SLOVENSKI STANDARD
SIST EN 12680-4:2027

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Livarstvo - Ultrazvočno preskušanje - 4. del: Ultrazvočno preskušanje jeklenih ulitkov s faznim nizom

Founding - Ultrasonic testing - Part 4: Phased array ultrasonic testing of steel castings

Gießereiwesen - Ultraschallprüfung - Teil 4: Phased-Array-Ultraschallprüfung von Stahlgussteilen

Fonderie - Contrôle par ultrasons - Partie 4 : Contrôle par ultrasons en multiéléments de pièces moulées en acier

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ICS:

77.140.80	Železni in jekleni ulitki	Iron and steel castings

SIST EN 12680-4:2027 **en,fr,de**

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EUROPEAN STANDARD

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EN 12680-4

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ICS 77.140.80

English Version

Founding - Ultrasonic testing - Part 4: Phased array ultrasonic testing of steel castings

Fonderie - Contrôle par ultrasons - Partie 4 : Contrôle par ultrasons multiéléments de pièces en acier moulé

Gießereiwesen - Ultraschallprüfung - Teil 4: Phased-Array-Ultraschallprüfung von Stahlgussstücken

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European foreword

This document (EN 12680-4:2026) 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of an identical text or by endorsement, at the latest by May 2027, and conflicting national standards shall be withdrawn at the latest by May 2027.

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.

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

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

Annex A is 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.

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1 Scope

This document specifies requirements for phased array ultrasonic examination of steel castings with low ultrasonic attenuation. It is applicable to ferritic, bainitic and martensitic microstructures. It specifies the registration levels and acceptance criteria.

This document is applicable to the ultrasonic examination of steel castings with a wall thickness of 600 mm or less.

For higher wall thicknesses, special agreements apply regarding the test procedure and recording levels.

This document does not apply to austenitic steels and cast irons, lamellar graphite and spheroidal cast irons and welded assemblies. For other ferrous materials, this document gives guidance. The registration levels and acceptance criteria are to be adapted.

In this document, phased array is used both for phased array technique and TFM technique.

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

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

EN ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel (ISO 9712)*

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

EN ISO 18563-1, *Non-destructive testing — Characterization and verification of ultrasonic phased array equipment — Part 1: Instruments (ISO 18563-1)*

EN ISO 18563-2, *Non-destructive testing — Characterization and verification of ultrasonic phased array equipment — Part 2: Array probes (ISO 18563-2)*

EN ISO 18563-3, *Non-destructive testing — Characterization and verification of ultrasonic phased array equipment — Part 3: Complete systems (ISO 18563-3)*

EN ISO 23243, *Non-destructive testing — Ultrasonic testing with arrays — Vocabulary (ISO 23243)*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 5577, EN ISO 23243 and EN 12680-1 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
ultrasonic instrument
generic term used for both Phased Array instrument and TFM instrument

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