

Vacuum Insulated Glass Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented, By Product (Dual Glaze, Triple Glaze), By Application (Windows, Doors, Roof Lights, Roof Glazing, Glass Facade, Others), By End-User (Commercial, Residential, Industrial), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

The Global Vacuum Insulated Glass (VIG) Market was valued at USD 5.31 Billion in 2024 and is expected to reach USD 6.70 Billion by 2030, growing at a CAGR of 3.80%. This market encompasses the development and commercialization of advanced glazing solutions that utilize vacuum technology to enhance thermal insulation properties. VIG consists of two or more glass panes separated by a thin vacuum gap and sealed at the edges, effectively eliminating conductive and convective heat transfer. This results in superior insulation performance compared to conventional double or triple glazing. VIG is widely used in residential, commercial, and industrial buildings, especially in areas with extreme climates or stringent energy-efficiency regulations. The growing emphasis on sustainable construction, rising energy costs, and demand for buildings that meet green certification standards such as LEED and BREEAM are propelling market growth. In addition, consumer preferences for energy-efficient, aesthetically modern glass facades and advancements in production techniques are expanding applications across sectors including transportation and smart infrastructure. Despite high production costs and technical complexity, increasing investments in automation and cost-reduction strategies are unlocking new opportunities for wider adoption of VIG technologies.

Key Market Drivers

Rising Demand for Energy-Efficient and Sustainable Building Solutions

The push for environmentally responsible and energy-efficient buildings is a primary driver for the vacuum insulated glass (VIG) market. Buildings are responsible for a significant portion of global energy use and emissions, prompting stricter building codes and sustainability mandates. VIG provides exceptional thermal insulation with minimal thickness, making it ideal for structures targeting net-zero energy consumption and green certification standards like LEED and BREEAM. Policies such as the EU's Energy Performance of Buildings Directive, the U.S. Energy Star Program, and China's Green Building Evaluation Standard are encouraging or requiring the use of high-performance glazing. In climates with extreme heat or cold, VIG improves indoor comfort and reduces reliance on HVAC systems, contributing to lower energy bills. Additionally, VIG's compatibility with retrofitting projects makes it suitable for upgrading older buildings to meet modern efficiency requirements. Its slim profile supports space-saving and modern architectural aesthetics, a growing priority in densely populated urban centers. As sustainability becomes central to the construction industry, the role of VIG in reducing energy consumption and supporting climate goals is increasingly significant.

Key Market Challenges

High Production Costs and Complex Manufacturing Process

A key challenge for the vacuum insulated glass market is the high cost of manufacturing, which stems from complex production requirements and expensive materials. Producing VIG involves precision vacuum sealing, specialized edge materials, and internal spacers to maintain a consistent gap between panes—technologies that are both costly and technically demanding. The raw materials used, including Low-E coated glass and hermetic sealing components, further raise costs. The infrastructure and equipment necessary for VIG production are capital-intensive, limiting entry for small and mid-sized players. Moreover, maintaining the vacuum seal over time is critical, as any failure compromises the product's performance. This sensitivity leads to high quality control demands and potential wastage due to defects. These factors result in a higher price point for VIG products, restricting adoption in cost-sensitive segments and emerging markets. As a result, despite its benefits, widespread use remains limited by financial and technical constraints that manufacturers must overcome to achieve scalability.

Key Market Trends

Rising Integration of VIG in Smart and Green Buildings

An important trend in the VIG market is its growing adoption in green and smart building projects. Developers and architects are increasingly selecting VIG for its combination of high thermal insulation, ultra-thin profile, and suitability for contemporary designs. It supports stringent energy codes and contributes to green certifications like LEED and BREEAM. With U-values as low as 0.3 W/m²K, VIG significantly reduces thermal transfer, enhancing building energy efficiency and lowering HVAC requirements. In urban areas, its superior sound insulation further adds value in noisy environments. As building designs incorporate more intelligent features, VIG is being paired with dynamic glazing systems such as electrochromic and photochromic glass, enabling windows to adapt to changing light and temperature conditions. This integration aligns with the broader shift toward responsive, energy-efficient building envelopes and supports the long-term vision for sustainable urban development.

