



NSAI
Standards

Irish Standard
I.S. EN ISO 18081:2016

Non-destructive testing - Acoustic emission testing (AT) - Leak detection by means of acoustic emission (ISO 18081:2016)

I.S. EN ISO 18081:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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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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National Foreword

I.S. EN ISO 18081:2016 is the adopted Irish version of the European Document EN ISO 18081:2016, Non-destructive testing - Acoustic emission testing (AT) - Leak detection by means of acoustic emission (ISO 18081:2016)

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EUROPEAN STANDARD

EN ISO 18081

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2016

ICS 19.100

English Version

**Non-destructive testing - Acoustic emission testing (AT) -
Leak detection by means of acoustic emission (ISO
18081:2016)**

Essais non destructifs - Contrôle par émission
acoustique - Détection de fuites par émission
acoustique (ISO 18081:2016)

Zerstörungsfreie Prüfung - Schallemissionsprüfung -
Dichtheitsprüfung mittels Schallemission (ISO
18081:2016)

This European Standard was approved by CEN on 22 April 2016.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN ISO 18081:2016) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing” the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 135 “Non-destructive testing”.

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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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The text of ISO 18081:2016 has been approved by CEN as EN ISO 18081:2016 without any modification.

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**INTERNATIONAL
STANDARD**

**ISO
18081**

First edition
2016-06-01

**Non-destructive testing — Acoustic
emission testing (AT) — Leak
detection by means of acoustic
emission**

*Essais non destructifs — Contrôle par émission acoustique —
Détection de fuites par émission acoustique*



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 18081 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in collaboration with ISO Technical Committee TC 135, *Non-destructive testing*, Subcommittee SC 9, *Acoustic emission testing*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Non-destructive testing — Acoustic emission testing (AT) — Leak detection by means of acoustic emission

1 Scope

This International Standard specifies the general principles required for leak detection by acoustic emission testing (AT). It is addressed to the application of the methodology on structures and components, where a leak flow as a result of pressure differences appears and generates acoustic emission (AE).

It describes phenomena of the AE generation and influence of the nature of fluids, shape of the gap, wave propagation and environment.

The different application methods, instrumentation and presentation of AE results is discussed. Also included are guidelines for the preparation of application documents which describe specific requirements for the application of the AE method.

Different application examples are given.

Unless otherwise specified in the referencing documents, the minimum requirements of this International Standard are applicable.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

EN 1330-1, *Non-destructive testing — Terminology — Part 1: General terms*

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

EN 1330-9, *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 testing — General principles*

EN 60529, *Degrees of protection provided by enclosures (IP Code)*

3 Terms and definitions

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

NOTE The definitions of leak, leakage rate, leak tight are those defined in EN 1330-8.

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