AS ISO 3452.4:2020

Australian STANDARD®

Non-destructive testing — Penetrant testing

Part 4: Equipment

STANDARDS Australia

AS ISO 3452.4:2020

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The following are represented on Committee MT-007:

Australasian Thermographers Association
Australian Institute for Non-Destructive Testing
Australian Nuclear Science & Technology Organisation
Austroads
Engineers Australia
Institute of Electrical Inspectors
National Aerospace Non-Destructive Testing Board of Australia
Weld Australia

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Originated as part of AS B260.3A—1968.
Revised and redesignated as AS 2062—1977.
Revised, amalgamated with AS 2565—1982 and redesignated as AS 2062—1997.
Revised and redesignated as AS ISO 3452.4:2020.

Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee MT-007, Non-Destructive Testing of Metals and Materials, to supersede AS 2062—1997, *Non-destructive testing — Penetrant testing of products and components.*

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify the characteristics of equipment used in penetrant testing. The characteristics of equipment required for carrying out penetrant testing depend on the number of tests to be made and on the size of the components to be tested. The following two types of equipment are included in this Standard:

(a) Equipment suitable for carrying out *in situ* penetrant testing techniques.

(b) Fixed installations.

This Standard is identical with, and has been reproduced from, ISO 3452-4:1998, *Non-destructive testing — Penetrant testing — Part 4: Equipment*.

As this document has been reproduced from an International Standard, the following applies:

(i) In the source text "this European Standard" should read "this Australian Standard".

(ii) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

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ISO 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 3452 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 3452-4 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 135, *Non-destructive testing*, Subcommittee SC 2, *Surface methods*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this standard, read "...this European Standard..." to mean "...this International Standard...".

This first edition together with ISO 3452-1, ISO 3452-2 and ISO 3452-3 cancels and replaces ISO 3452:1984, which has been technically revised.

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

— *Part 1: General principles*

— *Part 2: Penetrant testing materials*

— *Part 3: Reference test blocks*

— *Part 4: Equipment*

Annex ZA provides a list of corresponding International and European Standards for which equivalents are not given in the text.

European Foreword

The text of EN ISO 3452-4:1998 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 June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

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

Introduction

At the present time, one part of this Standard is published independently on the European and ISO levels, the others are under the Vienna Agreement and consequently have the ISO number at the European level. However, the Vienna agreement was applied during the work, so some European Standards have referenced them under their previous European number. The following table gives the correspondance between these different numbers.

Title	previous number*	official number
Non-destructive testing — Penetrant testing		
Part 1: General principles		EN 571-1
Part 2: Testing of penetrant materials	prEN 571-2	prEN ISO 3452-2
Part 3: Reference test blocks	prEN 571-3	EN ISO 3452-3
Part 4: Equipment	prEN 956	EN ISO 3452-4
* number under which this document is referenced in some European Standards		

Australian Standard®

Non-destructive testing — Penetrant testing

Part 4: Equipment

1 Scope

This European standard specifies the characteristics of equipment used in penetrant testing. The characteristics of equipment required for carrying out penetrant testing depend on the number of tests to be made and on the size of the components to be tested. Two types of equipment are included in this standard:

a) equipment suitable for carrying out in situ penetrant testing techniques;

b) fixed installations.

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 571-1, *Non destructive testing — Penetrant testing — Part 1: General principles for the examination*

prEN ISO 3452-2, *Non-destructive testing — Penetrant testing — Part 2: Testing of penetrant materials (ISO/DIS 3452-2:1996)*

EN ISO 3452-3, *Non-destructive testing — Penetrant testing — Part 3: Reference blocks (ISO 3452-3:1998)*

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

3 General

Equipment used in penetrant testing shall be selected and applied considering the following general aspects:

— equipment should be selected being suitable for the penetrant testing technique;

— all relevant health, safety and environmental requirements shall be complied with;.

— the application shall be in accordance with the requirements of EN 571-1.

4 Equipment for in situ inspection

The equipment used for in situ inspection shall fullfill the requirements of EN 571-1, prEN ISO 3452-2 and EN ISO 3452-3. Depending on the process being employed the following testing equipment may be used:

— portable spray equipment

— cloth (lint free)

— brushes

— personal protective equipment