Research Report on China Domestic Extruded Polystyrene (XPS) Market (2025–2026)

I. Industry Overview

Extruded polystyrene foam board (referred to as XPS extruded board) is rigid thermal insulation board continuously foamed and shaped by high-temperature extrusion, with polystyrene resin as the main raw material supplemented by special additives. Featuring high closed-cell ratio, low thermal conductivity, high compressive strength, excellent moisture-proof and corrosion-resistant performance as well as stable heat preservation effect, XPS serves as the core thermal insulation and moisture-proof material for building energy conservation, infrastructure projects, cold chain warehousing and other fields in China.

Compared with thermal insulation materials such as EPS polystyrene board and rock wool board, XPS has prominent advantages in low-temperature environments, high-load-bearing conditions and humid working conditions. It is especially suitable for heating buildings in northern regions, floor heating paving, road subgrade anti-freezing, cold storage thermal insulation and other scenarios. Driven by the implementation of the national dual-carbon goals, upgraded green building standards, urban renewal and energy-saving renovation of old residential communities, the XPS industry has shifted from rapid expansion to a stable growth stage featuring high-quality development, standardization and low-carbon transformation, evolving into a core segmented track within the building energy conservation industry.

II. Overall Domestic Market Scale (2025–2026)

2.1 Overall Market Volume

The domestic XPS market maintains steady growth with incremental demands continuously released. From high-speed capacity expansion to stock quality improvement coupled with incremental expansion, the industry operates under dual driving forces. Based on updated industrial data, the domestic XPS market scale reached approximately RMB 28.7 billion in 2025, growing by 9.4% year-on-year. The market size is expected to exceed RMB 31 billion in 2026, with annual compound growth rate remaining between 8% and 10%, presenting stable growth without drastic fluctuation risks.

In terms of global share, China has become the world’s largest producer and consumer of XPS. China’s global share of XPS production capacity and output reached 38.2% in 2025, and is projected to rise to 39.5% in 2026, holding a dominant position in the global thermal insulation material industry.

2.2 Production Capacity, Output and Supply-Demand Pattern

1. Capacity & Output Data: The total domestic XPS production capacity stood at 4.2 million tons in 2025, while actual output hit 3.8 million tons, with an overall capacity utilization rate of 90.5%. The industry features saturated overall capacity and high operation efficiency of leading

manufacturers. In 2026, the overall capacity will slightly expand to 4.4 million tons, with estimated output of 3.95 million tons and capacity utilization rate dipping marginally to 89.7%. Newly added capacity mainly consists of high-end compliant production lines, while backward low-end capacity keeps phasing out.

2. Supply-Demand Relationship: Domestic XPS demand reached 3.75 million tons in 2025, basically balancing supply with a slight surplus of 50,000 tons. Market demand will rise to 3.9 million tons in 2026, narrowing the supply surplus and leading toward a balanced supply-demand structure. Structural shortage emerges in the market: high-end flame-retardant, high-strength and low-carbon eco-friendly XPS is in short supply, while low-grade ordinary boards face severe homogeneous competition.

III. Segmented Product Market Structure

3.1 Segmentation by Thickness (Shipment Share)

Demand for XPS specifications in domestic market is highly concentrated, with engineering standard sizes dominating consumption:

1. 30mm–100mm Medium-Thickness Boards (Mainstream Product): Accounting for 64.8% of total market shipments. Mainly applied to external wall thermal insulation, roof insulation and partition wall insulation of residential and commercial buildings as standard construction materials, it boasts the largest demand base and stable market performance.

2. Thin Boards (below 20mm): Occupying 18.3% of shipments, mostly used for floor heating reflective layers, indoor moisture-proof underlayment and thermal insulation for small equipment, mainly sold via retail and home decoration channels.

3. Extra-Thick Boards (100mm–150mm & above): Taking up 16.9% of shipments, categorized as high-end special boards for engineering projects. Applied to cold storage insulation, frozen soil subgrade protection, large municipal infrastructure and thermal insulation for industrial equipment, these products carry higher added value.

3.2 Segmentation by Flame Retardant Grade

Upgraded fire protection standards become a core trend of the industry, with penetration rate of high flame-retardant products rising continuously:
The penetration rate of Class B1 flame-retardant XPS reached 53.7% nationwide in 2025. In strict accordance with national building fire codes, Class B1 flame-retardant boards are mandatory for high-rise buildings, public constructions and municipal projects. Its penetration rate is expected to climb to 61.2% in 2026, gradually replacing ordinary Class B2 and non-flame-retardant boards, while market space for low-flame-retardant and non-retardant products keeps shrinking.

3.3 Segmentation by Application Scenarios

1. Building Thermal Insulation (Core Demand): Occupying over 65% of total consumption, covering newly built residential buildings, commercial premises, energy-saving renovation of old communities and thermal insulation for prefabricated buildings. Supported by urban renewal and popularization of green buildings, this segment maintains stable growth as the largest demand source.

