

BS EN ISO 12707:2016



BSI Standards Publication

**Non-destructive testing —
Magnetic particle testing —
Vocabulary (ISO 12707:2016)**

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN ISO 12707:2016. It supersedes BS EN 1330-7:2005 which is withdrawn.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 72586 9

ICS 01.040.19; 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 30 April 2016.

Amendments issued since publication

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

EUROPEAN STANDARD

EN ISO 12707

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2016

ICS 01.040.19; 19.100

Supersedes EN 1330-7:2005

English Version

Non-destructive testing - Magnetic particle testing - Vocabulary (ISO 12707:2016)

Essais non destructifs - Magnétoscopie - Vocabulaire
(ISO 12707:2016)

Zerstörungsfreie Prüfung - Magnetpulverprüfung -
Vokabular (ISO 12707:2016)

This European Standard was approved by CEN on 8 February 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

European foreword

This document (EN ISO 12707:2016) 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 October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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 1330-7:2005.

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 12707:2016 has been approved by CEN as EN ISO 12707:2016 without any modification.

Contents

	Page
Foreword	iv
1 Scope	1
2 Terms and definitions	1
Bibliography	5

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 12707 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, 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).

This first edition of ISO 12707 is based on, and constitutes a technical revision of, European Standard EN 1330-7:2005.

Non-destructive testing — Magnetic particle testing — Vocabulary

1 Scope

This International Standard defines general terms specifically associated with magnetic particle testing.

2 Terms and definitions

2.1

adjacent conductor technique

magnetization using a bar or cable close to, but isolated from the test surface

2.2

ampere turns

product of the number of turns of a coil and the current in amperes flowing through the coil

2.3

arcing strike

poor electrical contact causing burn damage

2.4

carrier liquid

liquid in which the *magnetic particles* (2.30) are suspended for the wet technique

2.5

central conductor

threaded conductor positioned in the centre of an aperture of the component

2.6

circular magnetization

continuous lines of force within a test piece produced by current flow or a conductor surrounded by the test piece

2.7

coil technique

magnetization using a flexible cable or a rigid coil to test all or a part of a component

2.8

coloured detection medium

detection medium for testing with visible light

2.9

concentrate

detection medium supplied in a form requiring dilution before use

2.10

conditioning agent

additive in water-based media used to improve their properties which may include wetting, antifoaming and corrosion inhibitors

2.11

constant current control

device to maintain the pre-set current

2.12

contact pad

replaceable pad usually copper braid, placed at contact points to improve electrical connection

2.13

continuous magnetization technique

technique where detection medium is applied during magnetization

2.14

contrast aid paint

thin coating or film applied to a surface to improve the visibility of indications using *coloured detection medium* (2.8)

2.15

current flow technique

magnetization by passing a current through a component

2.16

current generator

source of current for magnetization

2.17

detection medium

magnetic particles (2.30) suspended in a carrier liquid or in dry powder form, ready for use

2.18

dry powder technique

application of *magnetic particles* (2.30), air suspended in use

2.19

fixed installation

stationary equipment providing a magnetic field for testing of components

2.20

flexible coil technique

magnetization using a conductor wrapped closely around a component

2.21

fluorescent detection medium

detection medium that emits visible light when excited by a different radiation, usually UV-A radiation

2.22

flux indicator

magnetic flux shunting detector containing artificial discontinuities

2.23

fluorescent stability

capability of a detection medium to maintain fluorescent properties

2.24

induced current flow technique

current flow in a ring type component produced by making it the secondary of a transformer

2.25

lift test

functional check of portable electromagnets assessed by attractive force

2.26

magnetic bench

stationary equipment for general applications employing *magnetic flow techniques* (2.28) and/or *current flow techniques* (2.15)

2.27

magnetic extender

ferromagnetic piece placed at the end of a component to improve the magnetization

2.28

magnetic flow technique

magnetization by inducing a magnetic flux through the component

2.29

magnetic ink

magnetic particles ([2.30](#)) suspended in a carrier liquid

2.30

magnetic particle

finely distributed ferromagnetic material attracted by the magnetic flux leakage

2.31

magnetic particle content

measurement of *magnetic particles* ([2.30](#)) in magnetic ink

2.32

magnetic particle testing

non-destructive test method using magnetic fields and detection media to reveal surface and near surface discontinuities in ferromagnetic materials

2.33

magnetic writing

form of false indication due to local, random magnetization, sometimes caused when a magnetized component comes in contact with the test item

2.34

magnetizing coil

arrangement of a rigid or flexible conductor to encircle the entire component or part of it

2.35

mechanical stability

capability of detection medium to maintain performance under working conditions

2.36

multidirectional magnetization

single magnetizing operation that produces a directionally varying field in the test part

2.37

portable electromagnet (yoke)

hand-held, electrical equipment used for *magnetic flow techniques* ([2.28](#))

2.38

prods

hand-held electrodes

2.39

residual field

magnetic field remaining after magnetization

2.40

rigid coil technique

magnetization using a coil with fixed dimensions

2.41

tangential field

component of a magnetizing field parallel to the surface

2.42

tangential field strength

value of the *tangential field* ([2.41](#))

2.43

threaded conductor technique

bar or cable through a hole or an aperture used for magnetization

Bibliography

- [1] ISO 12706¹⁾, *Non-destructive testing — Terminology — Terms used in penetrant testing*
- [2] ISO 12718²⁾, *Non-destructive testing — Eddy current testing — Vocabulary*
- [3] EN 1330-7:2005, *Non-destructive testing — Terminology — Part 7: Terms used in magnetic particle testing*

1) Formerly published as European Standard EN 1330-6.

2) Formerly published as European Standard EN 1330-5.

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

Useful Contacts:

Customer Services

Tel: +44 845 086 9001

Email (orders): orders@bsigroup.com

Email (enquiries): cservices@bsigroup.com

Subscriptions

Tel: +44 845 086 9001

Email: subscriptions@bsigroup.com

Knowledge Centre

Tel: +44 20 8996 7004

Email: knowledgecentre@bsigroup.com

Copyright & Licensing

Tel: +44 20 8996 7070

Email: copyright@bsigroup.com

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

