

Non-destructive testing - Characterization and verification of ultrasonic phased array equipment - Part 3: Combined systems (ISO 18563-3:2015)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 18563-3:2015 sisaldab Euroopa standardi EN ISO 18563-3:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 18563-3:2015 consists of the English text of the European standard EN ISO 18563-3:2015.
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English Version

**Non-destructive testing - Characterization and verification
of ultrasonic phased array equipment - Part 3: Combined
systems (ISO 18563-3:2015)**

Essais non destructifs - Caractérisation et vérification
de l'appareillage ultrasonore multi-éléments - Partie 3:
Système complet (ISO 18563-3:2015)

Zerstörungsfreie Prüfung - Charakterisierung und
Verifizierung der Ultraschall-Prüfausrüstung mit
phasengesteuerten Arrays - Teil 3: Vollständige
Prüfsysteme (ISO 18563-3:2015)

This European Standard was approved by CEN on 21 November 2015.

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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

European foreword

This document (EN ISO 18563-3:2015) 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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.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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Endorsement notice

The text of ISO 18563-3:2015 has been approved by CEN as EN ISO 18563-3:2015 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).

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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](#)

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

ISO 18563 consists of the following parts, under the general title *Non-destructive testing — Characterization and verification of ultrasonic phased array systems*:

- *Part 1: Instruments*
- *Part 3: Combined systems*

Non-destructive testing — Characterization and verification of ultrasonic phased array equipment —

Part 3: Combined systems

1 Scope

This part of ISO 18563 addresses ultrasonic test systems implementing linear phased array probes, in contact (with or without wedge) or in immersion, with centre frequencies in the range of 0,5 MHz–10 MHz.

It provides methods and acceptance criteria for verifying the performance of combined equipment (i.e. instrument, probe and cables connected). The methods described are suitable for users working under on-site or shop floor conditions. Its purpose is for the verification of the correct operation of the system prior to testing, and also the characterization of sound beams or verification of the absence of degradation of the system.

The methods are not intended to prove the suitability of the system for particular applications, but are intended to prove the capability of the combined equipment to generate ultrasonic beams according to the settings used.

The calibration of the system for a specific application is outside of the scope of part of ISO 18563 and it is intended that it be covered by the test procedure.

This part of ISO 18563 does not address the following:

- encircling arrays;
- series of apertures having a different number of elements;
- different settings for transmitting and receiving (e.g. active aperture, number of active elements, delays);
- techniques using post-processing of the signals of individual elements in a more complex manner than a simple delay law (e.g. full matrix capture).

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 5577, *Non-destructive testing — Ultrasonic inspection — Vocabulary*

ISO 18563-1, *Non-destructive testing — Characterization and verification of ultrasonic phased array equipment — Part 1: Instruments*

EN 1330-4, *Non-destructive testing — Terminology — Part 4: Terms used in ultrasonic testing*

EN 16018, *Non-destructive testing — Terminology — Terms used in ultrasonic testing with phased arrays*

EN 16392-2, *Non-destructive testing — Characterization and verification of ultrasonic phased array test equipment — Part 2: Probes*