

INTERNATIONAL STANDARD

**ISO
9304**

First edition
1989-07-15

Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Eddy current testing for the detection of imperfections

Tubes en acier sans soudure et soudés (sauf à l'arc immergé) pour service sous pression — Contrôle par courants de Foucault pour la détection des imperfections



Reference number
ISO 9304 : 1989 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9304 was prepared by Technical Committee ISO/TC 17, *Steel*.

Annex A of this International Standard is for information only.

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Introduction

This International Standard concerns eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for pressure purposes for the detection of imperfections.

Two different acceptance levels are considered (see tables 1 and 2). The choice between these acceptance levels is within the province of the ISO Technical Committee responsible for the development of the relevant quality standards.

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Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Eddy current testing for the detection of imperfections

1 Scope

This International Standard specifies requirements for eddy current testing of seamless and welded tubes for pressure purposes, with the exception of submerged arc-welded (SAW) tubes, for the detection of imperfections, according to two different acceptance levels (see tables 1 and 2). It is applicable to the inspection of tubes with an outside diameter greater than or equal to 4 mm.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 235 : 1980, *Parallel shank jobber and stub series drills and Morse taper shank drills*.

ISO 286-2 : 1988, *ISO system of limits and fits — Part 2 : Tables of standard tolerance grades and limit deviations for holes and shafts*.

ISO 4200 : 1985, *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length*.

3 General requirements

3.1 The eddy current inspection covered by this International Standard is usually carried out on tubes after completion of all the production process operations.

This inspection shall be carried out by suitable trained operators and supervised by competent personnel nominated by the manufacturer. In the case of third-party inspection, this shall be agreed between the purchaser and manufacturer.

3.2 The tubes to be tested shall be sufficiently straight to ensure the validity of the test. The surfaces shall be sufficiently free from foreign matter which would interfere with the validity of the test.

4 Method of test

4.1 For full peripheral testing of seamless and welded tubes, the tube shall be tested for imperfections using a concentric coil or a rotating tube/pancake coil eddy current technique. See figures 1 and 2.

NOTE — It is recognized that there is a short length at both tube ends which may not be able to be tested.