
**Kvalificiranje in certificiranje osebja za neporušitvene preiskave -
Splošna načela (prevzet standard EN 473:1993 z metodo platnice)**

Qualification and certification of NDT personnel - General principles

Qualification et certification du personnel en essais non destructifs -
Principes généraux

Qualifizierung und Zertifizierung von Personal der zerstörungsfreien Prüfung
- Allgemeine Grundlagen

[SIST EN 473:1996](https://standards.iteh.ai/catalog/standards/sist/bb4779f2-f43b-40d1-a624-6f8aac2d4010/sist-en-473-1996)

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Deskriptorji: neporušitvene preiskave, osebje, kvalificiranje, certificiranje, definicije, splošni podatki

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UVOD

Standard SIST EN 473, Kvalificiranje in certificiranje osebja za neporušitvene preiskave - Splošna načela, prva izdaja, 1996, ima status slovenskega standarda in je z metodo platnice prevzet evropski standard EN 473, Qualification and certification of NDT personnel - General principles, 1993-01, v angleškem jeziku.

NACIONALNI PREDGOVOR

Standard EN 473:1993 je pripravil tehnični odbor Evropske organizacije za standardizacijo CEN/TC 138 Neporušitvene preiskave.

Odločitev za prevzem tega standarda po metodi platnice je dne 1996-04-16 sprejel tehnični odbor USM/TC PKG Preskušanje kovinskih gradiv.

Ta slovenski standard je dne 1996-05-31 odobril direktor USM.

ZVEZA S STANDARDOM

S prevzemom tega evropskega standarda velja poleg standardov, navedenih v izvorniku, še naslednja zveza:

SIST EN 45013 Splošni kriteriji za certifikacijske organe za področje certificiranja osebja

OSNOVA ZA IZDAJO STANDARDARDA

- Prevzem standarda EN 473:1993.

OPOMBI

- Povedano v besedilu standarda uporablja izraz "evropski standard", to pomeni v SIST EN 473:1996 "slovenski standard".
- Uvod in nacionalni predgovor nista sestavni del standarda.

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EUROPEAN STANDARD

EN 473:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Qualification and certification of NDT personnel - General principles

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Qualifizierung und Zertifizierung von Personal
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This European Standard was approved by CEN on 1993-01-04. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard was produced by Technical Committee CEN/TC 138 "Non-destructive testing", the secretariat of which is held by Association for Standardization (AFNOR).

To achieve its purpose, the Technical Committee took ISO/DIS 9712 dealing with the same subject as a reference document, and amended it on some points.

The draft European Standard has been submitted to the public enquiry and to the Formal Vote, and adopted by CEN as European Standard.

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 July 1993, and conflicting national standards shall be withdrawn at the latest by July 1993.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This European Standard establishes a system for the qualification and certification of personnel who perform industrial non destructive testing.

The need for certified personnel shall be defined in the product standards, regulations, codes or specifications. When required the certification shall be in accordance with this European Standard.

An independant certifying body, organized in accordance with relevant European Standards, shall be responsible for the certification.

The certification covers proficiency in one or more of the following methods :

- a) eddy current testing ;
- b) penetrant testing ;
- c) magnetic testing ;
- d) radiography ;
- e) ultrasonic testing ;
- f) leak testing (hydraulic tests excluded).

The system described in this standard may also apply to visual inspection (VT), neutron radiography (NT), acoustic emission (AT), infrared thermography (IT), and other NDT methods where national certification programmes exist.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 45013 - 1989 General criteria for certification bodies operating certification of personnel.

3 Definitions

For the purposes of this European Standard, the following definitions apply :

3.1 qualification

Evidence of training, professional knowledge, skill and experience as well as physical fitness to enable NDT personnel to properly perform NDT tasks.

3.2 certification [SIST EN 473:1996](https://standards.iteh.ai/catalog/standards/sist/bb4779f2-f43b-40d1-a624-30a4e05a7-1993)

<https://standards.iteh.ai/catalog/standards/sist/bb4779f2-f43b-40d1-a624-30a4e05a7-1993>
Procedure used to demonstrate the qualification of NDT personnel in a method, level and industrial sector, and leading to the issue of a certificate.

3.3 independent certifying body

The body that administers procedures for certification of NDT personnel according to the requirements of this standard and which fulfills the requirements of EN 45013.

