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

GB/T 15636-2026

Replacing GB/T 15636-2008

Thickness gauges utilizing ionizing radiation

电离辐射厚度计

(English Translation)

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Foreword

Drafting.

This document replaces GB/T 15636-2008 "Ionizing Radiation Thickness Gauges". Compared with GB/T 15636-2008, the main differences are in structural adjustments and compilation.

Aside from the logical changes, the main technical changes are as follows.

---The terms "fixed mounting bracket", "recyclable mounting bracket", "crack resolution", "mass per unit area", "accuracy", and "basic error" have been removed.

"Poor", "Repeatability", "Reproducibility", "Rated Range", "Effective Range", "Calibration Transfer", "Geometric Resolution Length", "Instability", "Comprehensive Radiation", "Radiation measurement instability", "electrical instability", "short-term drift", "long-term drift", "drift caused by radioactive source decay", "noise limit".

"Resolution", "Sampling Time", "Sampling Rate", "Total Integration Time (Digital Signal)", "Average Settlement Time (Digital Signal)", "Recovery Time" (Digital signal) "Calibration curve" "Deviance linearity" "Influence quantity" "Reference conditions" "Rated operating range" "Sensitivity to external noise" "Degree" and "Effect of Static Charge" (see 3.1.12, 3.1.13, 3.1.22, 3.1.23, 3.2.1~3.2.7, 3.2.9~3.2.11 in the 2008 edition).

3.2.13~3.2.16, 3.2.18, 3.3.4~3.3.8, 3.4.1, 3.4.3, 3.4.6~3.4.8, 3.4.17, 3.4.19);

---The terms "radiated noise," "average settling time (analog signal)," and "normalization" and their definitions have been changed (see 3.21, 3.24, 3.36).

(Versions 3.2.12, 3.3.2, and 3.4.18 from the 2008 edition)

---The terms "measurement noise" and "recovery time (analog signal)" have been changed (see 3.22, 3.25, 3.2.17, 3.3.3 in the 2008 edition);

---The term "linear" has been added (see 3.26);

---The requirement for "Other normal working conditions" has been removed (see 5.1.2 in the 2008 version);

---The requirement for "scale" has been removed (see 5.1.4 in the 2008 version);

---The requirements for "impurity buildup error" have been changed (see 5.1.6, 5.4 in the

2008 version);

---The requirements and test methods for "radioactive sources" have been revised (see 5.3, 6.3, and 5.5 and 6.5 in the 2008 edition);

---The requirements and test methods for "Basic Performance" have been changed (see 5.4.1, 6.4.1, and 5.3.1 and 6.3.1 in the 2008 version);

---The requirement and test method for "instability caused by source attenuation" have been removed (see 5.3.5 and 6.3.5 in the 2008 edition);

---The "Ambient conditions and power supply conditions for normal operation" have been modified (see 5.6.2, 5.6.3, and 5.1.1 in the 2008 version);

---The requirements and test methods for "Mechanical Environmental Conditions" have been revised (see 5.6.5, 6.6.7, and 5.6.7 and 6.6.7 in the 2008 edition);

---The requirements and test methods for "Electrical Safety" have been revised (see 5.7.1, 6.7.1, and 5.7.1 and 6.7.1 in the 2008 edition);

---The requirements and test methods for "Electromagnetic Environment Conditions" have been revised (see 5.7.2, 6.7.2, and 5.6.6 and 6.6.6 in the 2008 edition);

---The requirements and test methods for "Radiation Safety" have been revised (see 5.7.3, 6.7.3, and 5.7.2 and 6.7.2 in the 2008 edition);

---The requirements for "Alarms and Safety Devices" have been changed (see 5.7.3, 5.7.1.3 in the 2008 version);

---The content of the "Radiation Protection Classification" table has been revised (see Table 7, Table 9 in the 2008 edition);

---The requirements and test methods for "explosion-proof" have been revised (see 5.7.4, 6.7.4, and 5.7.3 and 6.7.3 in the 2008 edition);

---The "diagnostic features" have been removed (see 5.8 in the 2008 version);

---The word "reliability" has been removed (see 5.9 in the 2008 edition);

---The content of "Reference Conditions and Standard Test Conditions" has been changed (see 6.1.2, 2008 version of 6.1.2);

---The phrase "Experimental equipment" has been removed (see section 6.1.3 of the 2008 edition);

---The test method for "Sample Quantity and Nominal Value" has been changed (see 6.1.3.2, 6.1.4.2 in the 2008 version);

---The test method for "measuring head status" has been changed (see 6.1.4, 6.1.5 in the 2008 version);

---The section on "reading methods" has been removed (see section 6.1.8 in the 2008 edition);

---The testing methods for "mean response time and mean settling time" have been modified (see 6.4.2.2, 6.3.2.2 in the 2008 version);

---The test method for "impurity buildup error" has been removed (see 6.4.4 in the 2008 edition);

---The test method for "external magnetic field" has been modified (see 6.6.6, 6.6.6.2 in the 2008 version);

---The requirements for "marking and nameplates for explosion-proof components" have been changed (see 8.1.3, 2008 version of 8.1.3).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Nuclear Instruments and Meters (SAC/TC30).

1 Scope

This document specifies the product classification, technical requirements, inspection rules, marking, packaging, transportation, storage, and accompanying procedures for ionizing radiation thickness meters.

The document describes the corresponding experimental methods.

This document applies to non-destructive static measurements of the thickness or mass per unit area of a material using ionizing radiation.

Thickness gauge (hereinafter referred to as "thickness gauge").

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 3836.1 Explosive Atmospheres - Part 1: General Requirements for Equipment GB/T 3836.2 Explosive atmospheres - Part 2: Equipment protected by flameproof enclosures "d" GB/T 3836.4 Explosive atmospheres - Part 4: Equipment protected by intrinsic safety type "i" GB 4075-2009 General requirements and classification of sealed radioactive sources