

Non-destructive testing of welds — Magnetic particle testing (ISO 17638:2003)

ICS 25.160.40

National foreword

This British Standard is the UK implementation of EN ISO 17638:2009. It is identical to ISO 17638:2003. It supersedes BS EN 1290:1998 which is withdrawn.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.

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 January 2010
© BSI 2010

ISBN 978 0 580 66701 5

Amendments/corrigenda issued since publication

Date	Comments

English Version

Non-destructive testing of welds - Magnetic particle testing (ISO 17638:2003)

Contrôle non destructif des assemblages soudés - Contrôle par magnétoscopie (ISO 17638:2003)

Zerstörungsfreie Prüfung von Schweißverbindungen - Magnetpulverprüfung (ISO 17638:2003)

This European Standard was approved by CEN on 24 October 2009.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of ISO 17638:2003 has been prepared by Technical Committee ISO/TC 44 "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17638:2009 by Technical Committee CEN/TC 121 "Welding" the secretariat of which is held by DIN.

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 May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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 1290:1998.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 17638:2003 has been approved by CEN as a EN ISO 17638:2009 without any modification.

Contents

Page

Foreword.....	iv
1 Scope.....	1
2 Normative references	1
3 Terms and definitions	1
4 Safety precautions	1
5 General	2
5.1 Information required prior to testing	2
5.2 Additional pre-test information	2
5.3 Personnel qualification.....	2
5.4 Surface conditions and preparation	2
5.5 Magnetizing	3
5.6 Application techniques.....	4
5.7 Detection media	9
5.8 Viewing conditions	10
5.9 Application of detection media.....	10
5.10 Overall performance test.....	10
5.11 False indications	10
5.12 Recording of indications	11
5.13 Demagnetization	11
5.14 Test report.....	11
Annex A (informative) Variables affecting the sensitivity of magnetic particle testing	13
Bibliography	15

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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17638 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 5, *Testing and inspection of welds*.

Non-destructive testing of welds — Magnetic particle testing

1 Scope

This International Standard specifies techniques for detection of surface imperfections in welds in ferromagnetic materials, including the heat affected zones, by means of magnetic particle testing. The techniques are suitable for most welding processes and joint configurations. Variations in the basic techniques that will provide a higher or lower test sensitivity, are described in Annex A.

This International Standard does not specify acceptance levels of the indications. Further information on acceptance levels for indications may be found in EN 1291 or in product or application standards.

2 Normative references

The following referenced documents are indispensable for the application 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 17635, *Non-destructive testing of welds — General rules for fusion welds in metallic materials*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17635 apply.

4 Safety precautions

International, national and local safety and environmental protection regulations shall be observed at all times.

Special consideration shall be given to toxic, inflammable and/or volatile materials, electrical safety and unfiltered UV radiation.