STN

Nedeštruktívne skúšanie Kvalifikácia a certifikácia pracovníkov nedeštruktívneho skúšania (ISO 9712: 2021)

STN EN ISO 9712

01 5000

Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2021)

Táto norma obsahuje anglickú verziu európskej normy. This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/22

Obsahuje: EN ISO 9712:2022, ISO 9712:2021

Oznámením tejto normy sa ruší STN EN ISO 9712 (01 5000) z decembra 2012

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN ISO 9712

March 2022

ICS 03.100.30; 19.100

Supersedes EN ISO 9712:2012

English Version

Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712:2021)

Essais non destructifs - Qualification et certification du personnel END (ISO 9712:2021)

Zerstörungsfreie Prüfung - Qualifizierung und Zertifizierung von Personal der zerstörungsfreien Prüfung (ISO 9712:2021)

This European Standard was approved by CEN on 16 December 2021.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

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

EN ISO 9712:2022 (E)

Contents	Page
European foreword	3
Annex ZA (informative) Relationship between this European Standard and the Essential	
Requirements of EU Directive 2014/68/EU aimed to be covered	4

European foreword

This document (EN ISO 9712:2022) 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 September 2022, and conflicting national standards shall be withdrawn at the latest by September 2022.

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.

This document supersedes EN ISO 9712:2012.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For the relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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

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.

Endorsement notice

The text of ISO 9712:2021 has been approved by CEN as EN ISO 9712:2022 without any modification.

EN ISO 9712:2022 (E)

Annex ZA

(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2014/68/EU aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/071 "Mandate to CEN for standardization in the field of Pressure equipment" to provide one voluntary means of conforming to essential requirements of Directive 2014/68/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 May 2014 on the harmonization of the laws of the Member States relating to the making available on the market pressure equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2014/68/EU

Essential Safety Requirements (ERs) of Directive 2014/68/EU	Clauses/sub- clauses of this EN	Remarks/Notes
3.1.3		Non-destructive testing of permanent joints. For pressure equipment in the categories III and IV the certification body is a recognised third party organisation.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

INTERNATIONAL STANDARD

ISO 9712

Fifth edition 2021-12

Non-destructive testing — Qualification and certification of NDT personnel

Essais non destructifs — Qualification et certification du personnel END





COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

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 Email: copyright@iso.org Website: www.iso.org

Published in Switzerland

Co	ntent	cs ·	Page		
For	eword		v		
Intr	oductio	on	vii		
1	Scon	oe	1		
2	-	native references			
3		ns and definitions			
4		reviated terms			
5	-	onsibilities			
	5.1 5.2	General Certification body			
	5.2	Authorized qualification body			
	5.4	Examination centre			
	5.5	Employer	8		
	5.6	Candidate			
	5.7	Certificate holders			
	5.8 5.9	Examiners			
_					
6	Leve 6.1	els of certification Level 1			
	6.2	Level 2			
	6.3	Level 3			
7	Fligi	ibility			
,	7.1	General			
	7.2	Training			
	7.3	Industrial NDT experience	13		
		7.3.1 General			
		7.3.2 Level 3			
	7.4	7.3.3 Possible reductions			
	7.1	7.4.1 General			
		7.4.2 Near vision acuity			
		7.4.3 Colour vision			
		7.4.4 Personnel administering vision tests	15		
8	Exar	ninations			
	8.1	Overview			
		8.1.1 General 8.1.2 Examination elements			
		8.1.3 Examination time			
		8.1.4 Examination aids			
	8.2	Examination content and grading for Level 1 and Level 2	16		
		8.2.1 General examination element			
		8.2.2 Specific examination element			
		8.2.3 Practical examination element			
		8.2.5 Grading of the Level 1 and Level 2 examination			
	8.3	Examination content and grading for Level 3			
		8.3.1 General	18		
		8.3.2 Basic examination element			
		8.3.3 Main method examination element			
	8.4	8.3.4 Grading of Level 3 examinations			
	8.5	Re-examination			

