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Third edition
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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*



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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.

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.

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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.