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

GB/T 46543-2025

**Integrity management of non-metallic pipelines for oil and gas
transmission**

油气输送用非金属管道完整性管理

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. 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 Petroleum and Natural Gas (SAC/TC355). This document was drafted by: China Petroleum Engineering Materials Research Institute Co., Ltd., and China National Petroleum Corporation Tarim Oilfield Service Co., Ltd. Tianfen Company, Changqing Engineering Design Co., Ltd., CNOOC Energy Development Equipment Technology Co., Ltd., China Special Equipment Inspection and Research Institute, Chang'an University, Southwest Oil & Gas Field Branch of China National Petroleum Corporation Gathering and Transportation Engineering Technology Research Institute, Xinjiang PetroChina Pipeline Engineering Co., Ltd. The company, Jiangsu Safer Pipeline Co., Ltd., Jiangsu Zhengdao Combustible Ice Pipeline Co., Ltd., Ningbo OPEA Marine Engineering Equipment Co., Ltd. Company, Shengli Oilfield Jindao Huarui Engineering Construction Co., Ltd., Shengli Oilfield Xingda Gaoxiang New Materials Co., Ltd., Shengli Oilfield Dongfang Pengda Non-metallic materials products company. The main drafters of this document are. Qi Guoquan, Li Lei, Tan Chuanjiang, Qi Dongtao, Li Houbu, Niu Zhenyu, Yang Chunlin, He Shuquan, Gong Yanshuang, and Chen Qingguo. Yan Huayun, Xu Ting, Ding Han, Ding Nan, Dai Zhixiang, Sun Ming, Yao Dengzun, Zhang Xuemin, Chen Xinyi, Kong Wei, Tang Hongjun, Xian Jun, Kong Lingfeng, Shao Xiaodong Martin, Xiao Dezheng, Zhu Wenfeng, Zhang Li, Han Dong, Zhang Li, Bai Yong, Wang Hongtao, Cui Shaowen, Shao Guangguo. Integrity Management of Non-metallic Pipelines for Oil and Gas Transportation

1 Scope

GB/T 46543-2025 is the Chinese national standard covering keeping a non-metallic pipeline safe over its life - the ageing of the polymer rather than the corrosion of steel, the pressure and temperature history that consumes its design life, the inspection methods that work on a material inline tools were not built for, and the fitness for service assessment. First edition, in force from 1 April 2026. It was issued on 2 December 2025 and has been in force since 1 April 2026, as a first edition. 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 requirements for the integrity management of non-metallic pipelines used for oil and gas transportation, and establishes the requirements for integrity management during the construction phase and the operational phase. Integrity management, outage period integrity management, failure management, as well as record and document management, communication and change management, training and skills related to content. This document applies to non-metallic pipelines used for oil and gas transportation (fiberglass pipelines, flexible composite high-pressure transmission pipes,

thermoplastic plastic lined with fiberglass). Integrity management of fiberglass composite pipes, steel-reinforced polyethylene composite pipes, and polyethylene pipes, etc., is also applicable to injection systems in oil and gas fields. Integrity management of non-metallic pipelines used for producing water transportation.

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; for undated references, the latest version (including all revisions) applies. This document.

GB/T 13663.2 Polyethylene (PE) piping systems for water supply - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Non-metallic pipes are in a safe and reliable service condition.

Note. This mainly includes that the pipeline is structurally and functionally complete; the pipeline is in a risk-controlled state; and the pipeline's safety status meets current operational requirements.

3.2 reinforced material The material that bears the main mechanical load in a non-metallic tube.

Note. Generally includes inorganic, organic, or metal-reinforced materials.

3.3 connector Components used for connecting non-metallic pipes to each other and to other pipes or systems.