



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 10246-5:2000

ICS 23.040.10  
77.040.20

**NON-DESTRUCTIVE TESTING OF STEEL  
TUBES - PART 5: AUTOMATIC FULL  
PERIPHERAL MAGNETIC  
TRANSDUCER/FLUX LEAKAGE TESTING OF  
SEAMLESS AND WELDED (EXCEPT  
SUBMERGED ARC WELDED)  
FERROMAGNETIC STEEL TUBES FOR THE  
DETECTION OF LONGITUDINAL  
IMPERFECTIONS**

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*This Irish Standard was  
published under the  
authority of the National  
Standards Authority of  
Ireland  
and comes into effect on:  
March 24, 2000*

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EUROPEAN STANDARD

EN 10246-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1999

ICS 23.040.10; 77.040.20

English version

**Non-destructive testing of steel tubes - Part 5: Automatic full peripheral magnetic transducer/flux leakage testing of seamless and welded (except submerged arc welded) ferromagnetic steel tubes for the detection of longitudinal imperfections**

Essais non destructifs des tubes en acier - Partie 5:  
Contrôle automatique par flux de fuite à l'aide de palpeurs magnétiques sur toute la circonférence des tubes pour la détection des imperfections longitudinales des tubes en aciers ferromagnétiques sans soudure et soudés (sauf à l'arc immergé sous flux en poudre)

Zerstörungsfreie Prüfung von Stahlrohren - Teil 5:  
Automatische Magnetfeldsonden-Streulflußprüfung nahtloser und geschweißter (ausgenommen unterpulvergeschweißter) ferromagnetischer Stahlrohre über den gesamten Rohrumfang zum Nachweis von Längsfehlern

This European Standard was approved by CEN on 6 October 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  
EUROPAISCHES KOMITEE FÜR NORMUNG

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## **Foreword**

This European Standard has been prepared by Technical Committee ECISS/TC 29 "Steel tubes and fittings for steel tubes", the secretariat of which is held by UNI.

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 May 2000, and conflicting national standards shall be withdrawn at the latest by May 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

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 Part of EN 10246 specifies the requirements for automatic full peripheral magnetic transducer/flux leakage testing of seamless and welded ferromagnetic steel tubes, with the exception of submerged arc welded (SAW) tubes, for the detection of longitudinal imperfections. The standard specifies acceptance levels, calibration procedures and gives guidance on the limitations of the tests.

This Part of EN 10246 is applicable to the inspection of tubes with an outside diameter equal to or greater than 10 mm.

European Standard EN 10246 "Non-destructive testing of steel tubes" comprises the Parts shown in Annex A.

## 2 General requirements

**2.1** The magnetic transducer/flux leakage inspection covered by this Part of EN 10246 is usually carried out on tubes after completion of all the primary production process operations.

**2.2** The tubes to be tested shall be sufficiently straight and free from foreign matter as to ensure the validity of the test.

## 3 Method of test

**3.1** The tubes shall be tested using a magnetic transducer/flux leakage technique for the detection of predominantly longitudinal imperfections (see figure 1). No limits on thickness are specified: The effectiveness of the technique decreases with increasing thickness (see Annex B).

It is recognised that there may be a short length at both tube ends which cannot be tested. Any untested ends shall be dealt with in accordance with the requirements of the appropriate product standards.

NOTE: No limits on thickness are specified, but it is emphasized that the effectiveness of the technique decrease with increasing thickness ( see Annex B).

**3.2** During testing, the tube and the transducer shall be moved relative to each other so that the whole of the tube surface is scanned.

The relative speed during testing shall not vary by more than  $\pm 10\%$ .

**3.3** The maximum width of each individual transducer, measured parallel to the major axis of the tube shall be 30 mm.

**3.4** The equipment shall be capable of classifying tubes as either acceptable or suspect tubes by means of an automatic trigger/alarm level combined with a marking and/or sorting system.

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