# SLOVENSKI STANDARD
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**Neporušitveno preskušanje – Metodologija za kvalifikacijo neporušitvenih preskusov**

Non-destructive testing - Methodology for qualification of non-destructive tests

Zerstörungsfreie Prüfung - Vorgehensweise zur Qualifizierung von zerstörungsfreien Prüfungen



Essai non destructif - Méthodologie pour la qualification des méthodes d'essais non destructifs



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TECHNICAL REPORT

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# Non-destructive testing - Methodology for qualification of non-destructive tests

Essai non destructif - Méthodologie pour la qualification des méthodes d'essais non destructifs

Zerstörungsfreie Prüfung - Vorgehensweise zur Qualifizierung von zerstörungsfreien Prüfungen

This Technical Report was approved by CEN on 27 September 2004. It has been drawn up by the Technical Committee CEN/TC 138.

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## Foreword

This document (CEN/TR 14748:2004) has been prepared by Technical Committee CEN/TC 138 “Non-destructive testing”, the secretariat of which is held by AFNOR.

# Introduction

Non–destructive tests (NDT) are typically one of a great number of activities within the quality assurance at manufacture or during maintenance of industrial products, where the objective is to ensure a defined or agreed product quality.

This is especially the case if the non-destructive tests are carried out according to standards or other accepted technical codes.

Qualification of a non-destructive test may be necessary in the case of non standardised NDT or if the NDT does not fully comply with the appropriate standard to ensure a defined or agreed product-quality. The objective of qualification is to provide confidence in the non-destructive test itself and also in its continued performance. Non-destructive tests, however, will not in themselves provide statements on product safety or on the lifetime of a product.

Qualification should also be considered when there are reasons to provide additional assurance that the NDT can meet the inspection requirements.

# 1 Scope

This document sets out basic principles and provides recommendations and general guidelines for carrying out qualification of non-destructive tests.

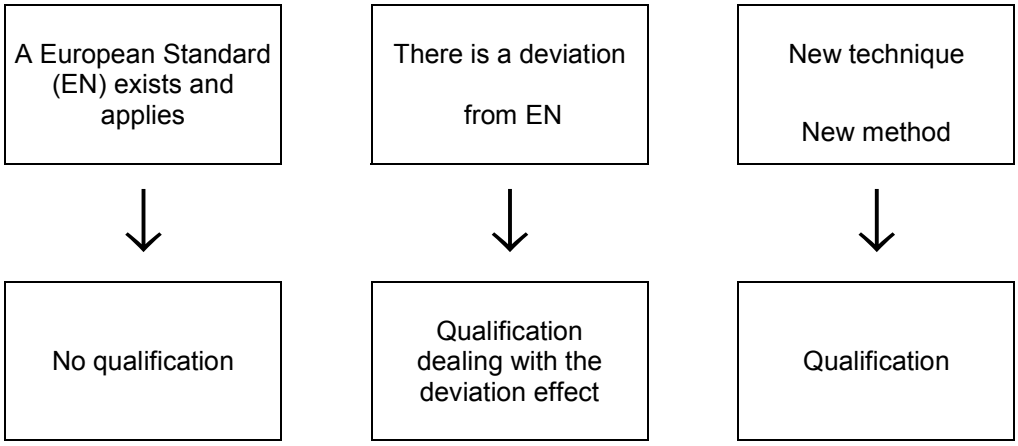
The document deals with methods for qualifying non-destructive tests to determine whether they are capable of attaining their objectives. It applies to all aspects of tests which influence their effectiveness.

The parties involved decide in their own responsibility on the need for a qualification of a non-destructive test. This includes identification of the qualification-team and its technical competence.

There may be a need for qualification when there is a deviation from a European NDT Standard, or when new techniques or methods are to be implemented for which there are no European Standards. Where there is a European NDT Standard which applies, there is no need for qualification.

Table 1 summarises when qualification is required.

**Table 1 — Need for qualification**




This document is relevant to any non-destructive testing method and is therefore written in general terms, setting out the principles that apply. It does not, in itself, constitute a specification for NDT qualification for a specific component but is intended to be used as a basis for development of such specifications.

## 2 Normative references



The following referenced documents are indispensable for the application 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.



EN 473, *Non-destructive testing - Qualification and certification of NDT personnel - General principles'*



## 3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

**3.1**
**blind trial**
trial in which those applying the non-destructive test to test pieces have no knowledge of the position of the discontinuities in those test pieces (Type and orientation according to the NDT procedure)

**3.2**
**essential parameters**
parameters of the non-destructive tests, of the component and of the discontinuities that the test is intended to detect or to size, which significantly affect the outcome of the test; the boundaries between which these parameters can vary without significantly affecting the test are specified in the technical justification and/or NDT procedure as appropriate

**3.3**
**NDT equipment**
means by which NDT is implemented. This includes both hardware and software

**3.4**
**NDT method**
discipline applying a physical principle in non-destructive testing (for example: eddy current test method)

**3.5**
**NDT procedure**
written description of how to apply a NDT technique to a specific test, including all essential parameters and precautions to be observed. An NDT procedure can involve the application of more than one NDT method or technique

**3.6**
**NDT qualification**
confirmation by examination and/or provision of objective evidence that the particular requirements for a specific use of NDT are fulfilled. NDT qualification is one part of the whole qualification process

**3.7**
**NDT system**
all parts of the non-destructive test including equipment, NDT procedure and personnel, which can influence the outcome and quality of the NDT

**3.8**
**NDT technique**
specific way in which the NDT method is utilised

NOTE For ultrasonic testing it may include, for example, pulse echo, tandem, TOFD, focused probes and so on, or the combination of these which has been adopted.

**3.9**
**open trial**
trial in which those applying the non-destructive test to test pieces have specific knowledge of the discontinuities in those test pieces

**3.10**
**parties involved**
parties involved are usually producer, supplier and/or purchaser who take responsibility for an industrial product during manufacturing and/or service. In some cases, it may also include manufacturer, user, design department, regulatory body, notified body, and/or third party body



**3.11**
**physical reasoning**
compilation of the detailed reasons for the selection of a particular non-destructive test



**3.12**
**practical assessment**
assessment of a non-destructive test by applying it to test pieces or to components containing natural defects

**3.13**
**qualification dossier**
assembly of all the information relevant to the qualification process

**3.14**
**qualification process**
process of demonstrating whether a specific NDT application is capable of fulfilling specific requirements

**3.15**
**qualification programme**
orderly list of actions to be carried out for the NDT qualification

**3.16**
**qualification statement**
document issued under the rules of a qualification system indicating that adequate confidence is provided that NDT procedures, equipment and personnel or any combination of these are capable, for a specific test, of achieving the stated objectives of the test

**3.17**
**qualification team**
person(s) that plan, conduct and accept NDT qualification, who are technically competent and acceptable to the parties involved. The need for the qualification team to be separate from the parties involved is a matter to be agreed by those involved