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Plastics - Verification of pendulum impact-testing machines - Charpy, Izod and tensile impact-testing (ISO 13802:2025)

## EESTI STANDARDI EESSÕNA

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ICS 83.200

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EUROPEAN STANDARD

EN ISO 13802

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Plastics - Verification of pendulum impact-testing machines - Charpy, Izod and tensile impact-testing (ISO 13802:2025)

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Kunststoffe - Verifizierung von Pendelschlagwerken - Charpy-, Izod- und Schlagzugversuch (ISO 13802:2025)

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COMITÉ EUROPÉEN DE NORMALISATION  
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

## European foreword

This document (EN ISO 13802:2025) 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 SIS.

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of an identical text or by endorsement, at the latest by February 2026, and conflicting national standards shall be withdrawn at the latest by February 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 13802:2015.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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## Endorsement notice

The text of ISO 13802:2025 has been approved by CEN as EN ISO 13802:2025 without any modification.

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## Foreword

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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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 13802:2015), which has been technically revised.

The main changes are as follows:

- removed term entries 3.6 (gravity length), 3.7 (gyration length), and 3.19 (half-height Charpy impact reference specimen) and renumbered [Clause 3](#) accordingly;
- corrected the measurement unit and the requirement in [6.2.4](#);
- updated acceptance criteria in [6.6.3](#);
- updated the references in Note 2 of the [Clause 7](#);
- corrected value  $D_1$  in [Table A.1](#) to align with the value indicated in [Table 4](#);
- corrected value  $p_1$  in [Table B.1](#) to align with the value indicated in [Table 4](#);
- corrected the [Formulae \(D.4\)](#) and [\(D.5\)](#) in [Annex D](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

A pendulum impact-testing machine verified in accordance with this document, and assessed as satisfactory, is considered suitable for impact testing with unnotched and notched test specimens of different types.

The verification of some geometrical properties is difficult to perform on the assembled instrument. It is, therefore, assumed that the manufacturer is responsible for the verification of such properties and for providing reference planes on the instrument that enable proper verification in accordance with this document.

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# Plastics — Verification of pendulum impact-testing machines — Charpy, Izod and tensile impact-testing

## 1 Scope

This document specifies frequency and methods for the verification of pendulum impact-testing machines used for the Charpy impact test, Izod impact test, and tensile impact test described in ISO 179-1, ISO 180 and ISO 8256, respectively. Verification of instrumented impact machines is covered insofar as the geometrical and physical properties of instrumented machines are identical to non-instrumented machines. The force/work verification of instrumented machines is not covered in this document.

This document is applicable to pendulum-type impact-testing machines, of different capacities and/or designs, with the geometrical and physical properties specified in [Clause 5](#).

Methods are specified for verification of the geometrical and physical properties of the different parts of the test machine.

These methods are for use when the machine is being installed, has been repaired, has been moved, or is undergoing periodic checking.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test*

ISO 179-2, *Plastics — Determination of Charpy impact properties — Part 2: Instrumented impact test*

ISO 180, *Plastics — Determination of Izod impact strength*

ISO 8256:2023, *Plastics — Determination of tensile-impact strength*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1 verification

proof, with the use of calibrated standards or standard reference materials, that the *calibration* (3.2) of an instrument is acceptable

### 3.2 calibration

set of operations that establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system and values corresponding to appropriate standards or known values derived from standards