

**Metallivalu. Magnetosakeste kontroll**

**Founding - Magnetic particle testing**

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English Version

## Founding - Magnetic particle testing

Fonderie - Contrôle par magnétoscopie

Gießereiwesen - Magnetpulverprüfung

This European Standard was approved by CEN on 1 September 2012.

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# Contents

Page

|   |    |
|---|----|
| Foreword.....   | 3  |
| Introduction.....   | 4  |
| 1 Scope .....   | 5  |
| 2 Normative references .....  | 5  |
| 3 Conditions for magnetic particle testing.....   | 5  |
| 4 Method of testing .....   | 6  |
| 4.1 Operating mode .....  | 6  |
| 4.2 Qualification of the operators.....   | 6  |
| 4.3 Surface preparation .....   | 6  |
| 4.4 Conditions of testing .....   | 6  |
| 5 Acceptance criteria.....  | 6  |
| 5.1 Indications of discontinuities .....  | 6  |
| 5.2 Definition of magnetic particle indications .....   | 7  |
| 5.3 Severity levels .....   | 8  |
| 6 Classification of the indications and interpretation of results .....   | 9  |
| 6.1 Classification of the indications using Tables 1 and 2.....   | 9  |
| 6.2 Classification of the indications using the reference figures .....   | 9  |
| 6.3 Interpretation of results .....   | 9  |
| 7 Cleaning after examination and demagnetization.....   | 10 |
| 8 Test report .....   | 10 |
| Annex A (normative) Conversion of severity levels of linear (LM) and aligned (AM) indications .....                         | 12 |
| Annex B (Informative) Nature of discontinuities and types of corresponding magnetic particle indications .....              | 13 |
| Annex C (informative) Reference figures — Non-linear indications designated SM .....  | 14 |
| Annex D (informative) Reference figures — Linear and aligned indications designated LM and AM ....                          | 17 |
| Annex E (informative) Model of a magnetic particle test report .....  | 21 |
| Annex F (informative) Significant technical changes between this European Standard and the previous edition of EN 1369..... | 23 |
| Bibliography.....   | 24 |

## Foreword

This document (EN 1369:2012) has been prepared by Technical Committee CEN/TC 190 "Foundry technology", 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of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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 1369:1996.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 11 "Surface inspection" to revise EN 1369:1996.

Annex F provides details of significant technical changes between this European Standard and the previous edition.

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.

## Introduction

This European Standard complements the general principles of magnetic particle testing given in EN ISO 9934-1 for the additional requirements for castings.

Magnetic particle testing as well as any other non-destructive examination method is a part of a general or specific assessment of the quality of a casting to be agreed between the manufacturer and the purchaser at the time of acceptance of the order.

This European Standard also gives acceptance criteria through severity levels defined by the nature, the area and the dimensions of the discontinuities present.

## 1 Scope

This European Standard specifies a magnetic particle testing method for ferro-magnetic iron and steel castings.

NOTE An iron or steel casting is considered to be ferro-magnetic if the magnetic induction is greater than 1 T (Tesla) for a magnetic field strength of 2,4 kA/m.

## 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.

EN ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel (ISO 9712:2012)*

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

EN ISO 9934-1, *Non-destructive testing — Magnetic particle testing — Part 1: General principles (ISO 9934-1)*

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

## 3 Conditions for magnetic particle testing

The manufacturing stage(s) when magnetic particle testing is to be performed shall be clearly defined by agreement between the manufacturer and the purchaser by the time of ordering.

The methods detailed in this standard shall only apply to the agreed surfaces of the castings and the percentage or number of castings to be checked.

The areas of the castings and the percentage of the castings to be inspected shall be indicated in the enquiry.

The sensitivity can differ depending on the method of magnetic particle testing selected.

The order shall specify at least:

- a) the method to be used (type of detection media);
- b) whether the casting is to be demagnetized after testing has been performed (viz. maximum residual field strength values).

And for each area of the casting to be inspected (see Clauses 5 and 6), the following shall be specified:

- c) the type of discontinuity;
- d) the severity level.

NOTE The type of discontinuity and the severity level can vary depending on the area of the casting inspected.

For the classification, depending on the shape of the indication of the discontinuities (see Annex B), reference shall be made to the severity levels defined in Tables 1 and 2 (see 6.1).

The conversion from the severity levels specified in EN 1369:1996 [1] Table 3 to severity levels in Table 2 of the present edition is given in Table A.1.