

This is a preview of "BS EN ISO 9934-1:2016...". Click here to purchase the full version from the ANSI store.

BS EN ISO 9934-1:2016



BSI Standards Publication

Non-destructive testing — Magnetic particle testing

Part 1: General principles
(ISO 9934-1:2016)

bsi.

This is a preview of "BS EN ISO 9934-1:201...". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of EN ISO 9934-1:2016. It supersedes BS EN ISO 9934-1:2015 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee WEE/46, Non-destructive testing.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.
Published by BSI Standards Limited 2016

ISBN 978 0 580 93987 7

ICS 19.100

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2016.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

This is a preview of "BS EN ISO 9934-1:201...". Click here to purchase the full version from the ANSI store.

EUROPÄISCHE NORM

December 2016

ICS 19.100

Supersedes EN ISO 9934-1:2015

English Version

Non-destructive testing - Magnetic particle testing - Part 1: General principles (ISO 9934-1:2016)

Essais non destructifs - Magnétoscopie - Partie 1:
Principes généraux du contrôle (ISO 9934-1:2016)

Zerstörungsfreie Prüfung - Magnetpulverprüfung - Teil
1: Allgemeine Grundlagen (ISO 9934-1:2016)

This European Standard was approved by CEN on 21 October 2016.

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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

This is a preview of "BS EN ISO 9934-1:201...". [Click here to purchase the full version from the ANSI store.](#)

Contents	Page
European foreword.....	3

This is a preview of "BS EN ISO 9934-1:201...". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN ISO 9934-1:2016) has been prepared by Technical Committee ISO/TC 135 "Non-destructive testing" in collaboration with Technical Committee CEN/TC 138 "Non-destructive testing" the secretariat of which is held by AFNOR.

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 2017, and conflicting national standards shall be withdrawn at the latest by June 2017.

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 ISO 9934-1:2015.

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 9934-1:2016 has been approved by CEN as EN ISO 9934-1:2016 without any modification.

This is a preview of "BS EN ISO 9934-1:201...". Click here to purchase the full version from the ANSI store.

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Qualification and certification of personnel	2
5 Safety and environment	2
6 Testing procedure	2
7 Surface preparation	2
8 Magnetization	2
8.1 General requirements.....	2
8.2 Verification of magnetization.....	3
8.3 Magnetizing techniques.....	4
8.3.1 General.....	4
8.3.2 Current flow techniques.....	4
8.3.3 Magnetic flow techniques.....	6
9 Detection media	10
9.1 Properties and selection of media.....	10
9.2 Testing of detection media.....	10
9.3 Application of detection media.....	10
10 Viewing conditions	10
11 Overall performance test	10
12 Interpretation and recording of indications	11
13 Demagnetization	11
14 Cleaning	11
15 Test report	12
Annex A (informative) Example for determination of currents required to achieve specified tangential field strengths for various magnetization techniques	13
Bibliography	17

This is a preview of "BS EN ISO 9934-1:201...". Click here to purchase the full version from the ANSI store.

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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 135, *Non-destructive testing*, Subcommittee SC 2, *Surface methods*.

This third edition cancels and replaces the second edition (ISO 9934-1:2015), of which it constitutes a minor revision, with the modification for clarity of Clause 13 and other editorial improvements.

A list of all parts in the ISO 9934 series, published under the general title *Non-destructive testing — Magnetic particle testing*, can be found on the ISO website.

This is a preview of "BS EN ISO 9934-1:201...". Click here to purchase the full version from the ANSI store.

Non-destructive testing — Magnetic particle testing —

Part 1: General principles

1 Scope

This document specifies general principles for the magnetic particle testing of ferromagnetic materials. Magnetic particle testing is primarily applicable to the detection of surface-breaking discontinuities, particularly cracks. It can also detect discontinuities just below the surface but its sensitivity diminishes rapidly with depth.

This document specifies the surface preparation of the part to be tested, magnetization techniques, requirements and application of the detection media, and the recording and interpretation of results. Acceptance criteria are not defined. Additional requirements for the magnetic particle testing of particular items are defined in product standards (see the relevant International Standards or European standards).

This document does not apply to the residual magnetization method.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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

ISO 9934-2, *Non-destructive testing — Magnetic particle testing — Part 2: Detection media*

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

ISO 12707, *Non-destructive testing — Magnetic particle testing — Vocabulary*

EN 1330-1, *Non-destructive testing — Terminology — Part 1: General terms*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>