

STN	Plasty Stanovenie vlastností pri náraze Charpyho metódou Časť 1: Neinštrumentovaná nárazová skúška (ISO 179-1: 2023)	STN EN ISO 179-1 64 0612
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Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test (ISO 179-1:2023)

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/23

Obsahuje: EN ISO 179-1:2023, ISO 179-1:2023

Oznámením tejto normy sa ruší

STN EN ISO 179-1 (64 0612) z februára 2011

137309



Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2023

Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 179-1

June 2023

ICS 83.080.01

Supersedes EN ISO 179-1:2010

English Version

**Plastics - Determination of Charpy impact properties - Part
1: Non-instrumented impact test (ISO 179-1:2023)**

Plastiques - Détermination des caractéristiques au choc
Charpy - Partie 1: Essai de choc non instrumenté (ISO
179-1:2023)

Kunststoffe - Bestimmung der Charpy-
Schlageigenschaften - Teil 1: Nicht instrumentierte
Schlagzähigkeitsprüfung (ISO 179-1:2023)

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EN ISO 179-1:2023 (E)

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European foreword

This document (EN ISO 179-1:2023) 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of an identical text or by endorsement, at the latest by December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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Endorsement notice

The text of ISO 179-1:2023 has been approved by CEN as EN ISO 179-1:2023 without any modification.

INTERNATIONAL STANDARD

ISO
179-1

Third edition
2023-06

Plastics — Determination of Charpy impact properties —

Part 1: Non-instrumented impact test

*Plastiques — Détermination des caractéristiques au choc Charpy —
Partie 1: Essai de choc non instrumenté*



Reference number
ISO 179-1:2023(E)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical behavior*, 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 179-1:2010), which has been technically revised.

The main changes 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.

A list of all parts in the ISO 179 series can be found on the ISO website.

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Introduction

The Charpy impact properties determination method described in the ISO 179 series has a greater range of applicability than that given in ISO 180 and is more suitable for the testing of materials showing interlaminar shear fracture or of materials exhibiting surface effects due to environmental factors.

The method is suitable for use with the following range of materials:

- rigid thermoplastic moulding and extrusion materials (including filled and reinforced compounds in addition to unfilled types) and rigid thermoplastics sheets;
- rigid thermosetting moulding materials (including filled and reinforced compounds) and rigid thermosetting sheets (including laminates);
- fibre-reinforced thermosetting and thermoplastic composites incorporating unidirectional or multi-directional reinforcements (such as mats, woven fabrics, woven rovings, chopped strands, combination and hybrid reinforcements, rovings and milled fibres) or incorporating sheets made from pre-impregnated materials (prepregs), including filled and reinforced compounds;
- thermotropic liquid-crystal polymers.

Notched samples are not normally suitable for use with rigid cellular materials, long-fibre-reinforced composites or thermotropic liquid-crystal polymers. In these cases, unnotched samples may be used.

The method is suited to the use of specimens moulded to the chosen dimensions, machined from the central portion of a standard multipurpose test specimen (see ISO 20753) or machined from finished or semifinished products such as mouldings, laminates and extruded or cast sheet.

Plastics — Determination of Charpy impact properties —

Part 1: Non-instrumented impact test

1 Scope

This document specifies a method for determining the Charpy impact strength of plastics under defined conditions. A number of different types of specimen and test configurations are defined. Different test parameters are specified according to the type of material, the type of test specimen and the type of notch.

The method can be used to investigate the behaviour of specified types of specimen under the impact conditions defined and for estimating the brittleness or toughness of specimens within the limitations inherent in the test conditions. It can also be used for the determination of comparative data from similar types of material.

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 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 294-3, *Plastics — Injection moulding of test specimens of thermoplastic materials — Part 3: Small plates*

ISO 295, *Plastics — Compression moulding of test specimens of thermosetting materials*

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

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*

ISO 13802, *Plastics — Verification of pendulum impact-testing machines — Charpy, Izod and tensile impact-testing*

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