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

GB/T 20974-2025

Replacing GB/T 20974-2014

Rigid phenolic foam for thermal insulation (PF)

绝热用硬质酚醛泡沫制品 (PF)

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1 Scope

GB/T 20974-2025 is the Chinese national standard covering phenolic insulation board - the best fire performance of any organic foam, which is why it is used on facades, with its thermal conductivity, its compressive strength, its dimensional stability and the friability and acidity that are its weaknesses. It replaces GB/T 20974-2014, with the sandwich panel standard GB/T 23932-2025. It was issued on 31 December 2025 and has been in force since 1 July 2026, replacing GB/T 20974-2014. The document is under the responsibility of the China Building Materials 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 classification and marking, technical requirements, inspection rules, labeling, packaging, transportation and storage of rigid phenolic foam products for thermal insulation, and describes the test methods. This document applies to the production and inspection of rigid phenolic foam products for thermal insulation of buildings, equipment and pipelines (hereinafter referred to as "products").

2 Normative references

The provisions of the following documents constitute the essential clauses of this document through normative references in this text. Among them, for any dated reference, only the version corresponding to that date applies to this document; for any undated reference, the latest version (including all amendments) applies to this document.

GB/T 4132 Thermal insulation - Vocabulary

GB/T 6342 Cellular plastics and rubbers - Determination of linear dimensions

GB/T 6343 Cellular plastics and rubbers - Determination of apparent density

GB/T 8170 Rules of rounding off for numerical values & expression and judgment of limiting values

GB 8624 Classification for burning behavior of building materials and products

GB/T 8810 Determination of water absorption of rigid cellular plastics

GB/T 8811 Test method for dimensional stability of rigid cellular plastics

GB/T 8812.1 Rigid cellular plastics - Determination of flexural properties - Part 1. Basic bending test

GB/T 8813 Rigid cellular plastics - Determination of compression properties

GB/T 10294 Thermal insulation - Determination of steady-state thermal resistance and related properties - Guarded hot plate apparatus

GB/T 10295 Thermal insulation - Determination of steady-state thermal resistance and related properties - Heat flow meter apparatus

GB/T 15048 Cellular plastics, rigid - Determination of compressive creep

GB/T 17146 Test methods for water vapour transmission properties of building materials and products

3 Terms and definitions

The terms and definitions defined in GB/T 4132 apply to this document.

4.1 Classification

4.1.1 According to the use of the products, they are divided into the following three classes.

- a) Class I -- Used for insulation of walls (buildings, tunnels, etc.), roofs, sandwich panels, etc.
- b) Class II -- Used for insulation of equipment, pipes, air conditioning ducts, and ventilation ducts;
- c) Class III -- Used for insulation of floors, accessible roofs, and pipe supports.

4.1.2 According to the shape of the product, it is divided into boards, tubes and special-shaped products.

4.2 Marking Boards shall be marked as follows: Product name (outer coating) - Class - Length x Width x Thickness - Apparent density - This document number. Tubes shall be marked as follows: Product name (outer coating) - Class - Inner diameter x Wall thickness x Length - Apparent density - This document number. The product name is represented by

PF; the class is marked as I, II, and III; the length, width, and thickness, or inner diameter and wall thickness, are in millimeters. EXAMPLE 1.A Class I board product with a length of 1200 mm, a width of 600 mm, a thickness of 50 mm, and an apparent density of 40 kg/m³, coated with an aluminum foil layer, is marked as follows: PF (aluminum foil)-I-1200x600x50-40-GB/T 20974 EXAMPLE 2.A Class II tube product with an inner diameter of 60 mm, a wall thickness of 30 mm, a length of 1000 mm, and an apparent density of 50 kg/m³, without an outer coating, is marked as follows: PF-II-Phi60x30x1000-50-GB/T 20974.

5 Technical requirements

5.1 Appearance The product shall have a clean surface, no obvious shrinkage or expansion deformation, no obvious delamination or cracking, and with straight cuts and neat sections.

5.2 Permissible deviations of dimensions The permissible deviations of board dimensions shall conform to the provisions of Table 1, the permissible deviations of tube dimensions shall conform to the provisions of Table 2, and the permissible deviations of special-shaped products shall be determined by the supplier and the buyer through negotiation. meet the ENF level in GB/T 39600.

6 Test methods

6.1 General rules If the shape of the product cannot meet the test requirements, a specimen that meets the test requirements may be prepared according to the same proportion and process, and the apparent density deviation shall not exceed 10%. Except for appearance, permissible deviations of dimensions, combustion performance and formaldehyde emission, the specimen shall be free of coatings and self-skinning for other tests. Unless otherwise specified, the specimen shall be conditioned at a temperature of (23±2) °C and a relative humidity of (50±10)% for no less than 88 hours.

6.2 Appearance Visual inspection.

6.3 Apparent density The test shall be carried out according to GB/T 6343.

6.4 Permissible deviations of dimensions The test shall be carried out according to GB/T 6342.

6.5 Combustion performance The test shall be carried out according to GB 8624.

6.6 Compressive strength The test shall be carried out according to GB/T 8813.

6.7 Bending fracture force The test shall be carried out according to GB/T 8812.1.

6.8 Compression creep The test shall be carried out according to GB/T 15048.

6.9 Dimensional stability The test shall be carried out according to GB/T 8811.