

**Founding - Ultrasonic testing - Part 3: Spheroidal
graphite cast iron castings**

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NATIONAL FOREWORD

See Eesti standard EVS-EN 12680-3:2011 sisaldab Euroopa standardi EN 12680-3:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 12680-3:2011 consists of the English text of the European standard EN 12680-3:2011.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

Founding - Ultrasonic testing - Part 3: Spheroidal graphite cast iron castings

Fonderie - Contrôle par ultrasons - Partie 3: Pièces
moulées en fonte à graphite sphéroïdal

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

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.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:

EN 12680-3, *Founding — Ultrasonic examination — Part 3: Spheroidal graphite cast iron castings*.

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.