BSI Standards Publication

Founding — Ultrasonic testing

Part 3: Spheroidal graphite cast iron castings

National foreword

This British Standard is the UK implementation of EN 12680-3:2025. It supersedes BS EN 12680-3:2011, which is withdrawn.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 committee manager.

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Gießereiwesen - Ultraschallprüfung - Teil 3: Gussstücke aus Gusseisen mit Kugelgraphit

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European foreword

This document (EN 12680-3:2025) has been prepared by Technical Committee CEN/TC 190 “Foundry technology”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2026, and conflicting national standards shall be withdrawn at the latest by May 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12680-3:2011.

Annex A provides details of significant technical changes between EN 12680-3:2025 and EN 12680 3:2011.

This is one of four European Standards for ultrasonic testing. The other standards are:

— EN 12680-1, *Founding — Ultrasonic testing — Part 1: Steel castings for general purposes*

— EN 12680-2, *Founding — Ultrasonic testing — Part 2: Steel castings for highly stressed components*

— EN 12680-4, *Founding — Ultrasonic testing — Part 4: Phased array ultrasonic testing of steel castings*

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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1 Scope

This document specifies the requirements for the ultrasonic testing of spheroidal graphite cast iron castings and the techniques for determining internal discontinuities by the pulse-echo technique.

This document does not apply to ultrasonic testing of the nodularity of spheroidal graphite cast irons.

This document does not apply to phased array technique and to transmission technique.

NOTE The transmission technique has insufficient sensitivity to detect the discontinuities found in spheroidal graphite cast iron castings and is used in exceptional cases only.

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.

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

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

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

EN ISO 5577, *Non-destructive testing — Ultrasonic testing — Vocabulary (ISO 5577)*

EN ISO 2400, *Non-destructive testing — Ultrasonic testing — Specification for standard block No. 1 (ISO 2400)*

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

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

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 5577 and the following apply.

ISO and IEC maintain terminology 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/

3.1
rim zone
1/5 of the through-wall thickness from the surface with a minimum of 5 mm and a maximum of 30 mm thickness in through-wall direction