

Non-destructive testing - Ultrasonic testing with arrays -  
Vocabulary (ISO 23243:2020)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 23243:2020 sisaldab Euroopa standardi EN ISO 23243:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 23243:2020 consists of the English text of the European standard EN ISO 23243:2020.
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English Version

Non-destructive testing - Ultrasonic testing with arrays -  
Vocabulary (ISO 23243:2020)

Essais non destructifs - Contrôle à l'aide de réseaux  
ultrasonores - Vocabulaire (ISO 23243:2020)

Zerstörungsfreie Prüfung - Ultraschallprüfung mit  
Arrays - Terminologie (ISO 23243:2020)

This European Standard was approved by CEN on 16 November 2020.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN ISO 23243:2020) 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of an identical text or by endorsement, at the latest by June 2021, and conflicting national standards shall be withdrawn at the latest by June 2021.

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.

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## Endorsement notice

The text of ISO 23243:2020 has been approved by CEN as EN ISO 23243:2020 without any modification.

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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](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 3, *Ultrasonic testing*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document follows a structure similar to that in ISO 5577 but only takes into account terms related to ultrasonic arrays.

The general terms already defined in ISO 5577 are also valid for ultrasonic arrays.

# Non-destructive testing — Ultrasonic testing with arrays — Vocabulary

## 1 Scope

This document defines terms used in ultrasonic testing with arrays. This includes phased array technology and signal processing technology using arrays, e. g. the full-matrix capture (FMC) (3.3.1.28) and the total focusing technique (TFM) (3.3.1.35).

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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/>

### 3.1 Terms related to sound

#### 3.1.1

##### **main lobe**

##### **main beam**

sound beam in the intended direction, typically with the highest pressure within the sound field

Note 1 to entry: This applies to conventional and *array probes* (3.2.1.3).

#### 3.1.2

##### **side lobe**

part of the sound field which corresponds to a local maximum in the far field, deviating from the direction of the *main lobe* (3.1.1) and typically lower in amplitude

Note 1 to entry: This applies to conventional and *array probes* (3.2.1.3).

#### 3.1.3

##### **grating lobe**

parasitic replication of the *main lobe* (3.1.1) caused by spatial undersampling (low ratio between wavelength and *pitch* (3.2.1.16)), deviating from the direction of the main lobe and possibly of similar amplitude

Note 1 to entry: This applies to *array probes* (3.2.1.3) only.

### 3.2 Terms related to the test equipment

#### 3.2.1 Probes

##### 3.2.1.1

##### **array**

piezoelectric plate divided into several *elements* (3.2.1.2), which are acoustically and electrically separated