**Doc: PCD 27 (23184) F**

***भारतीय मानक***

***Indian Standard***

 **IS 13360 (Part 5/Sec 5/
Subsec 1) : 2024**

**ISO 179-1 : 2023**

**प्लास्टिक — परीक्षण पद्धतियाँ**

**भाग 5 यांत्रिक गुणधर्म**

**अनुभाग 5 चार्पी प्रभाव गुणधर्म का निर्धारण**

**उपभाग 1 गैर-यंत्रीकृत प्रभाव परीक्षण**

**(दूसरा पुनरीक्षण)**

**PLASTICS — METHODS OF TESTING**

**PART 5 MECHANICAL PROPERTIES**

**SECTION 5 DETERMINATION OF CHARPY IMPACT PROPERTIES**

**SUBSEC 1 NON-INSTRUMENTED IMPACT TEST**

 *(Second Revision)*

 ICS 83.080.01

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भारतीय मानक ब्यूरो

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**November 2024 Price Group X**

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

**NATIONAL FOREWARD**

This Indian Standard (Part 5/Sec 5/Subsec 1) (Second Revision) which is identical with ISO 179-1 : 2023
‘Plastics — Determination of Charpy impact properties Part 1: Non-instrumented impact test’ 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 standard was originally published in 1996 and subsequently revised in 2017. This revision has been undertaken to align the standard with the latest version of ISO 179.

As the ISO is available in two parts, the Committee decided to bifurcate the standard (IS 13360 (Part 5/Sec 5)) into two subsections as:

Subsec 1: Non-instrumented impact test

Subsec 2: Instrumented impact test

The major changes in this revision are as follows:

— results of a round robin for unnotched specimens (see Annex B) have been added;

— reference to standard ISO 16012 (see the Bibliography and subclause 5.2) has been added;

— improvements of the micrometers and gauges subclause (see 5.2) have been addressed;

— symbols used in Formulae (1) and (2) have been reviewed and updated.

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 standards, references appear to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, is listed below along with their degree of equivalence for the editions indicated:

|  |  |  |
| --- | --- | --- |
| *International Standard*  | *Corresponding Indian Standard*  | *Degree of Equivalence* |
| ISO 291, 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) : 2016/ISO 293 : 2004 Plastics - Methods of testing: Part 2 sampling and preparation of test specimens section 1 plastics - Compression moulding of test specimens of thermoplastic materials (*First Revision*) | Identical |
| ISO 294-1 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 294-3](https://www.iso.org/obp/ui/#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 : 2020 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 295 Plastics — Compression moulding of test specimens of thermosetting materials | IS 13360 (Part 2/Sec 2) : 2013/ISO 295 : 2004 Plastics - Methods of testing: Part 2 sampling and preparation of test specimens section 2 compression moulding of test specimens of thermosetting materials (*First Revision*) | Identical |
| [ISO 2818](https://www.iso.org/obp/ui/#iso:std:iso:2818:en) Plastics — Preparation of test specimens by machining | IS 13360 (Part 2/Sec 4) : 2021/ISO 2818: 2018 Plastics - Methods of testing: Part 2 Sampling and preparation of test specimens Section 4 Preparation of test specimens by machining (*Second* *Revision*) | Identical |
| 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 | IS 13360 (Part 2/Sec 10) : 2006/ISO 10724-1:1998 Plastics - Methods of testing: Part 2 sampling and preparation of test specimens section 10 injection moulding of test specimens of thermosetting powder moulding compounds (PMCS) - General principles and moulding of multipurpose test specimen | Identical |

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

|  |  |
| --- | --- |
| *International Standard* | *Title* |
| ISO 1268-11 | Fibre-reinforced plastics — Methods of producing test plates — Part 11: Injection moulding of BMC and other long-fibre moulding compounds — Small plates |
| ISO 13802 | Plastics — Verification of pendulum impact-testing machines — Charpy, Izod and tensile impact-testing |

For tropical countries like India, the standard temperature and the relative humidity shall be taken as 27 ± 2°C and 65 ± 5 percent respectively.

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*)’.