SLOVENSKI STANDARD
SIST EN ISO 5577:2017

01-julij-2017

Nadomešča:
SIST EN 1330-4:2011

Neporušitvene preiskave - Preskušanje z ultrazvokom - Slovar (ISO 5577:2017)

Non-destructive testing - Ultrasonic testing - Vocabulary (ISO 5577:2017)

Zerstörungsfreie Prüfung - Ultraschallprüfung - Terminologie (ISO 5577:2017)

Essais non destructif - Contrôle par ultrasons - Vocabulaire (ISO 5577:2017)

Ta slovenski standard je istoveten z: EN ISO 5577:2017

ICS:

01.040.19	Preskušanje (Slovarji)	Testing (Vocabularies)
19.100	Neporušitveno preskušanje	Non-destructive testing

SIST EN ISO 5577:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 5577

February 2017

ICS 01.040.19; 19.100

Supersedes EN 1330-4:2010

English Version

Non-destructive testing - Ultrasonic testing - Vocabulary (ISO 5577:2017)

Essais non destructif - Contrôle par ultrasons - Vocabulaire (ISO 5577:2017)

Zerstörungsfreie Prüfung - Ultraschallprüfung - Terminologie (ISO 5577:2017)

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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 ISO 5577:2017) has been prepared by Technical Committee ISO/TC 135 "Non-destructive testing" in collaboration with 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of an identical text or by endorsement, at the latest by August 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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Endorsement notice

The text of ISO 5577:2017 has been approved by CEN as EN ISO 5577:2017 without any modification.

INTERNATIONAL STANDARD

ISO 5577

Second edition
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Non-destructive testing — Ultrasonic testing — Vocabulary

Essais non destructif — Contrôle par ultrasons — Vocabulaire

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

ISO 5577 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 3, *Ultrasonic testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 5577:2000), which has been technically revised with changes to terms and definitions and structure.

Non-destructive testing — Ultrasonic testing — Vocabulary

1 Scope

This document defines the terms used in ultrasonic non-destructive testing and forms a common basis for standards and general use. This document does not cover terms used in ultrasonic testing with phased arrays.

NOTE Terms for phased array ultrasonic testing are defined in EN 16018.

2 Normative references

There are no normative references in this document.

3 Terms related to frequencies, waves and pulses

For the purposes of this document, the terms and definitions given in this clause and those given in Clauses 4, 5 and 6 for sound, test equipment and ultrasonic testing apply.

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

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

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

3.1 Frequencies

3.1.1
frequency
number of cycles per second

Note 1 to entry: Expressed in Hertz (Hz).

3.1.2
nominal frequency
probe frequency
frequency (3.1.1) of the *probe* (5.2.1) as stated by the manufacturer

3.1.3
test frequency
effective ultrasonic frequency of a system used to test a material or object

3.1.4
frequency spectrum
distribution of *amplitude* (3.2.2) in relation to *frequency* (3.1.1)

Note 1 to entry: See Figure 1.

3.1.5
centre frequency
arithmetic mean of the cut-off frequencies

Note 1 to entry: See Figure 1.

3.1.6
peak frequency
frequency (3.1.1) at which the maximum amplitude is observed

Note 1 to entry: See Figure 1.

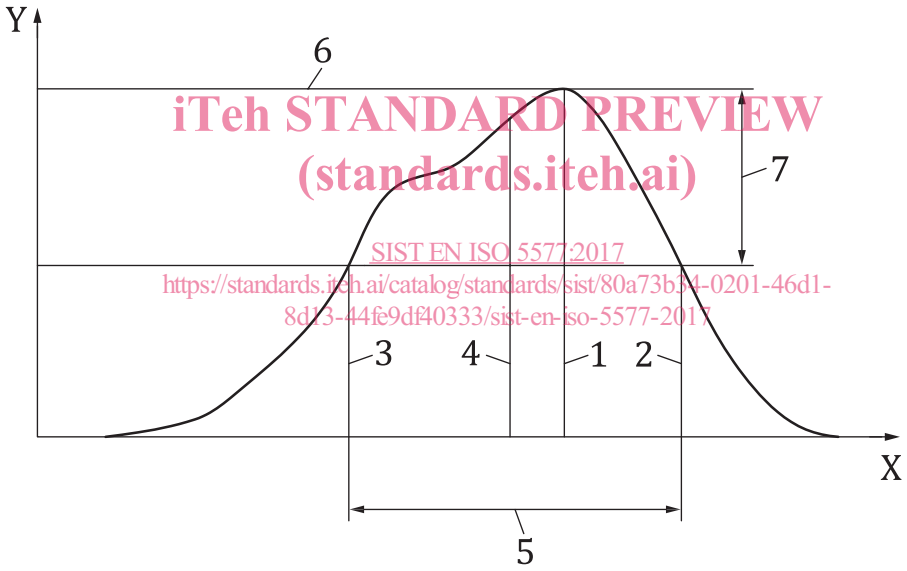
3.1.7
cut-off frequency
frequency (3.1.1) at which the *amplitude* (3.2.2) of transmitted signal has dropped by a specified amount from the amplitude at *peak frequency* (3.1.6), for example, by 3 dB

Note 1 to entry: See Figure 1.

3.1.8
bandwidth
width of the *frequency spectrum* (3.1.4) between the upper and lower cut-off frequency

Note 1 to entry: See Figure 1.

3.1.9
relative bandwidth
ratio of the *bandwidth* (3.1.8) to the *centre frequency* (3.1.5), in per cent



Key

X	frequency	4	centre frequency
Y	amplitude	5	bandwidth at specified amplitude drop
1	peak frequency	6	peak amplitude
2	upper cut-off frequency	7	specified amplitude drop
3	lower cut-off frequency		

Figure 1 — Terms related to frequency and bandwidth

3.2 Waves and pulses

3.2.1
ultrasonic wave
any acoustic wave having a *frequency* (3.1.1) higher than the audible range of the human ear, generally taken as higher than 20 kHz

3.2.2
amplitude
absolute or relative measure of a sound wave's magnitude

3.2.3
phase
momentary condition of a vibration expressed as an arc measurement or an angle

3.2.4
wavelength
distance between consecutive corresponding points of the same *phase* (3.2.3)

Note 1 to entry: See Figure 2.

3.2.5
wavefront
continuous surface joining all the most forward points of a wave that have the same *phase* (3.2.3)

3.2.6
time-of-flight
TOF
time it takes an ultrasonic pulse to travel from the transmitter probe through the test object to the receiver probe

3.2.7
pulse
electrical or ultrasonic signal of short duration

3.2.8
pulse amplitude
maximum amplitude of a *pulse* (3.2.7) (peak-to-peak)

Note 1 to entry: For rectified pulses (A-scan), baseline-to-peak.

3.2.9
pulse rise time
time taken for a *pulse amplitude* (3.2.8) to change between two defined levels

3.2.10
pulse duration
time interval between the leading and trailing edges of a *pulse* (3.2.7) measured at a defined level below the peak amplitude

3.2.11
pulse shape
diagramatic representation of the *amplitude* (3.2.2) of a *pulse* (3.2.7) as a function of time

3.2.12
pulse envelope
contour of a *pulse shape* (3.2.11) including all the peaks in terms of *amplitude* (3.2.2) and time

3.2.13
pulse energy
total energy within a *pulse* (3.2.7)

3.2.14
pulse reverberation
undesirable vibration at the beginning and end of a *pulse* (3.2.7) above a defined level

3.2.15
broad-band pulse
pulse (3.2.7) in which the *relative bandwidth* (3.1.9) is ≥65 %