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NSAI Standards

Irish Standard
I.S. EN 1971-2:2011

Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 2: Test with an internal probe on the inner surface

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1971-2

December 2011

ICS 23.040.15; 77.150.30

English Version

Copper and copper alloys - Eddy current test for measuring defects on seamless round copper and copper alloy tubes - Part 2: Test with an internal probe on the inner surface

Cuivre et alliages de cuivre - Méthode de contrôle par courants de Foucault pour le mesurage des défauts des tubes ronds sans soudure en cuivre et alliages de cuivre - Partie 2: Essai avec un capteur interne sur la paroi interne

Kupfer und Kupferlegierungen - Wirbelstromprüfung an Rohren zur Messung von Fehlern an nahtlos gezogenen runden Rohren aus Kupfer und Kupferlegierungen - Teil 2: Prüfung mit Innensonde auf der Innenseite

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Foreword

This document (EN 1971-2:2011) has been prepared by Technical Committee CEN/TC 133 “Copper and copper alloys”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2012, and conflicting national standards shall be withdrawn at the latest by June 2012.

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Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 3 "Copper tubes (installation and industrial)" to prepare the following document:

EN 1971-2, *Copper and copper alloys — Eddy current test for measuring defects on seamless round copper and copper alloy tubes — Part 2: Test with an internal probe on the inner surface*

This is one of two parts of the standard for the eddy current test for measuring defects on seamless round copper and copper alloy tubes. The other part is:

EN 1971-1, *Copper and copper alloys — Eddy current test for measuring defects on seamless round copper and copper alloy tubes — Part 1:Test with an encircling test coil on the outer surface*

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Introduction

The eddy current test with internal probe described in this standard has the objective of detecting potential leaks and serious defects in seamless round copper and copper alloy tubes.

The eddy current test is able to detect material inhomogeneities and their positions throughout the length of tubes. The eddy current signals of material inhomogeneities are compared with reference signals of artificially produced test defects. It is possible to identify these inhomogeneities on the inner and outer surfaces as well as within the tube wall.

Since the distribution of eddy currents decreases as the distance from the test coil increases, the amplitude of defect signals also decreases with increasing distance from the test coil. Thus the eddy current test with internal probe on the inner surface is less sensitive to defects on the outer surface.

The purpose of this standard is not to define a method of measuring the actual extent of the material inhomogeneities as the signal amplitude is dependent on, amongst other factors, volume, form and position of the inhomogeneity.

Due to end effects, it is not possible to effectively test the ends of the tubes. The purchaser and the supplier could agree that the end effect may be overcome by cutting to length after testing.

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