SLOVENSKI STANDARD
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SIST EN ISO 7438:2000

Kovinski materiali – Upogibni preskus (ISO 7438:2005)

Metallic materials - Bend test (ISO 7438:2005)

Metallische Werkstoffe - Biegeversuch (ISO 7438:2005)

Matériaux métalliques - Essai de pliage (ISO 7438:2005)

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Metallic materials - Bend test (ISO 7438:2005)

Matériaux métalliques - Essai de pliage (ISO 7438:2005)

Metallische Werkstoffe - Biegeversuch (ISO 7438:2005)

This European Standard was approved by CEN on 13 June 2005.

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Foreword

This document (EN ISO 7438:2005) 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of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

This document supersedes EN ISO 7438:2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 7438:2005 has been approved by CEN as EN ISO 7438:2005 without any modifications.

INTERNATIONAL STANDARD

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Metallic materials — Bend test

Matériaux métalliques — Essai de pliage

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 7438 was prepared by Technical Committee ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 2, *Ductility testing*.

This second edition cancels and replaces the first edition (ISO 7438:1985), which has been technically revised.

Metallic materials — Bend test

1 Scope

This International Standard specifies a method for determining the ability of metallic materials to undergo plastic deformation in bending.

This International Standard applies to test pieces taken from metallic products, as specified in the relevant product standard. It is not applicable to certain materials or products, for example tubes in full section or welded joints, for which other standards exist.

2 Symbols and designations

Symbols and designations used in the bend test are shown in Figures 1 and 2 and specified in Table 1.

Table 1 — Symbols and designations

Symbol	Designation	Unit
a	Thickness or diameter of test piece (or diameter of the inscribed circle for pieces of polygonal cross-section)	mm
b	Width of the test piece	mm
L	Length of the test piece	mm
l	Distance between supports	mm
D	Diameter of the former	mm
α	Angle of bend	degrees
r	Internal radius of bend portion of test piece after bending	mm
f	Displacement of the former	mm
c	Distance between the plane including the horizontal axis of supports and the central axis of the rounded portion of the former before test	mm
p	Distance between the vertical planes including the central axis and the vertical axis of each support and the vertical plane including the horizontal central axis of the former after test	mm

3 Principle

The bend test consists of submitting a test piece of round, square, rectangular or polygonal cross-section to plastic deformation by bending, without changing the direction of loading, until a specified angle of bend is reached.

The axes of two legs of the test piece remain in a plane perpendicular to the axis of bending. In the case of a 180° bend, the two lateral surfaces may, depending on the requirements of the product standard, lie flat against each other or may be parallel at a specified distance, an insert being used to control this distance.