

Non-destructive testing of steel tubes —

Part 3: Automatic eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections

The European Standard EN 10246-3:1999 has the status of a
British Standard

ICS 23.040.10; 77.040.20

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Document Sharing Hub

National foreword

This British Standard is the official English language version of EN 10246-3:1999.

This British Standard contains elements of BS 3889-1:1983. A complete list of the parts of EN 10246 is given in annex A of this standard. This British Standard partially supersedes BS 3889-1:1983, and when all relevant parts have been published BS 3889-1:1983 will be withdrawn.

The UK participation in its preparation was entrusted by Technical Committee ISE/73, Steels for pressure purposes, to Subcommittee ISE/73/1, Steel tubes for pressure purposes, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 14, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 February 2000

© BSI 02-2000

ISBN 0 580 35434 2

Amendments issued since publication

Amd. No.	Date	Comments

English version

Non-destructive testing of steel tubes – Part 3: Automatic eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections

Essais non destructifs des tubes en acier – Partie 3:
Contrôle automatique par courants de Foucault pour la
détection des imperfections des tubes en acier sans
soudure et soudés (sauf à l'arc immergé sous flux en
poudre)

Zerstörungsfreie Prüfung von Stahlrohren – Teil 3:
Automatische Wirbelstromprüfung nahtloser und
geschweißter (ausgenommen unterpulvergeschweißter)
Stahlrohre zum Nachweis von Fehlern

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
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

CONTENTS

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 General requirements	4
4 Method of test	4
5 Reference standards	7
6 Equipment calibration and checking	10
7 Acceptance	11
8 Test reporting	12
ANNEX A (informative) Table of Parts of EN 10246 - Non-destructive testing of steel tubes	13
ANNEX B (informative) Guidelines notes on limitations associated with the eddy current test method	14

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 eddy current testing of seamless and welded tubes with the exception of submerged arc-welded (SAW) tubes for the detection of 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 4 mm.

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

2 Normative references

This Part of EN 10246 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 those publications apply to this Part of EN 10246 only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 20286-2	ISO system of limits and fits - Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts (ISO 286-2:1988)
ENV 10220	Seamless and welded steel tubes - Dimensions and masses per unit length
ISO 235	Parallel shank jobber and stub series drills and Morse taper shank drills

3 General requirements

3.1 The eddy current inspection covered by this Part of EN 10246 is usually carried out on tubes after completion of all the primary production process operations.

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

4 Method of test

4.1 The tubes shall be tested by the eddy current test method for the detection of imperfections using one of the following techniques, as appropriate:

- a) Concentric coil technique - full peripheral (see figure 1);
- b) Rotating tube/pancake coil technique - full peripheral (see figure 2) ;
- c) Segment coil technique - weld only (see figure 3).

It is recognized 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.