Founding — Ultrasonic testing
Part 3: Spheroidal graphite cast iron castings
National foreword

This British Standard is the UK implementation of EN 12680-3:2011. It supersedes BS EN 12680-3:2003 which is withdrawn.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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Amendments issued since publication

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This European Standard was approved by CEN on 15 October 2011.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 12680-3:2011) 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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

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

This document supersedes EN 12680-3:2003.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 10 "Inner defects" to revise the following standard:


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

EN 12680-1, Founding — Ultrasonic examination — Part 1: Steel castings for general purposes;

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

Annex A provides details of significant technical changes between this European Standard and the previous edition.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.
1 Scope

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

This European Standard does not apply 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 referenced documents are indispensable for the application 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.

EN 473, Non-destructive testing — Qualification and certification of NDT personnel — General principles

EN 583-1, Non-destructive testing — Ultrasonic examination — Part 1: General principles

EN 583-2, Non-destructive testing — Ultrasonic examination — Part 2: Sensitivity and range setting

EN 583-5, Non-destructive testing — Ultrasonic examination — Part 5: Characterization and sizing of discontinuities

EN 1330-4, Non-destructive testing — Terminology — Part 4: Terms used in ultrasonic testing

EN 12223, Non-destructive testing — Ultrasonic examination — Specification for calibration block No. 1

EN 12668-1, Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 1: Instruments

EN 12668-2, Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 2: Probes

EN 12668-3, Non-destructive testing — Characterization and verification of ultrasonic examination equipment — Part 3: Combined equipment

EN ISO 7963, Non-destructive testing — Ultrasonic testing — Specification for calibration block No. 2 (ISO 7963:2006)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1330-4 and the following apply.

3.1 dross

accumulation of fine slag particles (oxides, sulphides, etc.) in the rim zone of castings

NOTE In smaller castings, dross is usually not detected by ultrasonic testing.