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

GB/T 26954-2024

Replacing GB/T 26954-2011

**Non-destructive testing of welds - Eddy current testing of welds
by complex-plane analysis
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 26954-2011 "Non-destructive testing of welds - Eddy current

testing of welds based on complex plane analysis" and Compared with GB/T 26954-2011, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope of the application has been changed (see Chapter 1, Chapter 1 of the 2011 edition);
- b) Added the normative reference document ISO 12718 (see Chapter 3);
- c) The normative reference document GB/T 12604.6 (see Chapter 3 of the 2011 edition) has been deleted;
- d) The provisions on terms and definitions have been changed (see Chapter 3, Chapter 3 of the 2011 edition);
- e) The provisions on personnel qualifications have been changed (see Chapter 4, Chapter 4 of the 2011 edition);
- f) The provisions on the formulation of process specifications have been changed, and the normative reference document GB/T 5616 (see Chapter 5, 2011 edition) has been deleted. chapter);
- g) The provisions of basic information have been changed (see 6.1, 6.1 of the 2011 edition);
- h) Changed the provisions for probes for coating thickness measurement and material evaluation based on calibration test blocks (see 6.4.2.1, 2011 edition) 6.4.2.1);
- i) The provisions for weld inspection probes have been changed and notes have been added (see 6.4.2.2, 6.4.2.2 of the 2011 edition);
- j) The provisions on calibration certificates for testing equipment have been changed (see 6.4.4.1, 6.4.4.1 of the 2011 edition);
- k) Added the normative reference document ISO 15548-3 and changed the provisions on functional inspection of testing equipment (see 6.4.4.2, 6.4.4.2 of the 2011 edition);
- l) The provisions for the coating thickness measurement and material evaluation procedures based on calibration test blocks have been changed (see 6.5.2, 6.5.1 of the 2011 edition);
- m) The provisions for sensitivity calibration have been changed (see 6.5.3.2, 6.4.1.3 of the 2011 edition);
- n) The calibration regulations have been changed (see 6.5.3.2, 6.5.2.2 of the 2011 edition);
- o) The scanning regulations have been changed (see 6.5.3.3 and Appendix A, 6.5.2.3 of the 2011 edition);

- p) The minimum size of defects has been deleted (see 6.6.1 of the 2011 edition);
- q) Deleted the provisions on the evaluation of unacceptable signals, deleted the normative references GB/T 15822.1, GB/T 26951, GB/T 18851.1, GB/T 26952, GB/T 26953 (see 6.6.2 of the 2011 edition);
- r) Added the normative reference document ISO 15549 and changed the provisions of the test report (see Chapter 7, Chapter 7 of the 2011 edition);
- s) Added the description of orthogonal non-directional eddy current testing (see Appendix NA).

This document is equivalent to ISO 17643:2015 "Non-destructive testing of welds - Eddy current testing of welds based on complex plane analysis".

The following minimal editorial changes were made to this document.

--- Added Appendix NA (informative).

1 Scope

This document specifies the method mainly used to detect surface openings and near-surface planar discontinuities of ferromagnetic materials (welds, heat-affected zones, parent materials).

Eddy current testing technology.

This document may also be used for testing of non-ferromagnetic materials if required by the design specifications.

This document is applicable to the inspection of coated or uncoated welds, either onshore or offshore.

Eddy current testing can be performed on all accessible weld surfaces of all types.

Unless otherwise specified in the terms of this document, the general principles specified in ISO 15549 apply.

NOTE: Eddy current testing is usually performed in the post-weld condition; however, very rough surfaces may affect the accuracy of the test.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 12718 Non-destructive testing - Eddy current testing - Vocabulary (Note. GB/T 12604.6-2021 Non-destructive testing terminology Eddy current testing (ISO 12718:2019, IDT) ISO 15548-3 Non-destructive testing Eddy current testing equipment Part 3: System performance and verification (Non-destructive testing - Note. GB/T 14480.3-2020 Non-destructive testing instruments Eddy current testing equipment Part 3: System performance and verification (ISO 15548-3:2008, IDT) ISO 15549 Non-destructive testing - Eddy current testing - General principles (Note. GB/T 30565-2014 Non-destructive testing - General principles for eddy current testing (ISO 15549:2008, MOD)

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 12718 apply.

4 Personnel Qualifications

Non-destructive testing should be carried out by qualified and competent personnel. It is recommended to follow ISO 9712 or equivalent standards issued by relevant industry authorities.

to qualify or certify personnel to the appropriate level.

5 Development of process specifications

The development of process specifications should comply with ISO 15549 or should be in accordance with the provisions of this document.