2. Cold Chain Logistics & Warehousing: Account for around 18% of consumption, the fastest-growing segmented market. Driven by booming construction of cold chain industrial parks, fresh food warehouses and low-temperature logistics, demand for customized high-strength moisture-proof thermal insulation XPS surges, granting strong premium capability to high-end customized products.

3. Municipal Infrastructure: Make up approximately 12% of consumption, mainly used for anti-freezing and moisture-proof treatment of roads, bridges and tunnels as well as subgrade thermal insulation. Demand remains steady backed by national infrastructure investment stabilization policies.

4. Industrial & Other Applications: Account for roughly 5% of consumption, including thermal insulation for industrial equipment, pipeline insulation, moisture-proof flooring for venues, with steadily growing demand.

IV. Regional Market Distribution in China

The domestic XPS market follows a pattern of rigid demand dominating northern regions, steady expansion in southern areas and geographically concentrated production capacity, featuring remarkable regional differences:

1. North China (Hebei, Shandong, Shanxi): The largest production and consumption core region nationwide. Cold winters generate rigid demand for building energy-saving renovation, popularized floor heating and subgrade anti-freezing works. This region clusters massive XPS manufacturers with highly concentrated production capacity and fierce market competition, serving as the national price lowland and circulation hub.

2. East China (Jiangsu, Zhejiang, Anhui): Core market for high-end demand. This region enforces stringent green building codes, gathering high-end residential buildings, commercial projects and cold chain facilities. The proportion of demand for Class B1 flame-retardant and low-carbon eco-friendly high-end XPS far exceeds the national average, supporting higher product added value.

3. South & Central China: Steady-growth markets dominated by thermal insulation for civil buildings and home floor heating. Low-grade boards face intense price competition while compliant high-end products have noticeable supply gaps.

4. Northwest & Southwest China: Potential incremental markets. Fueled by western infrastructure development, upgraded construction under rural revitalization and anti-freezing projects in alpine zones, regional demand rises year by year with ample market blank space and prominent growth potential.

V. Industry Competitive Landscape

5.1 Overall Competition Pattern

The domestic XPS industry features the structure of large overall market with numerous small enterprises, rising concentration of leading players and cutthroat competition among small manufacturers:

1. Leading Brand Manufacturers: Possess standardized production, qualified certifications, environmental compliance and stable sales channels. Focusing on high-end engineering projects, centralized procurement by large real estate developers and cold chain infrastructure, they mainly supply Class B1 flame-retardant and customized low-carbon products with higher gross profit margin and strong risk resistance, gaining expanding market share continuously.

2. Small & Medium Manufacturers: Large in quantity, concentrated in the low-end market relying on low-price bulk sales without core technology or complete compliance qualifications. Mainly serve local scattered home decoration and small-scale projects with thin profit margins under severe homogeneous competition.

3. Accelerated Industrial Consolidation: Under regular environmental inspections, dual energy consumption control and upgraded fire safety codes, small factories with substandard environmental protection, backward capacity and incomplete flame retardant qualifications keep exiting the market. Production capacity, orders and industrial resources gradually converge toward large-scale compliant manufacturers.

5.2 Core Competitive Factors

1. Compliance Qualifications: Certifications for building energy conservation filing, flame retardant inspection reports and environmental production permits become core thresholds for undertaking large engineering projects;

2. Product Quality: Stable high closed-cell rate, low thermal conductivity, high compressive strength and consistent flame retardancy form core differentiation advantages;

3. Low-Carbon Manufacturing Technology: Hydrofluorocarbon-free foaming and low-carbon production processes emerge as new competitive barriers to meet procurement standards of green buildings;

4. Channel Capability: Engineering sales, centralized procurement by real estate groups and

regional dealer networks determine business scale.

VI. Industrial Policies & Cost Environment

6.1 Core Beneficial Policies

1. Mandatory implementation of General Code for Energy Efficiency and Renewable Energy Application in Buildings (GB 55015-2021) raises mandatory thermal insulation standards for new buildings and renovation projects, directly stimulating rigid demand for high-performance XPS;

2. Dual-carbon targets and green building promotion policies restrict high-energy-consuming building materials and encourage adoption of low-carbon thermal insulation materials, forcing elimination of backward high-energy-consuming capacity;

3. Urban renewal, energy-saving renovation of old residential communities and stable infrastructure investment continuously release demand from stock renovation and new construction, forming stable market fundamentals;

4. Updated building fire codes explicitly ban low-flame-retardant thermal insulation materials for high-rise and public buildings, driving replacement upgrade toward Class B1 high-grade products.

