

Non-destructive testing of steel tubes - Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections (ISO 10893-7:2011)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10893-7:2011 sisaldab Euroopa standardi EN ISO 10893-7:2011 ingliskeelset teksti.

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English Version

Non-destructive testing of steel tubes - Part 7: Digital
radiographic testing of the weld seam of welded steel tubes for
the detection of imperfections (ISO 10893-7:2011)

Essais non destructifs des tubes en acier - Partie 7:
Contrôle radiographique numérique du cordon de soudure
des tubes en acier soudés pour la détection des
imperfections (ISO 10893-7:2011)

Zerstörungsfreie Prüfung von Stahlrohren - Teil 7: Digitale
Durchstrahlungsprüfung der Schweißnaht geschweißter
Stahlrohre zum Nachweis von Unvollkommenheiten (ISO
10893-7:2011)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 10893-7:2011) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee ECISS/TC 110 "Steel tubes, and iron and steel fittings" 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of an identical text or by endorsement, at the latest by October 2011, and conflicting national standards shall be withdrawn at the latest by October 2011.

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Endorsement notice

The text of ISO 10893-7:2011 has been approved by CEN as a EN ISO 10893-7:2011 without any modification.

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Introduction

Digital radiography has been used for the testing of longitudinal weld seams in submerged arc-welded steel tubes for some years. Digital radiography can be automated, and is considered to be more environmentally friendly than film-based radiographic techniques.

Digital radiography maintains the levels of security and availability afforded by X-ray film testing, which have been in place for many years. Images can be made available in a fraction of the time previously taken by film-based techniques, and usually at a lower exposure level and increased detector unsharpness when compared to film.

The storage and handling of digital images maintain the same levels of integrity available from film-based techniques, yet gain all the benefits associated with comprehensive data storage and retrieval systems.

Imaging systems are constantly under development, and an important aspect of this part of ISO 10893 is to qualify the use of those alternative systems currently available. This part of ISO 10893 describes the steps required to deliver these benefits.

Non-destructive testing of steel tubes —

Part 7:

Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections

1 Scope

This part of ISO 10893 specifies the requirements for digital radiographic X-ray testing by either computed radiography (CR) or radiography with digital detector arrays (DDA) of the longitudinal or helical weld seams of automatic fusion arc-welded steel tubes for the detection of imperfections. This part of ISO 10893 specifies acceptance levels and calibration procedures.

This part of ISO 10893 can also be applicable to the testing of circular hollow sections.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5576, *Non-destructive testing — Industrial X-ray and gamma-ray radiology — Vocabulary*

ISO 9712, *Non-destructive testing — Qualification and certification of personnel*

ISO 11484, *Steel products — Employer's qualification system for non-destructive testing (NDT) personnel*

ISO 17636, *Non-destructive testing of welds — Radiographic testing of fusion-welded joints*

ISO 19232-1, *Non-destructive testing — Image quality of radiographs — Part 1: Image quality indicators (wire type) — Determination of image quality value*

ISO 19232-2, *Non-destructive testing — Image quality of radiographs — Part 2: Image quality indicators (step/hole type) — Determination of image quality value*

ISO 19232-5, *Non-destructive testing — Image quality of radiographs — Part 5: Image quality indicators (duplex wire type) — Determination of image unsharpness value*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5576 and ISO 11484 and the following apply.

3.1

tube

hollow long product open at both ends, of any cross-sectional shape

3.2

welded tube

tube made by forming a hollow profile from a flat product and welding adjacent edges together, and which after welding can be further processed, either hot or cold, into its final dimensions