

Aerospace series - Qualification and approval of
personnel for non-destructive testing

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 4179:2021 sisaldab Euroopa standardi EN 4179:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 4179:2021 consists of the English text of the European standard EN 4179:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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English Version

Aerospace series - Qualification and approval of personnel for non-destructive testing

Série aérospatiale - Qualification et agrément du
personnel pour les essais non destructifs

Luft- und Raumfahrt - Qualifizierung und Zulassung
des Personals für zerstörungsfreie Prüfungen

This European Standard was approved by CEN on 11 July 2021.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 4179:2021) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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.

This document supersedes EN 4179:2017.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

Introduction

In the event of a conflict between the text of this document and the references cited herein, the requirements of this document take precedence. Nothing in this document supersedes applicable laws and regulations unless a specific exemption has been obtained.

1 Scope

1.1 Purpose

This document establishes the minimum requirements for the qualification and certification of personnel performing non-destructive testing (NDT), non-destructive inspection (NDI), or non-destructive evaluation (NDE) in the aerospace manufacturing, service, maintenance and overhaul industries. For the purposes of this document, the term NDT will be used and will be considered equivalent to NDI and NDE.

In Europe, the term “approval” is used to denote a written statement by an employer that an individual meets specific requirements and has operating approval. The term “certification” as defined in 3.2 is used throughout this document as a substitute for the term “approval”. Except when otherwise specified in the written practice, certification in accordance with this document includes operating approval.

1.2 Applicability

1.2.1 General

This document applies to personnel using NDT methods to test and/or accept materials, products, components, assemblies or sub-assemblies. This document also applies to personnel: directly responsible for the technical adequacy of the NDT methods used, who approve NDT procedures and/or work instructions, who audit NDT facilities, or who provide technical NDT support or training.

This document does not apply to individuals who only have administrative or supervisory authority over NDT personnel or to research personnel developing NDT technology for subsequent implementation and approval by a certified Level 3.

Personnel performing specialized inspections using certain direct readout instruments as determined by a Level 3 person certified in the test method, do not require qualification or certification to this document.

1.2.2 Implementation

This document addresses the use of a National Aerospace NDT Board (NANDTB). NANDTBs are only used as specified according to Annex C and it is not mandatory to have such a board for compliance with this document. Personnel certified to previous revisions of NAS 410 or EN 4179 need not recertify to the requirements of this document until their current certification expires.

1.3 Test Methods

1.3.1 Common test methods

This document contains detailed requirements for the following common NDT methods:

Eddy Current Testing	(ET)
Magnetic Particle Testing	(MT)
Penetrant Testing	(PT)
Radiographic Testing	(RT)
Thermographic Testing	(TT)
Ultrasonic Testing	(UT)

1.3.2 Other test methods

When invoked by engineering, quality, cognizant engineering organization or prime contractor requirements, this document applies to other current and emerging NDT methods used to determine the acceptability or suitability for intended service of a material, part, component, assembly or sub-assembly. Such test methods can include, but are not limited to, acoustic emission testing (AT), neutron radiography, leak testing, holography, and shearography. The requirements for personnel training, experience, and examination for these other test methods are established in accordance with 6.4 and are documented by the employer.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 18490, *Non-destructive testing — Evaluation of vision acuity of NDT personnel*¹

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:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

basic examination

examination utilized to verify a Level 3 candidate's knowledge of NDT methods used by the employer at a Level 2 proficiency

3.2

certification

written statement by an employer that an individual has met the applicable requirements of this document

3.3

closed book examination

examination administered without access to any reference materials

3.4

cognizant engineering organization

engineering or NDT organization of the prime contractor, OEM (Original Equipment Manufacturer), or end user authorized to make NDT-related decisions and give NDT-related approvals

3.5

committee meetings

panel meetings

meetings, conferences, symposia, seminars, trade association meetings, panels, organized or sponsored by a regional, national or international NDT organization or technical society

¹ Published by: ISO International Organization for Standardization <http://www.iso.ch/>.