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Non-destructive testing - Acoustic emission - General principles of AE testing for the detection of corrosion within metallic surrounding filled with liquid

I.S. EN 15856:2010

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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English Version

**Non-destructive testing - Acoustic emission - General principles
of AE testing for the detection of corrosion within metallic
surrounding filled with liquid**

Essais non destructifs - Emission acoustique - Principes
généraux des contrôles par émission acoustique pour la
détection de la corrosion dans une enceinte métallique
remplie de liquide

Zerstörungsfreie Prüfung - Schallemissionsprüfung -
Allgemeine Grundsätze der Schallemissionsprüfung zum
Nachweis von Korrosion innerhalb von mit Flüssigkeit
gefüllten metallischen Umschließungen

This European Standard was approved by CEN on 28 November 2009.

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Foreword

This document (EN 15856:2010) 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of an identical text or by endorsement, at the latest by July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

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1 Scope

This European Standard describes acoustic emission testing (AT) on metallic surroundings filled with liquids for the detection of corrosion processes that are active at the time of the test. It is applicable to metallic storage tanks, such as those used in the chemical and petrochemical industry.

The results provide a qualitative statement regarding the condition of the test object and a recommendation regarding the maximum allowable duration of the follow-on service period, based on the AT indications and additional information in order to characterize the AT indications.

In the case of flat bottomed storage tanks (FBST) the procedure described within this standard provides testing of the complete bottom, the tank shell up to the filling height and in case of a floating roof tank also the roof sheets in contact with the stored liquid.

As for every application of acoustic emission testing, the measured data contain information regarding active sources. An ongoing corrosion process, such as general corrosion and localized corrosion defined in EN ISO 8044, leading to progressive loss of wall thickness will be detected. A corrosion process which has stopped does not produce acoustic emission and will therefore not be detected at the time of test.

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 1330-1:1998, *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 1330-9:2009, *Non-destructive testing — Terminology — Part 9: Terms used in acoustic emission testing*

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

EN 13477-2, *Non-destructive testing — Acoustic emission — Equipment characterisation — Part 2: verification of operating characteristics*

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

EN ISO 8044:1999, *Corrosion of metals and alloys — Basic terms and definitions (ISO 8044:1999)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1330-1:1998, EN 1330-2:1998, EN 1330-9:2009 and EN ISO 8044:1999 apply.

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