
**Non-destructive testing — Magnetic
particle testing —**

**Part 1:
General principles**

Essais non destructifs — Magnétoscopie —

Partie 1: Principes généraux du contrôle



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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 9934-1 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 9934-1:2001), 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 principles*
- *Part 2: Detection media*
- *Part 3: Equipment*

Non-destructive testing — Magnetic particle testing —

Part 1: General principles

1 Scope

This part of ISO 9934 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 part of ISO 9934 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 ISO or EN standards).

This part of ISO 9934 does not apply to the residual magnetization method.

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

ISO 9712, *Non-destructive testing — Qualification and certification of NDT personnel*

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 — Terminology — Terms used in magnetic particle testing*

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*

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

3 Terms and definitions

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

4 Qualification and certification of personnel

It is assumed that magnetic particle testing is performed by qualified and capable personnel. In order to provide this qualification, it is recommended to certify the personnel in accordance with ISO 9712 or equivalent.