INTERNATIONAL STANDARD

ISO 17577

Second edition
2016-01-15

Steel — Ultrasonic testing of steel flat products of thickness equal to or greater than 6 mm

Aciers — Contrôle ultrasonore des produits plats en acier d'épaisseur égale ou supérieure à 6 mm

Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 17, *Steel*, Subcommittee SC 7, *Methods of testing (other than mechanical tests and chemical analysis)*.

This second edition cancels and replaces the first edition (ISO 17577:2006), which has been technically revised.

Steel — Ultrasonic testing of steel flat products of thickness equal to or greater than 6 mm

1 Scope

This International Standard specifies a method for the automated and/or manual ultrasonic testing of uncoated steel flat products for internal discontinuities by the pulse echo technique.

It is applicable to non-alloyed or alloyed steel flat products, in a nominal thickness range of 6 mm to 200 mm. However, this International Standard may be applied to austenitic and austenitic-ferritic steels, provided that the difference between the amplitude of the noise signal and that of the echo detection threshold is sufficient for the limit fixed. Unless otherwise agreed, for testing of steel flat products for welded steel tubes, ISO 10893-9 applies.

Other techniques of testing (e.g. by transmission) or other test equipment may be used at the manufacturer's discretion, provided that they give identical results to those obtained under the conditions of this International Standard. In the event of a dispute, only the method defined in this International Standard will prevail.

Testing of flat products, of thickness less than 6 mm and over 200 mm, may be the subject of special agreements between the parties concerned.

Testing is normally carried out in the place of production or on the premises of the supplier.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 NDT personnel*

ISO 10893-9, *Non-destructive testing of steel tubes — Part 9: Automated ultrasonic testing for the detection of laminar imperfections in strip/plate used for the manufacture of welded steel tubes*

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 following terms and definitions apply.

3.1
internal discontinuity
any imperfection lying within the thickness of the flat products, e.g. planar or laminar imperfection, single-plane or multi-plane inclusion bands or clusters

3.2
defect
unacceptable internal discontinuities, i.e. exceeding the specified maximum size or population density limits

3.3
population density
number of individual internal discontinuities of a size greater than a specified minimum size and less than a specified maximum size per specified area of body or length of edge zone