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

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The UK participation in its preparation was entrusted to Technical Committee PRI/21, Testing of plastics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN ISO 13802:2015) 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 NBN.

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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 documents 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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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

This second edition cancels and replaces the first edition (ISO 13802:1999), which has been technically revised. It also incorporates the Technical Corrigendum ISO 13802:1999/Cor.1:2000.

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

1 Scope

This International Standard 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 International Standard.

This International Standard is applicable to pendulum-type impact-testing machines, of different capacities and/or designs, with the geometrical and physical properties defined in Clause 5.

Methods are described for verification of the geometrical and physical properties of the different parts of the test machine. 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 International Standard.

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

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

Annex A details design requirements for Charpy testing machines.

Annex B details design requirements for Izod testing machines.

Annex C details design requirements for tensile impact machines.

Annex D explains how to calculate the ratio of frame mass to pendulum mass required to avoid errors in the impact energy.

Annex E explains deceleration of pendulum during impact.

Annex F details design requirements for one type of gauge used to verify striker and anvil/support alignment for Charpy testing machine.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, *Plastics — Determination of tensile-impact strength*

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