INTERNATIONAL STANDARD

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Non-destructive testing of welds — Acceptance levels for radiographic testing —

Part 1: Steel, nickel, titanium and their alloys

Essais non destructifs des assemblages soudés — Niveaux d'acceptation pour évaluation par radiographie —

Partie 1: Acier, nickel, titane et leurs alliages

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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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 44, *Welding and allied processes,* Subcommittee SC 5, *Testing and inspection of welds,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding and allied processes,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 10675-1:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

— new Table 1 added with abbreviations;

— old Table 1 has been split into Table 2 and Table 3;

— in Table 4 (former Table 2), acceptance levels for maximum permissible pore sizes of porosity, clustered porosity, linear porosity and for lack of fusion have been added;

— the acceptance levels in Clause 6 have been extended (General and tables);

— the captures of Figure B.1 to B.9 have been revised to conform with ISO 5817:2014;

— Figures C.1 and C.2 and the text have been revised to conform with ISO 5817:2014;

— the document has been editorially revised.

A list of all parts of the ISO 10675 series can be found on the ISO website.

Official interpretations of ISO/TC 44 documents, where they exist, are available from this page: https://committee.iso.org/sites/tc44/home/interpretation.html.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Non-destructive testing of welds — Acceptance levels for radiographic testing —

Part 1: Steel, nickel, titanium and their alloys

1 Scope

This document specifies acceptance levels for indications from imperfections in butt welds of steel, nickel, titanium and their alloys detected by radiographic testing. If agreed, the acceptance levels can be applied to other types of welds (such as fillet welds, etc.) or materials.

The acceptance levels can be related to welding standards, application standards, specifications or codes. This document assumes that the radiographic testing has been carried out in accordance with ISO 17636-1 for RT-F (F = film) or ISO 17636-2 for RT-S (S = radioscopy) and RT-D (D = digital detectors).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 6520-1, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1: Fusion welding*

ISO 17636-1, *Non-destructive testing of welds — Radiographic testing — Part 1: X- and gamma-ray techniques with film*

ISO 17636-2, *Non-destructive testing of welds — Radiographic testing — Part 2: X- and gamma-ray techniques with digital detectors*

ISO 17637, *Non-destructive testing of welds — Visual testing of fusion-welded joints*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5817 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Symbols and abbreviations

For the purposes of this document, the symbols given in Table 1 apply

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