Non-destructive testing - Acoustic emission testing - In-service acoustic emission monitoring of metallic pressure equipment and structures - General requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17391:2022 sisaldab Euroopa standardi EN 17391:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 17391:2022 consists of the English text of the European standard EN 17391:2022.
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 29.06.2022.	Date of Availability of the European standard is 29.06.2022.
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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English Version

Non-destructive testing - Acoustic emission testing - In-service acoustic emission monitoring of metallic pressure equipment and structures - General requirements

Essais non destructifs - Contrôle par émission acoustique - Surveillance en service par émission acoustique des équipements et structures métalliques sous pression - Exigences générales

Zerstörungsfreie Prüfung - Schallemissionsprüfung - Überwachung der Schallemission von metallischen Druckgeräten und Strukturen im Betrieb - Allgemeine Grundsätze

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

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

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European foreword

This document (EN 17391:2022) 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of an identical text or by endorsement, at the latest by December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

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Introduction

Acoustic emission testing (AT) is well established for the detection of discontinuities in metallic structures. Furthermore, AT is widely accepted and applied during hydraulic or pneumatic test. In-service acoustic emission (AE) monitoring can provide global surveillance of structural details for early detection of active cracks and damage evolution. It allows through life damage assessment guiding subsequent non-destructive testing (NDT) for damage verification and damage sizing purposes.

1 Scope

This document specifies general requirements for in-service acoustic emission (AE) monitoring. It relates to detection, location and grading of AE sources with application to metallic pressure equipment and other structures such as bridges, bridge ropes, cranes, storage tanks, pipelines, wind turbine towers, marine applications, offshore structures. The monitoring can be periodic, temporary or continuous, on site or remote-controlled, supervised or automated. The objectives of AE monitoring are to define regions which are acoustically active as a result of damage or defect evolution.

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 1330-1:2014, *Non destructive testing — Terminology — Part 1: List of general terms*

EN 1330-2:1998, *Non destructive testing — Terminology — Part 2: Terms common to the non-destructive testing methods*

EN 1330-9:2017, *Non-destructive testing — Terminology — Part 9: Terms used in acoustic emission testing*

EN 13477-1:2001, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 1: Equipment description*

EN 13477-2:2010, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 2: Verification of operating characteristic*

EN 13554:2011, *Non-destructive testing — Acoustic emission testing — General principles*

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code)*[1]

EN ISO/IEC 17025:2017, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1330-1:2014, EN 1330-2:1998 and EN 1330-9:2017 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Personnel qualification

It is assumed that acoustic emission monitoring is performed by qualified personnel. In order to prove this qualification, it is recommended to qualify the personnel in accordance with EN ISO 9712.

[1] As impacted by EN 60529:1991/corrigendum May 1993, EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/A2:2013/AC:2019-02.