Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 10160:2000 sisaldab Euroopa standardi EN 10160:1999 ingliskeelset teksti.	This Estonian standard EVS-EN 10160:2000 consists of the English text of the European standard EN 10160:1999.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.07.1999.	Date of Availability of the European standard is 14.07.1999.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 77.040.20, 77.140.50

EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 10160

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English version

Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)

Contrôle ultrasonore des produits plats en acier d'épaisseur égale ou supérieure à 6 mm (méthode par réflexion)

Ultraschallprüfung von Flacherzeugnissen aus Stahl mit einer Dicke größer oder gleich 6 mm (Reflexionsverfahren)

This European Standard was approved by CEN on 3 March 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee ECISS/TC 2 "Steel - Physico-chemical and non-destructive 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 January 2000, and conflicting national standards shall be withdrawn at the latest by January 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard describes a method for the ultrasonic testing of uncoated flat steel product for internal discontinuities. It is applicable to flat product in nominal thickness range of 6 mm to 200 mm of non-alloyed or alloyed steel, excluding austenitic or austenoferritic steels. However, this standard may be applied to the latter types of steels provided that the difference between the amplitude of the noise signal and that of the echo detection threshold is sufficient for the limit fixed.

This standard also defines four quality classes for the flat product body (classes S_0, S_1, S_2 and S_3) and 5 classes (E_0, E_1, E_2, E_3, E_4) for the edges in accordance with the criteria specified in clause 9.

Other methods of testing (e.g. by transmission) or other test equipments may be used at the manufacturer's discretion provided that they give identical results to those obtained under the conditions of this standard. In the event of a dispute, only the method defined in this standard shall prevail.

Testing of flat product of thickness less than 6 mm may be the subject of special agreements between the parties concerned.

The inspection is normally carried out in the place of production or on the premises of the supplier. If specified on the order, the inspection may take place in the presence of the purchaser or his representative [1)].

A list of equivalent terms in several European languages is given in annex A.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 473, *Qualification and certification of NDT personnel - General principles*

prEN 1330-4, *Non destructive testing - Terminology - Part 4 : Terms used in ultrasoning testing*

3 Terms and definitions

For the purposes of this European Standard, the definitions given in prEN 1330-4 and the following definitions apply:

3.1
internal discontinuity
any imperfection lying within the thickness of the flat product, e.g planar or laminar imperfection, single-plane or multi-plane inclusion bands or clusters

NOTE It is referred in the text as discontinuity.

3.2
defect
unacceptable internal discontinuity, i.e. exceeding the specified maximum size or population density limits

3.3
Population density
the number of individual internal discontinuities of a size greater than a specified minimum size and less than a specified maximum size per specified area of body or length of edge zone

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1) In this case, all steps should be taken to ensure that the production process is not disturbed.