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Metallic materials - Sheet and strip - Determination of tensile strain hardening exponent (ISO 10275:2007)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/14

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10275

June 2014

ICS 77.040.10

English Version

Metallic materials - Sheet and strip - Determination of tensile strain hardening exponent (ISO 10275:2007)

Matériaux métalliques - Tôles et bandes - Détermination du coefficient d'écrouissage en traction (ISO 10275:2007)

Metallische Werkstoffe - Blech und Band - Bestimmung des Verfestigungsexponenten im Zugversuch (ISO 10275:2007)

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Foreword

The text of ISO 10275:2007 has been prepared by Technical Committee ISO/TC 164 “Mechanical testing of metals” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 10275:2014 by Technical Committee ECISS/TC 101 “Test methods for steel (other than chemical analysis)” 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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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Endorsement notice

The text of ISO 10275:2007 has been approved by CEN as EN ISO 10275:2014 without any modification.

INTERNATIONAL STANDARD

ISO 10275

Second edition
2007-06-01

Metallic materials — Sheet and strip — Determination of tensile strain hardening exponent

Matériaux métalliques — Tôles et bandes — Détermination du coefficient d'écrouissage en traction

Reference number
ISO 10275:2007(E)

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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 10275 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 10275:1993), which has been technically revised.

Introduction

In the former version of this International Standard, for the calculation of the true strain, the elastic strain did not need to be subtracted from the total strain if it was lower than 10 % of the total strain.

In this new International Standard, the elastic strain is subtracted from the total strain for calculation of the true strain, which is now referred to as “true plastic strain”.

INTERNATIONAL STANDARD **ISO 10275:2007(E)**

Metallic materials — Sheet and strip — Determination of tensile strain hardening exponent

1 Scope

This International Standard specifies a method for determining the tensile strain hardening exponent n of flat products (sheet and strip) made of metallic materials.

The method is valid only for that part of the stress-strain curve in the plastic range where the curve is continuous and monotonic (see 7.4).

In the case of materials with a serrated stress-strain curve in the work hardening range (materials which show the Portevin-Le Chatelier effect, e.g. AlMg-alloys) the automatic determination (linear regression of the logarithm true stress vs. the logarithm true plastic strain, see 7.7) should be used to give reproducible results.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6892:1998, *Metallic materials — Tensile testing at ambient temperature*

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 9513:1999, *Metallic materials — Calibration of extensometers used in uniaxial testing*

ISO 10113, *Metallic materials — Sheet and strip — Determination of plastic strain ratio*