	8.6	Supplementary examinations	21
9	Certif	ication	21
	9.1	Administration	21
	9.2	Certificates	21
	9.3	Conditions of certification	
		9.3.1 General	
		9.3.2 Granting	
		9.3.3 Scope extension	
		9.3.4 Suspension of certification	
		9.3.5 Withdrawal of certification	
		9.3.6 Certification after withdrawal	
		9.3.7 Waiting period prior to certification after withdrawal	
	9.4	Certificates issued by other certification bodies	23
10	Renev	val	23
11	Recer	tification	24
	11.1	General	24
	11.2	Levels 1 and 2	25
	11.3	Level 3	25
12	Files		26
13	Trans	ition period	27
Annex	A (nor	mative) Sectors	28
Annex	B (noi	mative) Minimum number and type of specimens for the Level 1 and Level 2	
		cal examination element	30
Annex		mative) Structured credit system for renewal Level 1, 2 and 3 and for Level 3	
	recer	tification	31
Annex	D (nor	mative) Grading practical examination elements	35
Annex	E (info	ormative) Engineering of NDT	37
Annex	F (info	ormative) Training requirements for techniques	38
Annex	G (info	ormative) Psychometric principles	41
Biblio	graphy	7	42

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 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.

This document was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 7, *Personnel qualification*, 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).

This fifth edition cancels and replaces the fourth edition (ISO 9712:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

- clarified responsibilities for the certification body, the authorized qualification body, the examination centre and the employer;
- added and revised definitions;
- defined responsibilities for examiners and referees;
- revised requirements for the duration of training and industrial experience;
- modified requirements for visual acuity testing;
- revised requirements for examinations;
- included an option for the use of a psychometric process at the discretion of the certification body;
- revised requirements for the certification documents;
- revised requirements for the conditions of certification;
- added requirements for candidates for the renewal of certificates;
- revised structured credit system for Level 3 recertification;
- included a new <u>Annex F</u> for techniques;

- included a new **Annex G** for psychometric principles;
- other minor technical and editorial changes.

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.

Introduction

Since the effectiveness of any application of non-destructive testing (NDT) depends upon the capabilities of the persons who perform or are responsible for the test, a procedure has been developed to provide a means of evaluating and documenting the competence of personnel whose duties require the appropriate theoretical and practical knowledge of the non-destructive tests they perform, specify, supervise, monitor or evaluate. An added incentive stems from the worldwide comparability of a wide range of industrial applications requiring common non-destructive testing approaches.

When certification of NDT personnel is required in product standards, regulations, codes or specifications, it is important to certify the personnel in accordance with this document. When latitude is provided in the criteria within this document, the certification body has the final decision in determining specific requirements.

When there is no requirement in legislation, in standard or in the order for certification of NDT personnel, it is for employers of such personnel to decide how to assure themselves that they are competent to do the work assignments. Thus, they may employ people who are already certified or they may apply their own expertise so as to assure themselves that their employee has the necessary competence. In this last case, prudent employers would no doubt use this document as a reference document.

Non-destructive testing — Qualification and certification of NDT personnel

1 Scope

This document specifies requirements for the qualification and certification of personnel who perform industrial non-destructive testing (NDT) in the following methods.

- a) acoustic emission testing;
- b) eddy current testing;
- c) leak testing (hydraulic pressure tests excluded);
- d) magnetic testing;
- e) penetrant testing;
- f) radiographic testing;
- g) strain gauge testing;
- h) thermographic testing;
- i) ultrasonic testing;
- j) visual testing (direct unaided visual tests and visual tests carried out during the application of another NDT method are excluded).

The system specified in this document is also applicable to other NDT methods or to NDT techniques within an established NDT method, provided a comprehensive scheme of certification exists and the NDT method or NDT technique is covered by international, regional or national standards or the NDT method or the NDT technique has been demonstrated to be effective to the satisfaction of the certification body.

- NOTE 1 The term "industrial" implies the exclusion of applications in the field of medicine.
- NOTE 2 CEN/TR 14748 provides guidance on the methodology for qualification of non-destructive tests.
- NOTE 3 This document specifies requirements for what are, in effect, third party conformity assessment schemes. These requirements do not directly apply to conformity assessment by second or first parties, but relevant parts of this document can be referred to in such arrangements.
- NOTE 4 The term "direct unaided visual testing" implies where there is an uninterrupted optical path from the observer's eye to the test area and the observer uses no tools or devices (e.g. mirror, endoscope, fibre optic).
- NOTE 5 Calculations of strain based on other NDT methods are excluded.

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/IEC 17024:2012, Conformity assessment — General requirements for bodies operating certification of persons

ISO 18490:2015, Non-destructive testing — Evaluation of vision acuity of NDT personnel

koniec náhľadu – text ďalej pokračuje v platenej verzii STN