Key Market Players

Guardian Industries

Nippon Sheet Glass Co., Ltd.

Panasonic Corporation

Saint-Gobain

AGC Inc.

Superglass Industry Co., Ltd.

NSG Group

SCHOTT AG

Thermotech Insulated Glass

SG Intercept Technologies Pvt Ltd

Report Scope:

In this report, the Global Vacuum Insulated Glass Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Vacuum Insulated Glass Market, By Product:

Dual Glaze

Triple Glaze

Vacuum Insulated Glass Market, By Application:

Windows

Doors

Roof Lights

Roof Glazing

Glass Façade

Others

Vacuum Insulated Glass Market, By End-User:

Commercial

Residential

Industrial

Vacuum Insulated Glass Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Vacuum Insulated Glass Market.

Available Customizations:

Global Vacuum Insulated Glass Market report with the given Market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional Market players (up to five).

Contents

1. PRODUCT OVERVIEW

- 1.1. Market Definition
- 1.2. Scope of the Market
 - 1.2.1. Markets Covered
 - 1.2.2. Years Considered for Study
- 1.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Formulation of the Scope
- 2.4. Assumptions and Limitations
- 2.5. Sources of Research
 - 2.5.1. Secondary Research
 - 2.5.2. Primary Research
- 2.6. Approach for the Market Study
 - 2.6.1. The Bottom-Up Approach
 - 2.6.2. The Top-Down Approach
- 2.7. Methodology Followed for Calculation of Market Size & Market Shares
- 2.8. Forecasting Methodology
 - 2.8.1. Data Triangulation & Validation

3. EXECUTIVE SUMMARY

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, and Trends

4. VOICE OF CUSTOMER

5. GLOBAL VACUUM INSULATED GLASS MARKET OUTLOOK

- 5.1. Market Size & Forecast

- 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Product (Dual Glaze, Triple Glaze)
 - 5.2.2. By Application (Windows, Doors, Roof Lights, Roof Glazing, Glass Facade, Others)
 - 5.2.3. By End-User (Commercial, Residential, Industrial)
 - 5.2.4. By Region
- 5.3. By Company (2024)
- 5.4. Market Map

6. NORTH AMERICA VACUUM INSULATED GLASS MARKET OUTLOOK

- 6.1. Market Size & Forecast
 - 6.1.1. By Value
- 6.2. Market Share & Forecast
 - 6.2.1. By Product
 - 6.2.2. By Application
 - 6.2.3. By End-User
 - 6.2.4. By Country
- 6.3. North America: Country Analysis
 - 6.3.1. United States Vacuum Insulated Glass Market Outlook
 - 6.3.1.1. Market Size & Forecast
 - 6.3.1.1.1. By Value
 - 6.3.1.2. Market Share & Forecast
 - 6.3.1.2.1. By Product
 - 6.3.1.2.2. By Application
 - 6.3.1.2.3. By End-User
 - 6.3.2. Canada Vacuum Insulated Glass Market Outlook
 - 6.3.2.1. Market Size & Forecast
 - 6.3.2.1.1. By Value
 - 6.3.2.2. Market Share & Forecast
 - 6.3.2.2.1. By Product
 - 6.3.2.2.2. By Application
 - 6.3.2.2.3. By End-User
 - 6.3.3. Mexico Vacuum Insulated Glass Market Outlook
 - 6.3.3.1. Market Size & Forecast
 - 6.3.3.1.1. By Value
 - 6.3.3.2. Market Share & Forecast
 - 6.3.3.2.1. By Product

