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STN	**Zlievarenstvo Skúšanie ultrazvukom Časť 2: Oceľové odliatky pre vysoko namáhané komponenty**	**STN EN 12680-2 42 9731**

Founding - Ultrasonic testing - Part 2: Steel castings for highly stressed components

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/26

Obsahuje: EN 12680-2:2025

Oznámením tejto normy sa ruší
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12680-2

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ICS 77.040.20; 77.140.80 Supersedes EN 12680-2:2003

English Version

Founding - Ultrasonic testing - Part 2: Steel castings for highly stressed components

Fonderie - Contrôle par ultrasons - Partie 2: Pièces moulées en acier pour composants fortement sollicités

Gießereiwesen - Ultraschallprüfung - Teil 2: Stahlgussstücke für hoch beanspruchte Bauteile

This European Standard was approved by CEN on 22 September 2025.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 21 January 2026

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12680-2:2025) 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of an identical text or by endorsement, at the latest by May 2026, and conflicting national standards shall be withdrawn at the latest by May 2026.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 12680-2:2003.

Annex D provides details of significant technical changes between EN 12680-2:2025 and EN 12680-2:2003.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 10 “Testing for inner discontinuities” to prepare the following standard:

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

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

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

Annex A is normative. Annex B and Annex C are informative.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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.

Highly-stressed means for example:

— High material utilization (close to $R_{p0,2}$)

— High static and cyclic load

— For fail-safe assessment, requiring a fracture-mechanic assessment

An example for a highly-stressed cast component is a turbine housing, subjected to combined high static, cyclic and thermal load.

Purchasers determine if components are highly stressed based on the need for performance or safety.

For lower-stressed cast components for general purposes, EN 12680-1 applies.

This document is applicable 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 are applicable with respect to test procedure and recording levels.

This document does not apply to austenitic steels and 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.

EN 1370, *Founding — Examination of surface condition*

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

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

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

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 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)*