



SLOVENSKI STANDARD
oSIST prEN ISO 23243:2018
01-december-2018

Neporušitveno preskušanje - Terminologija - Izrazi, ki se uporabljajo pri ultrazvočnih preiskavah z matrično postavitvijo (phased array) (ISO/DIS 23243:2018)

Non-destructive testing - Terminology - Terms used in ultrasonic testing with phased arrays (ISO/DIS 23243:2018)

Zerstörungsfreie Prüfung - Terminologie - Begriffe der Ultraschallprüfung mit phasengesteuerten Arrays (ISO/DIS 23243:2018)

Essais non-destructifs - Terminologie - Termes utilisés pour le contrôle par ultrasons en multiéléments (ISO/DIS 23243:2018)

Ta slovenski standard je istoveten z: prEN ISO 23243

ICS:

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

oSIST prEN ISO 23243:2018

en,fr,de

DRAFT INTERNATIONAL STANDARD

ISO/DIS 23243

ISO/TC 135/SC 3

Secretariat: DIN

Voting begins on:
2018-10-25Voting terminates on:
2019-01-17

Non-destructive testing — Terminology — Terms used in ultrasonic testing with phased arrays

Essais non-destructifs — Terminologie — Termes utilisés pour le contrôle par ultrasons en multi-éléments

ICS: 01.040.19; 19.100

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 23243:2021](https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021)<https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING



Reference number
ISO/DIS 23243:2018(E)

© ISO 2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 23243:2021

<https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Terms related to sound.....	1
3.2 Terms related to test equipment.....	1
3.2.1 Probes.....	1
3.2.2 Instruments.....	4
3.3 Terms related to testing.....	5
3.3.1 Testing techniques.....	5
3.4 Signals and indications.....	8
3.4.1 Evaluation of indications.....	9
4 Figures	9
Bibliography	18

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 23243:2021

<https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021>

ISO/DIS 23243:2018(E)**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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

The committee responsible for this document is ISO/TC 135.

SIST EN ISO 23243:2021

<https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021>

Introduction

This document follows a similar structure to ISO 5577 but it only takes into account terminology relating to ultrasonic arrays.

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 23243:2021

<https://standards.iteh.ai/catalog/standards/sist/2dda4f29-759a-4288-bae5-7c56bfd79f8d/sist-en-iso-23243-2021>

Non-destructive testing — Terminology — Terms used in ultrasonic testing with phased arrays

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. FMC-TFM.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 Terms related to sound

3.1.1

side lobes beams, generated by a transducer, that deviate from the direction of the main beam

3.1.2

grating lobes

parasitic replications of the main beam caused by spatial undersampling (pitch between elements compared to wavelength)

3.2 Terms related to test equipment

3.2.1 Probes

3.2.1.1

array

piezo-electric plate divided into several elements

3.2.1.2

array element

element

smallest part of the array acting as a transducer

Note 1 to entry: See Figure 11.

3.2.1.3

array probe

probe with an array for transmitting and receiving

ISO/DIS 23243:2018(E)**3.2.1.4****arrangement of the array**

distribution of all the elements in an array

3.2.1.5**linear array****1-D-linear array**

array of elements arranged in a single straight line allowing steering in one direction (x) and focusing in depth direction

Note 1 to entry: See Figure 1.

3.2.1.6**annular array**

array of ring-shaped elements arranged concentrically allowing focusing in depth direction

Note 1 to entry: See Figure 2.

3.2.1.7**annular sectorial array**

annular array with the rings divided into sectors allowing steering in two directions and focusing in depth direction

Note 1 to entry: See Figure 3 and Figure 9.

3.2.1.8**1-D-curved array**

array arranged on a complete or partial cylinder, where the major transmitting axis is radial

Note 1 to entry: See Figure 4 and Figure 7.

3.2.1.9**convex array**

1-D curved array typically used for the testing of tubes from the inside

3.2.1.10**concave array**

1-D curved array typically used for the testing of tubes from the outside

3.2.1.11**dual-array probe**

probe with separate arrays for transmitting and receiving

Note 1 to entry: See Figure 5.

3.2.1.12**2-D-array****matrix array**

array of elements arranged in a rectangular pattern allowing steering in both directions (x and y) and focusing in depth direction

Note 1 to entry: See Figure 6 and Figure 8.

3.2.1.13**pitch**

distance between the same edges or between centres of two adjacent elements

Note 1 to entry: For linear arrays see Figure 10.

3.2.1.14**space between elements**
gap between elements

distance between two adjacent elements

Note 1 to entry: For linear arrays see Figure 10.

3.2.1.15**active aperture**

group of active elements when transmitting and/or receiving

3.2.1.16**elementary aperture**

active aperture made of only one element

3.2.1.17**virtual probe**

group of active elements operated together with one delay law

3.2.1.18**primary axis of an array****active direction**

main axis for beam-steering parallel to the width of the elements

Note 1 to entry: See Figure 8.

3.2.1.19**secondary axis of an array****passive direction**

axis perpendicular to the primary axis

Note 1 to entry: See Figure 8.

Note 2 to entry: Typically the term passive direction is only used for 1-D arrays.

3.2.1.20**reference point on the wedge**

coordinates of the point on the wedge which is used to position a defined point of the array

Note 1 to entry: Typically the distances from the reference point to the wedge contact surface and to the front of the wedge are used.

3.2.1.21**sensitivity curve of an array**

representation of the sensitivity of each element successively connected to the same channel, when using a flat reflector much larger than the aperture of the array

3.2.1.22**natural refracted beam angle**

angle between the refracted beam axis and the normal to the interface without electronic beam-steering

Note 1 to entry: See Figure 11.

3.2.1.23**deflection plane**

plane in which electronic scanning is performed

Note 1 to entry: See Figure 12.