



NSAI
Standards

Irish Standard
I.S. EN ISO 3452-1:2013

Non-destructive testing - Penetrant testing -
Part 1: General principles (ISO 3452-1:2013,
Corrected version 2014-05-01)

I.S. EN ISO 3452-1:2013

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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Correction Notice

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- Formal Vote
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- UAP
- TC Approval
- 2nd TC Approval
- Publication
- Parallel Publication

It has been brought to our attention that this document, issued on 2013-06-05, requires modification.

ISO has published corrected English and French versions of EN ISO 3452-1:2013 (Corrected version 2014-05-01).

Titles and Forewords have been updated accordingly.

Please find enclosed the updated English and French versions.

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EUROPEAN STANDARD

EN ISO 3452-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2013

ICS 19.100

Supersedes EN 571-1:1997

English Version

Non-destructive testing - Penetrant testing - Part 1: General principles (ISO 3452-1:2013, Corrected version 2014-05-01)

Essais non destructifs - Examen par ressuage - Partie 1:
Principes généraux (ISO 3452-1:2013, Version corrigée
2014-05-01)

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Allgemeine Grundlagen (ISO 3452-1:2013, korrigierte
Fassung 2014-05-01)

This European Standard was approved by CEN on 14 March 2013.

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.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 3452-1:2013 (E)

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Foreword

This document (EN ISO 3452-1:2013) has been prepared by Technical Committee CEN/TC 138 "Non-destructive testing", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 135 "Non-destructive testing".

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 December 2013, and conflicting national standards shall be withdrawn at the latest by December 2013.

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 571-1:1997.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 3452-1:2013, Corrected version 2014-05-01 has been approved by CEN as EN ISO 3452-1:2013 without any modification.

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INTERNATIONAL STANDARD

ISO 3452-1

Second edition
2013-06-01

Corrected version
2014-05-01

Non-destructive testing — Penetrant testing —

Part 1: General principles

Essais non destructifs — Examen par ressuage —

Partie 1: Principes généraux



Reference number
ISO 3452-1:2013(E)

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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. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC ISO 3452-1 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in collaboration with ISO Technical Committee ISO/TC 135, *Non-destructive testing*, Subcommittee SC 2, *Surface methods*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 3452-1:2008) which has been technically revised. Changes from the first edition include a table referring to the testing products.

This corrected version of ISO 3452:2013 incorporates the following corrections: a footnote has been added to Table 1; the flowchart of [Annex A](#) has been modified.

ISO 3452 consists of the following parts, under the general title *Non-destructive testing — Penetrant testing*:

- *Part 1: General principles*
- *Part 2: Testing of penetrant materials*
- *Part 3: Reference test blocks*
- *Part 4: Equipment*
- *Part 5: Penetrant testing at temperatures higher than 50 °C*
- *Part 6: Penetrant testing at temperatures lower than 10 °C*

Non-destructive testing — Penetrant testing —

Part 1: General principles

1 Scope

This part of ISO 3452 specifies a method of penetrant testing used to detect discontinuities, e.g. cracks, laps, folds, porosity and lack of fusion, which are open to the surface of the material to be tested. It is mainly applied to metallic materials, but can also be performed on other materials, provided that they are inert to the test media and not excessively porous (castings, forgings, welds, ceramics, etc.)

It also includes requirements for process and control testing, but is not intended to be used for acceptance criteria and gives neither information relating to the suitability of individual test systems for specific applications nor requirements for test equipment.

NOTE 1 Methods for determining and monitoring the essential properties of penetrant testing products to be used are specified in ISO 3452-2 and ISO 3452-3.

NOTE 2 The term *discontinuity* is used in this part of ISO 3452 in the sense that no evaluation concerning acceptability or non-acceptability is included.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3059, *Non-destructive testing — Penetrant testing and magnetic particle testing - Viewing conditions*

ISO 3452-2, *Non-destructive testing — Penetrant testing — Part 2: Testing of penetrant materials*

ISO 3452-3, *Non-destructive testing — Penetrant testing — Part 3: Reference test blocks*

ISO 3452-4, *Non-destructive testing — Penetrant testing — Part 4: Equipment*

ISO 3452-5, *Non-destructive testing — Penetrant testing — Part 5: Penetrant testing at temperatures higher than 50 degrees C*

ISO 3452-6, *Non-destructive testing — Penetrant testing — Part 6: Penetrant testing at temperatures lower than 10 degrees C*

ISO 12706, *Non-destructive testing — Penetrant testing — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12706 apply.

4 Safety precautions

As penetrant inspection techniques often require the use of harmful, flammable and/or volatile materials, certain precautions shall be taken.

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