

ICS 19.100

English version

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

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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.

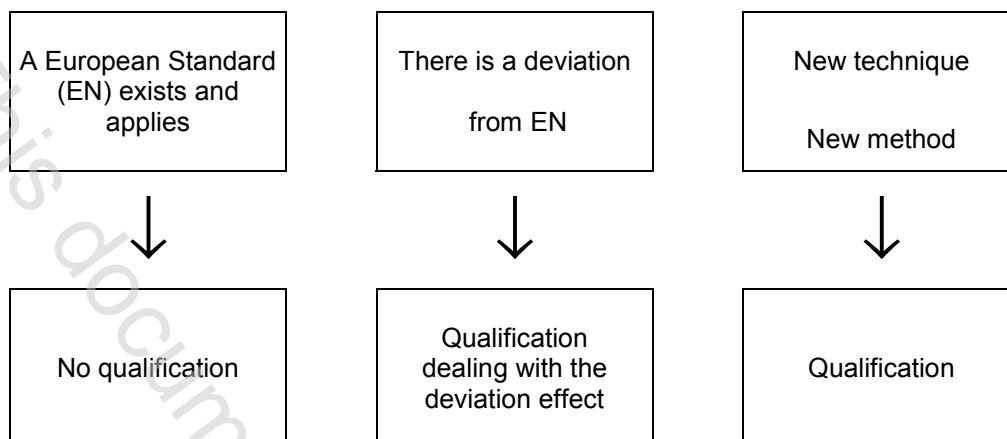
The document deals with methods for qualifying non-destructive tests to determine whether they are capable of attaining their objectives. It applies to all aspects of tests which influence their effectiveness.

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