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BSI Standards Publication

## Non-destructive testing - Terminology

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Part 9: Terms used in acoustic emission testing

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## National foreword

This British Standard is the UK implementation of EN 1330-9:2017. It supersedes BS EN 1330-9:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/46, Non-destructive testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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### Amendments/corrigenda issued since publication

Date	Text affected
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## EUROPÄISCHE NORM

July 2017

ICS 01.040.19; 19.100

Supersedes EN 1330-9:2009

English Version

## Non-destructive testing - Terminology - Part 9: Terms used in acoustic emission testing

Essais non destructifs - Terminologie - Partie 9 :  
Termes utilisés en contrôle par émission acoustique

Zerstörungsfreie Prüfung - Terminologie - Teil 9:  
Begriffe der Schallemissionsprüfung

This European Standard was approved by CEN on 11 May 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 1330-9:2017) 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 January 2018, and conflicting national standards shall be withdrawn at the latest by January 2018.

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.

This document supersedes EN 1330-9:2009.

EN 1330, *Non destructive testing — Terminology*, is currently composed with the following parts:

- *Part 1: List of general terms;*
- *Part 2: Terms common to the non-destructive testing methods;*
- *Part 3: Terms used in industrial radiographic testing;*
- *Part 8: Terms used in leak tightness testing;*
- *Part 9: Terms used in acoustic emission testing;*
- *Part 10: Terms used in visual testing;*
- *Part 11: Terms used in X-ray diffraction from polycrystalline and amorphous materials (EN 1330-11).*

And

- EN ISO 5577 Non-destructive testing - Ultrasonic testing - Vocabulary
- EN ISO 12706 Non-destructive testing - Penetrant testing - Vocabulary
- EN ISO 12707 Non-destructive testing - Magnetic particle testing - Vocabulary
- EN ISO 12718 Non-destructive testing - Eddy current testing - Vocabulary

Note 1: EN ISO 5577 was published formerly as EN 1330-4.

Note 2: EN ISO 12706 was published formerly as EN 1330-6.

Note 3: EN ISO 12707 was published formerly as EN 1330-7.

Note 4: EN ISO 12718 was published formerly as EN 1330-5.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This European Standard is concerned only with terms used specifically in acoustic emission testing (AT) and these fall into four parts:

- a) terms relating to the physical phenomenon;
- b) terms relating to the detection of the acoustic emission;
- c) terms relating to the measured characteristics of the signal(s);
- d) terms relating to acoustic emission applications.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1 General

#### 2.1.1

##### **acoustic emission**

**AE**  
phenomena whereby transient elastic waves are generated by, e.g. plastic deformation, crack propagation, erosion, corrosion, impact, leakage

### 2.2 Terms relating to the physical phenomenon

#### 2.2.1

##### **acoustic emission event**

physical phenomenon giving rise to acoustic emission

#### 2.2.2

##### **acoustic emission source**

spatial element from where one (or more) acoustic emission event(s) originate(s)

#### 2.2.3

##### **acoustic emission event mechanism**

dynamic process or combination of processes occurring within a material, generating acoustic emission events

Note 1 to entry: AE event mechanisms can be subdivided into several categories: material and mechanical, macroscopic and microscopic, primary and secondary.

#### 2.2.4

##### **acoustic emission wave**

transient elastic wave generated by an acoustic emission event

#### 2.2.5

##### **acoustic emission wave energy**

elastic wave energy released by an acoustic emission event

#### 2.2.6

##### **acoustic emission stimulation**

application of a stimulus such as force, pressure, heat, and so forth, to a test object to cause activation of acoustic emission sources