BS EN ISO 10893-3:2011+A2:2020

BSI Standards Publication

Non-destructive testing of steel tubes

Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections

bsi.

National foreword

This British Standard is the UK implementation of EN ISO 10893-3:2011+A2:2020. It is identical to ISO 10893-3:2011, incorporating amendments 1:2019 and 2:2020. It supersedes BS EN ISO 10893-3:2011+A1:2019, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by ▌A1〉 〈A1▐.

The UK participation in its preparation was entrusted to Technical Committee ISE/110, Steel Tubes, and Iron and Steel Fittings.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

Non-destructive testing of steel tubes — Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections (ISO 10893-3:2011)

Essais non destructifs des tubes en acier — Partie 3: Contrôle automatisé par flux de fuite sur toute la circonférence des tubes en acier ferromagnétique sans soudure et soudés (sauf à l'arc immergé sous flux en poudre) pour la détection des imperfections longitudinales et/ou transversales (ISO 10893-3:2011)

Zerstörungsfreie Prüfung von Stahlrohren — Teil 3: Automatisierte Streuflussprüfung nahtloser und geschweißter (ausgenommen unterpulvergeschweißter) ferromagnetischer Stahlrohre über den gesamten Rohrumfang zum Nachweis von Unvollkommenheiten in Längs- und/oder Querrichtung (ISO 10893-3:2011)

This European Standard was approved by CEN on 10 December 2010.

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European foreword

This document (EN ISO 10893-3:2011) 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 10893-3:2011 has been approved by CEN as EN ISO 10893-3:2011 without any modification.

Foreword to amendment A1

This document (EN ISO 10893-3:2011/A1:2019) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee CEN/TC 459/SC 10 “Steel tubes, and iron and steel fittings” the secretariat of which is held by UNI.

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Endorsement notice

The text of ISO 10893-3:2011/Amd 1:2019 has been approved by CEN as EN ISO 10893-3:2011/A1:2019 without any modification.

Foreword to amendment A2

This document (EN ISO 10893-3:2011/A2:2020) has been prepared by Technical Committee ISO/TC 17 "Steel" in collaboration with Technical Committee CEN/TC 459/SC 10 “Steel tubes, and iron and steel fittings” the secretariat of which is held by UNI.

This Amendment to the European Standard EN ISO 10893-3:2011 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2020, and conflicting national standards shall be withdrawn at the latest by December 2020.

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Endorsement notice

The text of ISO 10893-3:2011/Amd 2:2020 has been approved by CEN as EN ISO 10893-3:2011/A2:2020 without any modification.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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ISO 10893-3 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 19, *Technical delivery conditions for steel tubes for pressure purposes*.

This first edition cancels and replaces ISO 9402:1989 and ISO 9598:1989, which have been technically revised.

ISO 10893 consists of the following parts, under the general title *Non-destructive testing of steel tubes*:

— *Part 1: Automated electromagnetic testing of seamless and welded (except submerged arc-welded) steel tubes for the verification of hydraulic leaktightness*

— *Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections*

— *Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections*

— *Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections*

— *Part 5: Magnetic particle inspection of seamless and welded ferromagnetic steel tubes for the detection of surface imperfections*

— *Part 6: Radiographic testing of the weld seam of welded steel tubes for the detection of imperfections*

— *Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections*

— *Part 8: Automated ultrasonic testing of seamless and welded steel tubes for the detection of laminar imperfections*

— *Part 9: Automated ultrasonic testing for the detection of laminar imperfections in strip/plate used for the manufacture of welded steel tubes*

— *Part 10: Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections*

— *Part 11: Automated ultrasonic testing of the weld seam of welded steel tubes for the detection of longitudinal and/or transverse imperfections*

— *Part 12: Automated full peripheral ultrasonic thickness testing of seamless and welded (except submerged arc-welded) steel tubes*

INTERNATIONAL STANDARD **ISO 10893-3:2011+A2:2020**

Non-destructive testing of steel tubes —

Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections

1 Scope

This part of ISO 10893 specifies requirements for automated full peripheral magnetic flux leakage testing of seamless and welded ferromagnetic steel tubes, with the exception of submerged arc-welded (SAW) tubes, for the detection of imperfections.

Unless otherwise specified in the purchase order, this part of ISO 10893 is applicable to the detection of predominantly longitudinal imperfections.

This part of ISO 10893 is applicable to the inspection of tubes with an outside diameter equal to or greater than 10 mm.

This part of ISO 10893 can also be applicable to the testing of 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 9712, *Non-destructive testing — Qualification and certification of personnel*

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

3 Terms and definitions

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

3.1
reference standard
standard for the calibration of non-destructive testing equipment (e.g. drill holes, notches and recesses)

3.2
reference tube
tube or length of tube containing the reference standard(s)

3.3
reference sample
sample (e.g. segment of tube, plate or strip) containing the reference standard(s)

Note 1 to entry: Only the term “reference tube” is used in this part of ISO 10893, also covering the term “reference sample”.