INTERNATIONAL STANDARD

ISO 12094

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Welded steel tubes for pressure purposes — Ultrasonic testing for the detection of laminar imperfections in strips/plates used in the manufacture of welded tubes

Tubes en acier soudés pour service sous pression — Contrôle par ultrasons pour la détection des imperfections de laminage des feuillards/plaques utilisés pour la fabrication de tubes soudés

Reference number
ISO 12094:1994(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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 12094 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 19, *Technical delivery conditions for steel tubes for pressure purposes*.

Annex A forms an integral part of this International Standard.

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Introduction

This International Standard covers ultrasonic testing for the detection of laminar imperfections in strips/plates used in the manufacture of welded steel tubes for pressure purposes.

Three different acceptance levels of laminar imperfection are considered. The choice between these acceptance levels is within the province of the ISO Technical Committee responsible for the development of the relevant product standards.

Other less severe acceptance criteria may be specified in the relevant technical delivery document.

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Welded steel tubes for pressure purposes — Ultrasonic testing for the detection of laminar imperfections in strips/plates used in the manufacture of welded tubes

1 Scope

1.1 This International Standard specifies requirements for the ultrasonic testing of strips/plates used in the manufacture of welded tubes for the detection of laminar imperfections according to three different acceptance levels.

This ultrasonic inspection of the strips/plates shall be carried out in the pipe mill before or during pipe production, in the flat form.

NOTES

1 In the case of electric resistance or induction welded tubes, an alternative ultrasonic testing specification for the detection of laminar imperfections is available, which may be applied, at the manufacturer's option, by ultrasonic testing of the tubes subsequent to seam welding in accordance with ISO 10124.

2 By agreement betwen the purchaser and manufacturer, the requirements of this International Standard may be applied on strips/plates of SAW tubes in the pipe form after seam welding.

1.2 This International Standard covers the inspection of strips/plates with a thickness greater than or equal to 4,0 mm.

1.3 It is stressed that the test techniques specified within this International Standard are based on statistical scanning of the product surface due to limitations imposed by the manufacturing process.

1) To be published.

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 indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10124:—[1], *Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes — Ultrasonic testing for the detection of laminar imperfections.*

ISO 11484:1994, *Steel tubes for pressure purposes — Qualification and certification of non-destructive testing (NDT) personnel.*

3 General requirements

3.1 This ultrasonic inspection of the strips/plates shall be carried out before or during pipe production in the flat form (see also notes 1 and 2).

This inspection may be performed using ultrasonic equipment of any design and configuration, provided that it fulfils the requirements of this International Standard.

This inspection shall be carried out by personnel qualified in accordance with ISO 11484, as nominated by the manufacturer. In the case of third-party in-