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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 15822.1-2005

**Non-destructive testing -- Magnetic particle testing -- Part 1:
General principles
(English Translation)**

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Foreword

GB/T 15822 "Non-destructive testing - Magnetic particle testing" consists of 3 parts.

- Part 1.General principles;
- Part 2.Detection media;
- Part 3.Equipment.

This Part is Part 1 of GB/T 15822.It identically uses ISO 9934-1.2001 "Non-destructive testing - Magnetic particle testing - Part 1.General principles" (English version).

This Part is an identical translation version to ISO 9934-1.2001.

For easy use, this Part made the following editorial modifications.

- a) modified "this European Standard" and "this Standard" to "this Part" or

"this Part of GB/T 15822";

b) replaced "," that was used as decimal point with decimal point ".";

c) deleted the foreword of ISO 9934-1:2001;

d) used the Introduction specified in GB/T 1.1-2000.

This Part replaces GB/T 15822-1995 "Methods for magnetic particle testing"

because the international standard of development is technically obsolete.

Compared with GB/T 15822-1995, the main changes in this Part are as follows.

- modified the scope (Clause 1 of Edition 1995; Clause 1 of this Edition);
- added the safety and environment requirements (Clause 5 of this Edition);
- added the requirements for testing procedure (Clause 6 of this Edition);
- modified the content of surface preparation (9.2.1 of Edition 1995; Clause

7 of this Edition);

- modified the content of magnetization (Clause 5, 9.1 and 9.2.2 of Edition 1995; Clause 8 of this Edition);
- modified the content of detection media (Clause 6, 9.2.3, Annex A and Annex B of Edition 1995; Clause 9 of this Edition);
- modified the content of viewing conditions (9.2.4 of Edition 1995; Clause

10 of this Edition);

- modified the content of overall performance test (Clause 7 of Edition 1995; Clause 11 of this Edition);
- modified the content of interpretation and recording of indications (9.3, Clause 10 and Clause 11 of Edition 1995; Clause 12 of this Edition);
- modified the content of demagnetization (9.2.5 of Edition 1995; Clause 13 of this Edition);
- added the content of cleaning after detection (Clause 14 of this Edition);
- added the content of test report (Clause 15);
- added the informative annex " Example for determination of currents required to achieve specified tangential field strengths for various

magnetization techniques".

Annex A of this Part is informative.

This Part shall be under the jurisdiction of National Technical Committee on Non-destructive testing of Standardization Administration of China (SAC/TC 56).

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Version of standard substituted by this Part is.

- GB/T 15822-1995.

Non-destructive testing - Magnetic particle testing -

Part 1.General principles

1 Scope

This Part of GB/T 15822 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.

The Part 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.

This Part does not apply to the residual magnetization method.

2 Normative references

The following standards contain the provisions which, through reference in this Part of GB/T 15822, constitute the provisions of this Part. For dated references,

subsequent amendments (excluding corrections) or revisions do not apply to this Part. However, the parties who enter into agreement based on this Part are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Part.

GB/T 5097, Non-destructive testing - Penetrant testing and magnetic particle testing - Viewing conditions (GB/T 5097-2004, ISO 3059.2001, IDT)

GB/T 12604.5, Non-destructive testing - Terminology - Terms used in magnetic particle testing 1

GB/T 15822.2, Non-destructive testing - Magnetic particle testing - Part 2.

Detection media (GB/ T 15822.2-2005, ISO 9934-2.2002, IDT)

1 The standard shall be published on the basis of revision GB/T 12604.5-1990. The terms and definitions

in GB/T 12604.5 referenced in this Part of GB/T 15822 are identical to the terms and definitions in ISO/DIS

12707.2000 (prEN ISO 12707).

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