iso:std:iso:472:en) Plastics — Vocabulary | IS 2828 : 2019/ISO 472 : 2013 Plastics — Vocabulary (*second revision*) | Identical |
| [ISO 2818](https://www.iso.org/obp/ui/en/#iso:std:iso:2818:en) Plastics — Preparation of test specimens by machining | [IS 13360 (Part 2/Sec 4) : 2021ISO 2818: 2018](https://www.services.bis.gov.in/php/BIS_2.0/bisconnect/standard_review/Standard_review/Isdetails?ID=MjY3ODQ%3D) Plastics - Methods of testing: Part 2 Sampling and preparation of test specimens, Section 4 Preparation of test specimens by machining (*Second Revision*) | Identical |
| IEC 60584-1 Thermocouples — Part 1: EMF specifications and tolerances | IS 16923 (Part 1) : 2018/IEC 60584-1 : 2013 Thermocouples : Part 1 EMF Specifications and Tolerances (*first revision*) | Identical |
| IEC 60584-3 Thermocouples — Part 3: Extension and compensating cables — Tolerances and identification system | IS 16923 (Part 3) : 2023/IEC 60584-3 : 2021 Thermocouples : Part 3 Extension and Compensating Cables — Tolerances and Identification System | Identical |
| IEC 60751 Industrial platinum resistance thermometers and platinum temperature sensors | IS 2848 : 2023/IEC 60751 : 2022 Industrial Platinum Resistance Thermometers and Platinum Temperature Sensors (*second revision*) | Identical |

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

|  |  |
| --- | --- |
| *International Standard* | *Title* |
| [ISO 16012](https://www.iso.org/obp/ui/en/#iso:std:iso:16012:en) | Plastics — Determination of linear dimensions of test specimens |
| ISO 20753 | Plastics — Test specimens |

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’.