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BSI Standards Publication

Steel castings — Ultrasonic testing

Part 1: Steel castings for general purposes

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National foreword

This British Standard is the UK implementation of ISO 4992-1:2020. It supersedes BS ISO 4992-1:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ISE/111, Steel Castings and Forgings.

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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Compliance with a British Standard cannot confer immunity from legal obligations.

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Steel castings — Ultrasonic testing — Part 1: Steel castings for general purposes

Pièces moulées en acier - Contrôle par ultrasons —

Partie 1: Pièces moulées en acier pour usages généraux



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CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
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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 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 17, *Steel*, Subcommittee SC 11, *Steel castings*.

This second edition cancels and replaces the first edition (ISO 4992-1:2006), which has been technically revised. The main changes compared to the previous edition are as follows:

- New definition added for “rim zone” (3.6) and “non-measurable dimension (3.8);
- New subclause 4.3.1;
- Figure 2 was redrawn;
- Subtitles added to Figures 2, 3, 4 and Figures in Annexes A and B
- Figure A.1 Key 8 was corrected;
- Table in Figure A.1 numbered as Table A.1.

A list of all parts in the ISO 4992 series can be found on the ISO website.

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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Steel castings — Ultrasonic testing —

Part 1: Steel castings for general purposes

1 Scope

This document specifies the requirements for the ultrasonic testing of steel castings (with ferritic structure) for general purposes, and the methods for determining internal discontinuities by the pulse-echo technique.

This document applies to the ultrasonic testing of steel castings which have usually received a grain-refining heat treatment and which have wall thicknesses up to and including 600 mm. For greater wall thicknesses, special agreements apply with respect to the test procedure and the acceptance levels.

This document does not apply to austenitic steels and to joint welds.

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 2400, *Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 1*

ISO 5577, *Non-destructive testing — Ultrasonic testing — Vocabulary*

ISO 7963, *Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 2*

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

ISO 11971, *Steel and iron castings — Visual testing of surface quality*

ISO 16810, *Non-destructive testing — Ultrasonic testing — General principles*

ISO 16811, *Non-destructive testing — Ultrasonic testing — Sensitivity and range setting*

ISO 16827, *Non-destructive testing — Ultrasonic testing — Characterization and sizing of discontinuities*

ISO 22232-1¹⁾, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 1: Instruments*

ISO 22232-2²⁾, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 2: Probes*

ISO 22232-3³⁾, *Non-destructive testing — Characterization and verification of ultrasonic test equipment — Part 3: Combined equipment*

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