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

GB/T 35922-2025

Replacing GB/T 35922-2018

**Technical specification for the impregnation of impervious
graphite**

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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. This document supersedes GB/T 35922-2018 "Technical Specification for Impregnation and Corrosion Resistance Operation of Impermeable Graphite" and is consistent with GB/T 35922-2018. Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The term "heat treatment" and its definition have been added (see 3.4);
- b) Added the clause "Graphite impregnation process evaluation should be conducted within the unit" (see 4.4);
- c) The "Technical Requirements" section has been deleted, the "Inspection and Acceptance" and "Marking, Storage and Management" sections have been modified, and the "Immersion Process Qualification" and "Material" sections have been added. The sections on "Materials," "Equipment," and "Immersion and Heat Treatment Operations" (see Chapters 4, 5, 6, 7, 8, and 9, 2018) are relevant. Chapters 4, 5, and 6 of the edition);
- d) The requirement that "purification and environmental protection facilities should be installed for emissions from impregnation tanks and heat treatment tanks" has been added (see 6.6);
- e) Added requirements for graphite elements to undergo "pneumatic testing", "pressure gauge used in pressure testing", and "judgment of pressure test results". (See 8.2, 8.3, and

8.4);

f) Change the "Referenced Standards" in the tables of "Appendix A", "Appendix B", "Appendix C", and "Appendix D" to "Implementation Standards" and "Responsible Engineer" respectively. The titles "Immersion Responsible Engineer" and "Approver" have been changed to "Technical Supervisor." Tables A.1, B.2, A.1, and A.2 have also been modified. Some content has been revised, with the addition of sections C.1 and C.2 (see Appendix A, Appendix B, Appendix C, and Appendix D; Appendix A and Appendix D of the.2018 edition). B, Appendix C, Appendix D). 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 by the China Petroleum and Chemical Industry Federation. This document is under the jurisdiction of the National Technical Committee on Corrosion Control Standardization (SAC/TC381). This document was drafted by: Nantong Shanjian Anticorrosion Technology Co., Ltd., Nantong Xingqiu Graphite Co., Ltd., and Jiangsu Jiuxin Environmental Protection and Energy Conservation Co., Ltd. Limited Company, Jiangsu Provincial Special Equipment Safety Supervision and Inspection Institute, Nantong Sanxin Carbon Graphite Equipment Co., Ltd., Guizhou Lanxin Graphite Electromechanical Equipment Manufacturing Co., Ltd., Nantong Runzhong Graphite Equipment Co., Ltd., Nantong Jingtong Graphite Equipment Co., Ltd., Shandong Heda Carbon Energy Technology Co., Ltd. Company, Hubei Century Weiye Anticorrosion Technology Co., Ltd., Nantong Yuandong Chemical Equipment Co., Ltd., and China Corrosion International Corrosion Control Engineering Technology Research Institute (Beijing) Co., Ltd., China Corrosion Control Technology Association. The main drafters of this document are. Huang Xiaodong, Zhang Yi, Qiu Xiaofeng, Gu Jianping, Qian Weibing, Yang Ying, Feng Shuai, Yang Jun, Li Zhenjian, Xue Jiawei, and Wang Qinling. Pan Xiaojie, Wang Guiming, Chen Xiaohui, Chen Jun, Zhang Yuxia, Xie Yimei, Wang Xiaoliang, Cao Rongrong, Luo Xiangli, Zhang Fuguang, Yu Peng, Cao Chenfei, Lu Jun Chi Minggao, Wu Rongbin, Xing Jun, Liu Yong. This document was first published in.2018, and this is its first revision. Technical Specifications for Impermeable Graphite Impregnation for Corrosion Resistance

1 Scope

GB/T 35922-2025 is the Chinese national standard covering making graphite gas-tight - the resin impregnation under vacuum and pressure, the cure, and the tests that show the pores are filled, which is what turns a porous block into the heat exchanger material that handles hydrochloric acid. It replaces GB/T 35922-2018, with the cementing standard GB/T 35926-2025. It was issued on 2 December 2025 and has been in force since 1 July 2026, replacing GB/T 35922-2018. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. 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 impregnation process evaluation, materials, equipment, impregnation, heat treatment, and inspection procedures for corrosion-resistant impregnation of impermeable graphite components. Including acceptance, labeling, storage and management, etc. This document applies to the impermeable graphite element impregnation operations of the following graphite equipment.

---Maximum working pressure not exceeding

---Design temperature range. -70°C to 400°C. This document does not apply to the following graphite equipment.

---Graphite containers in nuclear power plants;

--- Casting graphite equipment.

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 13465.1 Test methods for impermeable graphite materials - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 impervious graphite Graphite materials that are impermeable to liquids and gases at the current industrial level (i.e., under relatively low pressure and temperature conditions).

Note. Common types include impregnated graphite, compression molding (including extrusion and die molding) graphite, cast graphite, and composite graphite. [Source: GB/T 21432-2021, 3.5, with modifications]

3.2 Impregnated graphite A material is formed by pressing organic or inorganic liquid materials (impregnating agents) into the voids of graphite materials and then allowing them to solidify.

Note. Common types include phenolic resin impregnated graphite, furan impregnated graphite, polytetrafluoroethylene impregnated graphite, and water glass impregnated graphite.

10 Tensile strength

GB/T 21432 Pressure Vessels Made of Graphite

GB/T 30071 Fine-particle, high-density special graphite products

HG/T 2060 Test methods for weight gain and porosity of impregnated graphite

HG/T 2370 Technical Conditions for Chemical Equipment Made from Impermeable Graphite

YB/T 2818 Graphite Blocks YB/T 4088 Graphite Electrode

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