



National Standards Authority of Ireland

STANDARD

I.S. EN 14430:2004

ICS 25.220.50

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VITREOUS AND PORCELAIN ENAMELS - HIGH VOLTAGE TEST

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on:
November 12, 2004*

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Údarás um Chaighdeán Náisiúnta na hÉireann

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14430

September 2004

ICS 25.220.50

English version

Vitreous and porcelain enamels - High voltage test

Emaux vitrifiés - Essai sous haute tension

Emails und Emailierungen - Hochspannungsprüfung

This European Standard was approved by CEN on 9 July 2004.

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Foreword

This document (EN 14430:2004) has been prepared by Technical Committee CEN/TC 262 “Metallic and other inorganic coatings”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

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.

EN 14430:2004 (E)

Introduction

There are 2 different objectives for high voltage testing of vitreous and porcelain enamels.

Test A is used to detect and locate defects, which extend down to the metal base (e.g. open pores). This is a non-destructive test usually applied to thin enamel coatings. The test serves to monitor either that the parts produced are free from defects at the chosen test voltage, or to count the number of existing defects, e.g. to determine the defect density (defects/m²) of enamelled architecture panels.

Test B is used to detect and locate defects, which extend down to the metal base (e.g. open pores) and to detect weak spots. This is a destructive test, i.e. the test can generate open pores with an electric discharge through weak spots in the enamel coating. This test is usually applied to thick enamel coatings and serves:

- a) to verify that an enamel coating is safe to be used under highly corrosive conditions, e.g. to test the enamel coating of vessels used in the chemical industry;

or

- b) to verify that the enamel coating is safe to be used as a dielectric.

Test A and Test B require the same test equipment (see Clause 6) and follow the same test procedure (see Clause 9). However, for test B the applied voltage is higher than in test A (see Clause 7).

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