3.4 authorized body

A body, independent of any single predominant interest, authorized by the independent certifying body to prepare and administer examinations to qualify NDT personnel.

An authorized body may refer to an industrial sector.

3.5 examination centre

Centre approved by the independent certifying body, either directly or through the authorized body, where qualification examinations will be carried out.

An examination centre may be situated at an employer's premises.

3.6 examiner

A person certificated to level 3 in the method he is to examine and authorized by the independent certifying body either directly or through the authorized body to conduct, supervise and grade NDT qualification examinations.

3.7 certificate

Document issued under the rules of the certification system defined in this standard indicating that adequate confidence is provided that the named person is competent to perform specific services.

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3.8 NDT candidate

Individual seeking qualification and certification and who works under supervision of certified personnel gaining appropriate experience for qualification. Candidates may be self employed so long as they provide documentary evidence that experience has been gained under the supervision of certificated personnel.

3.9 employer

The organization for which the candidate works on a regular basis ; an employer may also be a candidate at the same time.

3.10 operating authorization

A written statement issued by the employer based on the individual's competence as specified by the certificate. In addition to the certification, amongst others the job-specific knowledge, skill and physical ability can be assessed for the specific task.

3.11 NDT method

Discipline applying a physical principle in nondestructive testing (for example : ultrasonic method).

3.12 NDT technique

A specific way of utilizing an NDT method (for example : ultrasonic immersion technique).

3.13 NDT procedure

A written description of all essential parameters and precautions to be observed when applying an NDT technique to a specific test, following an established standard, code or specification.

3.14 NDT instruction

A written description of the precise steps to be followed in testing to an established standard, code, specification or NDT procedure.

3.15 industrial sector

<https://standards.iteh.ai/catalog/standards/sist/bb4779f2-f43b-40d1-a624-6882e40459a2/en-473-1993>
A particular section of industry or technology where specialized NDT practices are used requiring specific product related knowledge, skill, equipment or training. An industrial sector may be interpreted to mean a product (welds, castings, ...) or an industry (aerospace, petrochemical, ...).

3.16 qualification examination

An examination administered by the independent certifying body or the authorized body which demonstrates the general, specific and practical knowledge and the skill of the candidate.

3.17 general examination

An examination which is concerned with the principles of a NDT method.

3.18 specific examination

An examination which is concerned with testing techniques applied in a particular industrial sector, and knowledge of the product being tested, and of standards, codes, specifications and acceptance criteria.

3.19 practical examination

An examination of skills in which the candidate of levels 1 or 2 demonstrates familiarity with and the ability to operate the necessary test equipment, to test the prescribed specimens, to record and to analyse the resulting information to the degree required, and in which the candidate of level 3 demonstrates the ability to draft one or more NDT procedures.

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3.20 basic examination

An examination, at level 3, which demonstrates the knowledge of the materials science and technology in relation to the field of activity of level 3, of this qualification and certification system and of the basic principles of NDT methods as required for level 2.

3.21 main NDT method examination

An examination, at level 3, which demonstrates the general and specific knowledge of the level 3 candidate in the main NDT method, and the skill of writing an NDT procedure.

3.22 industrial NDT experience

Experience in the applicable NDT method and field of application which leads to the required skill and knowledge.

4 Symbols and abbreviations

For the purposes of this standard, the following symbols apply to identify the NDT methods.

Table 1 : Symbols

	SYMBOL
Eddy current testing	ET
Penetrant testing	PT
Magnetic testing	MT
Radiography	RT
Ultrasonic testing	UT
Leak testing	LT

5 General principles

5.1 Requirements concerning the independent certifying body, the authorized bodies and the examination centre.

5.1.1 The independent certifying body shall fulfill the requirements of EN 45013.

5.1.2 The authorized body if established shall comply with the following conditions :

- a) to work under the control of the independent certifying body ;
- b) to have the resources needed to carry out examinations through examination centres, including the calibration and control of equipment ;
- c) to prepare and supervise examinations under the responsibility of an examiner ;
- d) to be independent of any single predominant interest ;
- e) to apply a written procedure approved by the independent certifying body ;
- f) to approve examination centres ;
- g) to make sure that examination specimens are not in use for training.