Non-destructive testing - Ultrasonic testing - Examination for loss of thickness due to erosion and/or corrosion using the TOFD technique

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17290:2021 sisaldab Euroopa standardi EN 17290:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 17290:2021 consists of the English text of the European standard EN 17290:2021.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 13.10.2021.	Date of Availability of the European standard is 13.10.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Non-destructive testing - Ultrasonic testing - Examination for loss of thickness due to erosion and/or corrosion using the TOFD technique

Essais non destructifs - Contrôle par ultrasons - Examen de la perte d'épaisseur due à l'érosion et/ou à la corrosion par la technique TOFD

Zerstörungsfreie Prüfung - Ultraschallprüfung - Prüfung für den Verlust der Dicke aufgrund von Erosion und/oder Korrosion unter Anwendung der Beugungslaufzeittechnik (TOFD)

This European Standard was approved by CEN on 5 March 2021.

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

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European foreword

This document (EN 17290:2021) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by April 2022, and conflicting national standards shall be withdrawn at the latest by April 2022.

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.

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 application of the time-of-flight diffraction (TOFD) technique in testing of metals for quantifying loss of thickness due to erosion and/or corrosion.

This document applies to all types of corrosion and/or erosion damage, particularly those defined in EN ISO 16809.

This document applies to unalloyed or low-alloyed steels.

It applies to components with a nominal thickness ≥ 6 mm. For smaller thicknesses, feasibility tests are performed to validate the test technique.

For other materials, feasibility tests are essential, too.

The TOFD technique can be used as a stand-alone technique or in combination with other non-destructive testing techniques, for in-service testing, in order to detect material loss caused by erosion and/or corrosion.

This technique is based on analysis of TOFD images using reflected and/or diffracted ultrasonic signals.

This document does not specify acceptance levels.

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 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 10863:2020, *Non-destructive testing of welds — Ultrasonic testing — Use of time-of-flight diffraction technique (TOFD) (ISO 10863:2020)*

EN ISO 16828:2014, *Non-destructive testing — Ultrasonic testing — Time-of-flight diffraction technique as a method for detection and sizing of discontinuities (ISO 16828:2012)*

EN ISO 17659, *Welding — Multilingual terms for welded joints with illustrations (ISO 17659)*

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)*