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Metallic materials — Charpy pendulum impact test —

Part 4: Testing of miniature Charpy-type V-notch test pieces

Matériaux métalliques — Essai de flexion par choc sur éprouvette Charpy —

Partie 4: Essai des éprouvettes type Charpy miniaturisées à entaille en V

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Foreword

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This document was prepared by Technical Committee ISO TC 164, *Mechanical testing of metals*, Subcommittee SC 4, *Fatigue, fracture and toughness testing*.

A list of all parts in the ISO 148 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.

Metallic materials — Charpy pendulum impact test —

Part 4: Testing of miniature Charpy-type V-notch test pieces

1 Scope

This document specifies the pendulum impact test method on miniature Charpy-type V-notch test pieces of metallic materials. This document does not cover instrumented impact testing of miniature Charpy-type V-notch test pieces, which is specified in ISO 14556:2023, Annex D[1].

This document can be applied, by agreement, to other impact testing machines, such as drop-weight towers or high-speed servo-hydraulic machines.

The user should be aware that data obtained from miniature test pieces are not directly comparable to those obtained from full-size standard Charpy V-notch test pieces[2,3].

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 148-1:2016, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 148-2, *Metallic materials — Charpy pendulum impact test — Part 2: Verification of testing machines*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 148-1 and the following apply.

ISO and IEC maintain terminological 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
miniature Charpy-type V-notch test piece
Charpy-type V-notch test piece in which all linear dimensions (width *W*, thickness *B*, length *L*, ligament width) are smaller than for a standard Charpy V-notch test piece

Note 1 to entry: Standard Charpy V-notch test pieces are covered by ISO 148-1.

Note 2 to entry: Miniature Charpy-type V-notch test pieces should not be confused with sub-size Charpy-type V-notch test pieces, in which one or more linear dimensions, but not all, are smaller than for a standard test piece, for example, test pieces with thickness B = 5 mm, width W = 10 mm, length L = 55 mm, ligament width = 8 mm. Testing of sub-size test pieces is addressed in ISO 148-1:2016, 6.1.

4 Principle of the test

This test consists of breaking a miniature Charpy-type V-notch test piece with a single blow from a swinging pendulum or a similar impact testing machine (such as a drop-weight tower or a high-speed servo-hydraulic