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

GB/T 27512-2025

Replacing GB/T 27512-2011

Risk assessment methods for buried pipelines

埋地管道风险评估方法

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting is scheduled. This document replaces GB/T 27512-2011 "Risk Assessment Method for Buried Steel Pipelines". Compared with GB/T 27512-2011, except for the structural... Aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope has been changed (see Chapter 1, Chapter 1 of the.2011 edition);
- b) The terms "gas gathering pipeline", "oil gathering pipeline", "oil transportation pipeline", "basic model for failure probability scoring", and "failure probability score" have been removed. "Modified model", "direct economic loss", "absolute risk level", "relative risk level" and their definitions (see 3.1.2~ in the.2011 edition). 3.1.4, 3.1.8, 3.1.9, 3.1.13, 3.1.16, 3.1.17).
- c) The symbol has been removed (see 3.2 in the.2011 edition);
- d) The general requirements have been changed to general rules (see Chapter 4, Chapter 4 of the.2011 edition).
- e) The risk assessment requirement for pipeline sections has been removed (see 4.1.2 in the.2011 edition).

- f) The basic requirements for assessment units have been changed (see 4.2, 4.2.1 of the 2011 edition).
- g) Increased the time requirements for conducting pipeline risk assessments at different stages (see 4.5);
- h) Requirements for intelligent pipeline risk assessment and dynamic early warning have been added (see 4.6);
- i) A flowchart for risk assessment of pipeline sections has been added (see Chapter 5);

1 Scope

GB/T 27512-2025 is the Chinese national standard covering how the risk of a buried pipeline is assessed - third-party interference, corrosion inside and out, construction and material defects, ground movement and operational error, each scored for likelihood and for the consequence of a release along that segment. At 33,000 words it is the reference for pipeline integrity management in China, and it replaces GB/T 27512-2011 after fourteen years. It was issued on 31 December 2025 and has been in force since 31 December 2025, replacing GB/T 27512-2011. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the general principles, assessment process, data collection, pipeline segmentation, risk assessment, and risk mitigation for risk assessment of buried pipelines. Recommendations on control measures, risk assessment reports, and risk reassessments. This document applies to the design review, completion acceptance, and in-service management of three types of pipelines. buried gathering and transmission pipelines, long-distance transmission pipelines, and public gas pipelines. Risk assessment is conducted in three phases. Risk assessments for buried industrial pipelines and buried utility heating pipelines should follow the same guidelines. This document does not apply to risk assessments of non-buried pipelines within stations and factory areas.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. 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 19285 Inspection of Corrosion Protection Engineering for Buried Steel Pipelines

GB/T 21448 Technical Specification for Cathodic Protection of Buried Steel Pipelines

GB 32167 Integrity Management Standard for Oil and Gas Pipelines

GB/T 34275 Pressure Pipeline Specification for Long-Distance Pipelines

GB/T 34346 Risk-based guidelines for classifying safety hazards in oil and gas pipelines

GB/T 40702 Technical Specification for Geological Hazard Prevention of Oil and Gas Pipelines

GB 50028 Code for Design of Urban Gas Supply

GB 50183 Code for Fire Protection Design of Petroleum and Natural Gas Engineering

GB 50251 Code for Design of Gas Pipeline Engineering

GB 50253 Code for Design of Oil Pipeline Engineering

GB 50349 Gas Field Gathering and Transportation Design Code

GB 50350 Oilfield Oil and Gas Gathering and Transportation Design Code

GB 50369 Code for Construction and Acceptance of Long-Distance Oil and Gas Pipeline Projects

3 Terms and Definitions

The following terms and definitions apply to this document.