6.3.3.2.2. By Application

6.3.3.2.3. By End-User

7. EUROPE VACUUM INSULATED GLASS MARKET OUTLOOK

7.1. Market Size & Forecast

7.1.1. By Value

7.2. Market Share & Forecast

7.2.1. By Product

7.2.2. By Application

7.2.3. By End-User

7.2.4. By Country

7.3. Europe: Country Analysis

7.3.1. Germany Vacuum Insulated Glass Market Outlook

7.3.1.1. Market Size & Forecast

7.3.1.1.1. By Value

7.3.1.2. Market Share & Forecast

7.3.1.2.1. By Product

7.3.1.2.2. By Application

7.3.1.2.3. By End-User

7.3.2. United Kingdom Vacuum Insulated Glass Market Outlook

7.3.2.1. Market Size & Forecast

7.3.2.1.1. By Value

7.3.2.2. Market Share & Forecast

7.3.2.2.1. By Product

7.3.2.2.2. By Application

7.3.2.2.3. By End-User

7.3.3. Italy Vacuum Insulated Glass Market Outlook

7.3.3.1. Market Size & Forecast

7.3.3.1.1. By Value

7.3.3.2. Market Share & Forecast

7.3.3.2.1. By Product

7.3.3.2.2. By Application

7.3.3.2.3. By End-User

7.3.4. France Vacuum Insulated Glass Market Outlook

7.3.4.1. Market Size & Forecast

7.3.4.1.1. By Value

7.3.4.2. Market Share & Forecast

7.3.4.2.1. By Product

- 7.3.4.2.2. By Application
- 7.3.4.2.3. By End-User
- 7.3.5. Spain Vacuum Insulated Glass Market Outlook
 - 7.3.5.1. Market Size & Forecast
 - 7.3.5.1.1. By Value
 - 7.3.5.2. Market Share & Forecast
 - 7.3.5.2.1. By Product
 - 7.3.5.2.2. By Application
 - 7.3.5.2.3. By End-User

8. ASIA-PACIFIC VACUUM INSULATED GLASS MARKET OUTLOOK

- 8.1. Market Size & Forecast
 - 8.1.1. By Value
- 8.2. Market Share & Forecast
 - 8.2.1. By Product
 - 8.2.2. By Application
 - 8.2.3. By End-User
 - 8.2.4. By Country
- 8.3. Asia-Pacific: Country Analysis
 - 8.3.1. China Vacuum Insulated Glass Market Outlook
 - 8.3.1.1. Market Size & Forecast
 - 8.3.1.1.1. By Value
 - 8.3.1.2. Market Share & Forecast
 - 8.3.1.2.1. By Product
 - 8.3.1.2.2. By Application
 - 8.3.1.2.3. By End-User
 - 8.3.2. India Vacuum Insulated Glass Market Outlook
 - 8.3.2.1. Market Size & Forecast
 - 8.3.2.1.1. By Value
 - 8.3.2.2. Market Share & Forecast
 - 8.3.2.2.1. By Product
 - 8.3.2.2.2. By Application
 - 8.3.2.2.3. By End-User
 - 8.3.3. Japan Vacuum Insulated Glass Market Outlook
 - 8.3.3.1. Market Size & Forecast
 - 8.3.3.1.1. By Value
 - 8.3.3.2. Market Share & Forecast
 - 8.3.3.2.1. By Product

- 8.3.3.2.2. By Application
- 8.3.3.2.3. By End-User
- 8.3.4. South Korea Vacuum Insulated Glass Market Outlook
 - 8.3.4.1. Market Size & Forecast
 - 8.3.4.1.1. By Value
 - 8.3.4.2. Market Share & Forecast
 - 8.3.4.2.1. By Product
 - 8.3.4.2.2. By Application
 - 8.3.4.2.3. By End-User
- 8.3.5. Australia Vacuum Insulated Glass Market Outlook
 - 8.3.5.1. Market Size & Forecast
 - 8.3.5.1.1. By Value
 - 8.3.5.2. Market Share & Forecast
 - 8.3.5.2.1. By Product
 - 8.3.5.2.2. By Application
 - 8.3.5.2.3. By End-User

9. SOUTH AMERICA VACUUM INSULATED GLASS MARKET OUTLOOK

- 9.1. Market Size & Forecast
 - 9.1.1. By Value
- 9.2. Market Share & Forecast
 - 9.2.1. By Product
 - 9.2.2. By Application
 - 9.2.3. By End-User
 - 9.2.4. By Country
- 9.3. South America: Country Analysis
 - 9.3.1. Brazil Vacuum Insulated Glass Market Outlook
 - 9.3.1.1. Market Size & Forecast
 - 9.3.1.1.1. By Value
 - 9.3.1.2. Market Share & Forecast
 - 9.3.1.2.1. By Product
 - 9.3.1.2.2. By Application
 - 9.3.1.2.3. By End-User
 - 9.3.2. Argentina Vacuum Insulated Glass Market Outlook
 - 9.3.2.1. Market Size & Forecast
 - 9.3.2.1.1. By Value
 - 9.3.2.2. Market Share & Forecast
 - 9.3.2.2.1. By Product

