
**Steel castings — Ultrasonic testing —
Part 2:
Steel castings for highly stressed
components**

Pièces moulées en acier - Contrôle par ultrasons —

Partie 2: Pièces moulées en acier pour composants fortement sollicités

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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.

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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 4992-2:2006), 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 4.3.3.1;
- Figure 1 was redrawn;
- Text in Figure 2 moved to 4.3.3.2 and text in Figures 3 and 4 moved to 4.3.3.3;
- Figure referenced in 5.5.3.3 was corrected (new Figure 5 added);
- Figure 5 was renumbered as Figure 6;
- Subtitles added to Figure 1, Figure 6, and Figures in Annex C;
- Figure B.1 Key 8 was corrected;
- Table in Figure B.1 numbered as Table B.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.

Steel castings — Ultrasonic testing —

Part 2:

Steel castings for highly stressed components

1 Scope

This document specifies the requirements for the ultrasonic testing of steel castings (with ferritic structure) for highly stressed components, and the methods for determining internal discontinuities by the pulse-echo technique. Purchasers determine if components are highly stressed based on the need for performance or safety.

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 16827:2012, *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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