Non-destructive testing — Magnetic particle testing

Part 2: Detection media

AS ISO 9934.2:2020

This Australian Standard® was prepared by MT-007, Non-Destructive Testing Of Metals And Materials. It was approved on behalf of the Council of Standards Australia on 24 February 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 and Technology Organisation
Austroads
Engineers Australia
Institute of Electrical Inspectors
National Aerospace Non-Destructive Testing Board of Australia
Weld Australia

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Australian STANDARD®

Non-destructive testing — Magnetic particle testing

Part 2: Detection media

Originated as part of AS B260.4A—1968.
Revised and redesignated as AS 1171—1976.
Previous edition 1998.
Revised and redesignated as AS ISO 9934.2:2020.

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 1171—1998, *Non-destructive testing — Magnetic particle testing of ferromagnetic products, components and structures.*

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—

(a) the significant properties of magnetic particle testing products (including magnetic ink, powder, carrier liquid, contrast aid paints); and

(b) the methods for checking their properties.

This Standard is identical with, and has been reproduced from, ISO 9934-2:2015, *Non-destructive testing — Magnetic particle testing — Part 2: Detection media*.

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

(i) In the source text "this part of ISO 9934" 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.

Contents

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 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.

ISO 9934-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in collaboration with 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 9934-2:2002), which has been technically revised.

ISO 9934 consists of the following parts, under the general title *Non-destructive testing — Magnetic particle testing*:

— *Part 1: General principle*

— *Part 2: Detection media*

— *Part 3: Equipment*

Australian Standard®

Non-destructive testing — Magnetic particle testing

Part 2: Detection media

1 Scope

This part of ISO 9934 specifies the significant properties of magnetic particle testing products (including magnetic ink, powder, carrier liquid, contrast aid paints) and the methods for checking their properties.

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 2160, *Petroleum products — Corrosiveness to copper — Copper strip test*

ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*

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

ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity*

ISO 4316, *Surface active agents — Determination of pH of aqueous solutions — Potentiometric method*

ISO 9934-1, *Non-destructive testing — Magnetic particle testing — Part 1: General principle*

ISO 9934-3, *Non-destructive testing — Magnetic particle testing — Part 3: Equipment*

ISO 12707, *Non-destructive testing — Terminology — Terms used in magnetic particle testing*

EN 1330-1, *Non-destructive testing — Terminology — Part 1: List of general terms*

EN 1330-2, *Non-destructive testing — Terminology — Part 2: Terms common to the non-destructive testing methods*

EN 1330-7, *Non-destructive testing — Terminology — Part 7: Terms used in magnetic particle testing*

EN 10083-2, *Quenched and tempered steels — Part 2: Technical delivery conditions for non-alloy steels*

EN 10204, *Metallic products — Types of inspection documents*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1330-1, EN 1330-2, EN 1330-7, ISO 12707, and the following apply.

3.1
batch
quantity of material produced during one manufacturing operation having uniform properties throughout and with a unique identifying number or mark

4 Safety precautions

The materials used in magnetic particle inspection and those used in their testing include chemicals that can be harmful, flammable, and/or volatile. All necessary precautions should be observed. All