- 9.3.2.2.2. By Application
- 9.3.2.2.3. By End-User
- 9.3.3. Colombia Vacuum Insulated Glass Market Outlook
 - 9.3.3.1. Market Size & Forecast
 - 9.3.3.1.1. By Value
 - 9.3.3.2. Market Share & Forecast
 - 9.3.3.2.1. By Product
 - 9.3.3.2.2. By Application
 - 9.3.3.2.3. By End-User

10. MIDDLE EAST AND AFRICA VACUUM INSULATED GLASS MARKET OUTLOOK

- 10.1. Market Size & Forecast
 - 10.1.1. By Value
- 10.2. Market Share & Forecast
 - 10.2.1. By Product
 - 10.2.2. By Application
 - 10.2.3. By End-User
 - 10.2.4. By Country
- 10.3. Middle East and Africa: Country Analysis
 - 10.3.1. South Africa Vacuum Insulated Glass Market Outlook
 - 10.3.1.1. Market Size & Forecast
 - 10.3.1.1.1. By Value
 - 10.3.1.2. Market Share & Forecast
 - 10.3.1.2.1. By Product
 - 10.3.1.2.2. By Application
 - 10.3.1.2.3. By End-User
 - 10.3.2. Saudi Arabia Vacuum Insulated Glass Market Outlook
 - 10.3.2.1. Market Size & Forecast
 - 10.3.2.1.1. By Value
 - 10.3.2.2. Market Share & Forecast
 - 10.3.2.2.1. By Product
 - 10.3.2.2.2. By Application
 - 10.3.2.2.3. By End-User
 - 10.3.3. UAE Vacuum Insulated Glass Market Outlook
 - 10.3.3.1. Market Size & Forecast
 - 10.3.3.1.1. By Value
 - 10.3.3.2. Market Share & Forecast

- 10.3.3.2.1. By Product
- 10.3.3.2.2. By Application
- 10.3.3.2.3. By End-User
- 10.3.4. Kuwait Vacuum Insulated Glass Market Outlook
 - 10.3.4.1. Market Size & Forecast
 - 10.3.4.1.1. By Value
 - 10.3.4.2. Market Share & Forecast
 - 10.3.4.2.1. By Product
 - 10.3.4.2.2. By Application
 - 10.3.4.2.3. By End-User
- 10.3.5. Turkey Vacuum Insulated Glass Market Outlook
 - 10.3.5.1. Market Size & Forecast
 - 10.3.5.1.1. By Value
 - 10.3.5.2. Market Share & Forecast
 - 10.3.5.2.1. By Product
 - 10.3.5.2.2. By Application
 - 10.3.5.2.3. By End-User

11. MARKET DYNAMICS

- 11.1. Drivers
- 11.2. Challenges

12. MARKET TRENDS & DEVELOPMENTS

- 12.1. Merger & Acquisition (If Any)
- 12.2. Product Launches (If Any)
- 12.3. Recent Developments

13. COMPANY PROFILES

- 13.1. Guardian Industries
 - 13.1.1. Business Overview
 - 13.1.2. Key Revenue and Financials
 - 13.1.3. Recent Developments
 - 13.1.4. Key Personnel/Key Contact Person
 - 13.1.5. Key Product/Services Offered
- 13.2. Nippon Sheet Glass Co., Ltd.
- 13.3. Panasonic Corporation

- 13.4. Saint-Gobain
- 13.5. AGC Inc.
- 13.6. Superglass Industry Co., Ltd.
- 13.7. NSG Group
- 13.8. SCHOTT AG
- 13.9. Thermotech Insulated Glass
- 13.10. SG Intercept Technologies Pvt Ltd

14. STRATEGIC RECOMMENDATIONS

15. ABOUT US & DISCLAIMER

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