6.2 Cost Influencing Factors

Core raw materials of XPS include polystyrene pellets, foaming agents and flame retardants; raw material prices directly determine industrial profit levels:

1. Prices of styrene chemical products fluctuate alongside crude oil and chemical market trends, acting as the primary variable of industry costs;

2. Prices of eco-friendly hydrofluorocarbon-free foaming agents and high-efficiency flame retardants remain high, pushing up production costs of high-end products significantly;

3. Recent years of environmental production restrictions and dual energy consumption control increase manufacturing costs for small and medium manufacturers, further accelerating phase-out of low-end capacity.

VII. Industrial Development Trends (2026–2030)

1. Upgrading toward High-End & Standardized Products
The industry is breaking away from low-price competition in low-end segments; Class B1 flame-retardant, hydrofluorocarbon-free low-carbon and customized high-strength boards will become mainstream. Special functional XPS tailored for cold chain, alpine infrastructure and high-end construction will serve as core profit growth drivers for manufacturers.

2. Low-Carbon & Intelligent Production Processes

Backward hydrofluorocarbon-containing foaming and high-energy-consuming production lines will be phased out gradually. Eco-friendly fluorine-free foaming equipment, automated continuous production lines and energy-saving machinery will become industry standard configuration. Cost reduction via intelligent manufacturing and low-carbon compliance become core competitiveness for survival.

3. Sustained Rise in Industrial Concentration

Normalized supervision on environmental protection, fire safety and energy consumption forces numerous unqualified small-scale workshop-style factories out of business. Industrial resources, orders and production capacity will keep converging toward large compliant enterprises, leading to increasingly scaled and branded market features.

4. Expanding Application Scenarios

Beyond traditional building thermal insulation, emerging demands from cold chain warehouses, new energy plants, prefabricated construction, alpine infrastructure and thermal insulation for modern agricultural greenhouses unlock long-term incremental space for the industry.

5. Growth Potential of Export Market

China boasts mature production capacity and technology for XPS with prominent cost-performance advantages in global market. Cross-border building material trade expands exports to Southeast Asia, Central Asia, Africa and other regions steadily, creating new growth curves for leading enterprises.

VIII. Industrial Risks & Operational/Investment Recommendations

8.1 Core Industry Risks

1. Homogeneous Competition Risk: Oversupply of ordinary low-end boards triggers persistent price wars, squeezing profit margins of small manufacturers;

2. Regulatory Compliance Risk: Tightened supervision over environmental protection, fire safety and energy consumption may lead to shutdown and rectification for non-compliant capacity at any time;

3. Raw Material Price Volatility Risk: Fluctuations in prices of styrene and other chemical raw materials cause unstable production costs and corporate profits;

4. Real Estate Cycle Fluctuation Risk: Demand from civil construction is affected by real estate market cycles, bringing periodic volatility to market demand.

8.2 Investment & Operational Suggestions

1. Product Side: Avoid vicious low-price competition in low-end market; focus on Class B1

flame-retardant and fluorine-free low-carbon high-end XPS, develop customized special boards for cold chain and infrastructure projects to build differentiated advantages;

2. Production Side: Upgrade automated low-carbon eco-friendly production lines and complete full sets of qualification certifications to meet procurement requirements of large-scale engineering and green building projects and avoid compliance risks;

3. Channel Side: Deepen high-quality channels including engineering centralized procurement, municipal infrastructure and cold chain industrial parks, reduce scattered low-profit retail businesses to stabilize profit margins;

4. Regional Layout: Prioritize layout in incremental markets of Northwest and Southwest China while consolidating core markets in North and East China, leveraging regional differences to strengthen channel advantages;

5. Risk Control: Establish hedging mechanisms against raw material price swings, control production capacity rationally to avoid blind capacity expansion and focus on quality improvement and efficiency growth.

IX. Report Summary

During 2025–2026, China's domestic XPS extruded board industry maintains balanced supply and demand, steady growth and structural optimization, stepping out of extensive expansion into a high-quality development cycle. The core growth logic shifts from capacity expansion to quality upgrading, compliance iteration and scenario expansion.

In the short term, urban renewal, renovation of old communities and stable infrastructure investment underpin steady rigid market demand. In the long run, popularization of green buildings, implementation of dual-carbon policies, expansion of emerging application scenarios and substitution toward high-end products will continuously drive industrial upgrading and expansion. In the future, compliance, low-carbon development, high-end positioning and customized production will become core keywords for survival and development of XPS manufacturers. Enterprises equipped with advantages in technology, qualification, sales channels and standardized production capacity will continuously capture incremental dividends in the industry.

术语注释（便于商务对外使用）

- XPS = Extruded Polystyrene 挤塑聚苯板

- Class B1 flame retardant B1 级阻燃

- closed-cell ratio 闭孔率

- thermal conductivity 导热系数

- compressive strength 抗压强度

- dual-carbon goals 双碳目标

- centralized procurement 集采

- fluorine-free foaming 无氟发泡