



National Standards Authority of Ireland

IRISH STANDARD

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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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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 Elektrolech 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.

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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of an identical text or by endorsement, at the latest by July 2007, and conflicting national standards shall be withdrawn at the latest by July 2007.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**

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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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