



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 10280:2001+A1:2007

ICS 29.030

**MAGNETIC MATERIALS - METHODS OF
MEASUREMENT OF THE MAGNETIC
PROPERTIES OF ELECTRICAL SHEET AND
STRIP BY MEANS OF A SINGLE SHEET
TESTER**

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*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland and comes into
effect on:
21 February 2007*

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 10280:2001+A1

January 2007

ICS 29.030

Supersedes EN 10280:2001

English Version

**Magnetic materials - Methods of measurement of the magnetic
properties of electrical sheet and strip by means of a single
sheet tester**

Matériaux magnétiques - Méthodes de mesure des
caractéristiques magnétiques des tôles et bandes
magnétiques à l'aide de l'essai sur tôle unique

Magnetische Werkstoffe - Verfahren zur Messung der
magnetischen Eigenschaften von Elektroblech und -band
mit Hilfe eines Tafelmeßgerätes

This European Standard was approved by CEN on 6 December 2000 and includes Amendment 1 approved by CEN on 2 December 2006.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

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EN 10280:2001+A1:2007 (E)

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Foreword

This document (EN 10280:2001+A1:2007) has been prepared by Technical Committee ECISS/TC 24 "Electrical steel sheet and strip qualities - Qualities, dimensions, tolerances and specific tests", the secretariat of which is held by DIN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2007, and conflicting national standards shall be withdrawn at the latest by July 2007.

This document includes Amendment 1, approved by CEN on 2006-12-02.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

This document is based on IEC 60404-3 **A1** :1992 including its Amendment 1:2002. **A1**

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

EN 10280:2001+A1:2007 (E)**1 Scope**

This European Standard defines the general principles of the measurement of the magnetic properties of electrical sheets and strips by means of a single sheet tester and gives the technical details of the measurement of specific total loss and of magnetic field strength, excitation current and specific apparent power.

This European Standard is applicable at power frequencies to :

- a) grain oriented magnetic sheet and strip :
 - for the measurement between 1,0 T and 1,8 T of :
 - specific total loss ;
 - specific apparent power ;
 - r.m.s. value of the magnetic field strength ;
 - for the measurement up to peak values of magnetic field strength of 1 000 A/m of :
 - peak value of the magnetic polarization ;
 - peak value of the magnetic field strength ;
- b) non-oriented magnetic sheet and strip :
 - for the measurement between 0,8 T and 1,5 T of :
 - specific total loss ;
 - specific apparent power ;
 - r.m.s. value of excitation current ;
 - for the measurement up to peak values of magnetic field strength of 10 000 A/m of :
 - peak value of the magnetic polarization ;
 - peak value of the magnetic field strength.

The single sheet tester is applicable to test specimens obtained from electrical sheets and strips of any quality. The magnetic characteristics are determined for a sinusoidal induced voltage, for specified peak values of magnetic polarization and for a specified frequency.

The measurements are made at an ambient temperature of $23\text{ °C} \pm 5\text{ °C}$ on test specimens which have first been demagnetized.

NOTE Throughout this European Standard the quantity "magnetic polarization" is used as defined in [IEC 60050-221](#).

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 (including amendments).

IEC 60404-13, *Magnetic materials - Part 13 : Methods of measurement of density, resistivity and stacking factor of electrical steel sheet and strip.*

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