

**Metallic materials - Charpy pendulum impact test -
Part 3: Preparation and characterization of Charpy
V-notch test pieces for indirect verification of
pendulum impact machines**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 148-3:2009 sisaldab Euroopa standardi EN ISO 148-3:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 29.01.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.12.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 148-3:2009 consists of the English text of the European standard EN ISO 148-3:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 29.01.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 15.12.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 77.040.10

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ICS 77.040.10

English Version

**Metallic materials - Charpy pendulum impact test - Part 3:
Preparation and characterization of Charpy V-notch test pieces
for indirect verification of pendulum impact machines (ISO 148-
3:2008)**

Matériaux métalliques - Essai de flexion par choc sur
éprouvette Charpy - Partie 3: Préparation et caractérisation
des éprouvettes Charpy à entaille en V pour la vérification
indirecte des machines d'essai mouton-pendule (ISO 148-
3:2008)

Metallische Werkstoffe - Kerbschlagbiegeversuch nach
Charpy - Teil 3: Vorbereitung und Charakterisierung von
Charpy-V-Referenzproben für die indirekte Prüfung der
Prüfmaschinen (Pendelschlagwerke) (ISO 148-3:2008)

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Foreword

This document (EN ISO 148-3:2008) has been prepared by Technical Committee ISO/TC 164 "Mechanical testing of metals" in collaboration with Technical Committee ECISS/TC 1 "Steel - Mechanical testing" the secretariat of which is held by AFNOR.

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 June 2009, and conflicting national standards shall be withdrawn at the latest by June 2009.

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

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Endorsement notice

The text of ISO 148-3:2008 has been approved by CEN as a EN ISO 148-3:2008 without any modification.

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Introduction

The suitability of a pendulum impact testing machine for acceptance testing of metallic materials has usually been based on a calibration of its scale and verification of compliance with specified dimensions, such as the shape and spacing of the anvils supporting the specimen. The scale calibration is commonly verified by measuring the mass of the pendulum and its elevation at various scale readings. This procedure for evaluation of machines had the distinct advantage of requiring only measurements of quantities that could be traced to national standards. The objective nature of these traceable measurements minimized the necessity for arbitration regarding the suitability of the machines for material acceptance tests.

However, sometimes two machines that had been evaluated by the direct-verification procedures described above, and which met all dimensional requirements, were found to give significantly different impact values when testing test pieces of the same material. This difference was commercially important when values obtained using one machine met the material specification, while the values obtained using the other machine did not. To avoid such disagreements, some purchasers of materials added the requirement that all pendulum impact testing machines used for acceptance testing of material sold to them must be indirectly verified by testing reference test pieces supplied by them. A machine was considered acceptable only if the values obtained using the machine agreed, within specified limits, with the value furnished with the reference test pieces.

Successful experience in the use of reference test pieces led to the requirement in ISO 148-2 that indirect verification must be performed using reference test pieces in addition to direct verification. National standards and codes also require indirect verification using reference test pieces; for example, EN 10045-2 and ASTM E 23 require the use of reference test pieces. The purpose of this part of ISO 148 is to specify the requirements, preparation and methods for qualifying test pieces used for the indirect verification of pendulum impact testing machines.

Metallic materials — Charpy pendulum impact test —

Part 3:

Preparation and characterization of Charpy V-notch test pieces for indirect verification of pendulum impact machines

1 Scope

This part of ISO 148 covers the requirements, preparation and methods for qualifying test pieces used for the indirect verification of pendulum impact testing machines in accordance with ISO 148-2.

It specifies notched test pieces with nominal dimensions identical to those specified in ISO 148-1; however, the tolerances are more stringent.

NOTE 1 The chemical composition or heat treatment or both are varied according to the energy level desired.

NOTE 2 Reference test pieces are qualified on reference pendulum impact testing machines which are also described in this part of ISO 148.

2 Normative references

The following referenced documents are indispensable for the application 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, *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 following terms and definitions apply.

3.1 Definitions pertaining to the machine

3.1.1

industrial machine

pendulum impact testing machine used for industrial, general or most research-laboratory testing of metallic materials

NOTE These machines are not used to establish reference values.

3.1.2

reference machine

pendulum impact testing machine used to determine certified values for batches of reference test pieces