

Profiled Steel Sheet Decking Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Closed Type, Open Type, Reentrant Type), By Construction Method (Composite Decking, Non-Composite Decking), By End User (Residential, Commercial, Industrial, Infrastructure), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

Global Profiled Steel Sheet Decking Market was valued at USD 6.12 billion in 2024 and is expected to reach USD 11.16 billion by 2030 with a CAGR of 10.36% during the forecast period.

The profiled steel sheet decking market refers to the industry centered around the production and application of corrugated or ribbed steel sheets used as structural components in flooring, roofing, and wall systems across various construction projects. These steel sheets are designed to enhance the load-bearing capacity of structures by acting as a permanent formwork for reinforced concrete or by serving as standalone load-carrying elements. Typically made from galvanized or coated steel, profiled decking sheets are known for their high strength-to-weight ratio, ease of installation, and resistance to environmental stressors, making them suitable for residential, commercial, industrial, and infrastructure applications.

This market is poised for significant growth due to several factors. One of the primary drivers is the global increase in construction activities, particularly in emerging economies where rapid urbanization and industrialization are fueling demand for

efficient building materials. Profiled steel sheet decking systems enable faster construction timelines, reduced labor costs, and enhanced structural performance, which are essential in high-rise buildings, commercial complexes, and transportation infrastructure projects. Moreover, as builders and developers seek sustainable construction materials, steel decking is gaining preference due to its recyclability, long lifespan, and minimal site waste.

Technological advancements in roll forming and coating techniques are also boosting the market by enabling the production of more complex profiles with improved durability and corrosion resistance. These innovations support the use of steel decking in challenging environments, such as coastal areas and industrial facilities. Additionally, the growing popularity of composite steel-concrete floor systems in modern architecture is enhancing the demand for profiled decking sheets, which serve as both formwork and reinforcement.

The market is further supported by favourable building codes and government initiatives promoting green and modular construction practices. As digital construction tools like Building Information Modeling become more prevalent, the integration of standardized steel decking systems into prefabricated and design-to-build workflows is expected to accelerate. As a result, the profiled steel sheet decking market is well-positioned for continued expansion driven by performance benefits, environmental considerations, and evolving construction methodologies.

Key Market Drivers.

Surge in Infrastructure Development Projects

The Profiled Steel Sheet Decking Market is experiencing robust growth driven by a global surge in infrastructure development projects, particularly in rapidly urbanizing regions such as Asia-Pacific, Latin America, and Africa. Governments and private sectors are investing heavily in transportation infrastructure, including bridges, airports, and railway stations, as well as energy facilities and commercial buildings, to accommodate growing populations and economic demands. Profiled steel sheet decking is a preferred choice due to its lightweight, high-strength properties, and ability to reduce construction time by serving as both formwork and reinforcement in composite floor systems.

For instance, its use in high-rise buildings and industrial facilities ensures structural stability while minimizing material costs. The durability and corrosion resistance of

galvanized and coated steel decking further enhance its appeal for projects requiring long-term performance under diverse environmental conditions. In developing economies like India and China, massive urbanization projects, such as smart city initiatives and highway expansions, are increasing demand for efficient construction materials.

The versatility of profiled steel sheet decking, available in trapezoidal, corrugated, and ribbed profiles, allows it to meet varied structural requirements, from residential complexes to large-scale industrial warehouses. Additionally, its ease of installation and compatibility with sustainable construction practices align with global infrastructure trends, reducing concrete usage and construction waste. T

his driver is bolstered by significant government funding, such as the U.S. Infrastructure Investment and Jobs Act, which emphasizes modernizing aging infrastructure, further propelling the adoption of profiled steel sheet decking in large-scale projects. The global push for resilient and cost-effective infrastructure solutions ensures sustained market growth as construction activities intensify to meet urbanization and economic development goals.

According to the Global Infrastructure Hub, global infrastructure investments are projected to reach USD26 trillion for roads, USD10 trillion for railways, and USD2.1 trillion for airports by 2030. This substantial capital flow into large-scale construction is expected to significantly boost demand for high-performance and durable building materials such as profiled steel sheet decking. As governments and private sectors prioritize resilient and efficient infrastructure, steel decking solutions will play a crucial role in ensuring structural integrity and long-term cost efficiency.

Key Market Challenges

Volatility in Raw Material Prices and Supply Chain Disruptions

One of the most pressing challenges confronting the profiled steel sheet decking market is the volatility in raw material prices, particularly steel, which is the primary input for decking products. Global fluctuations in steel prices are driven by various geopolitical factors, trade policies, production curbs in major exporting nations, energy cost variability, and the cyclical nature of the construction and manufacturing sectors. Inconsistent pricing directly impacts profit margins, especially for small- and mid-sized manufacturers operating under fixed-contract supply arrangements. When the price of hot-rolled coil steel or galvanized sheet steel spikes, companies must either absorb

higher production costs or pass them on to consumers—both of which create market instability.

Compounding this issue is the disruption of global supply chains caused by events such as the COVID-19 pandemic, the Russia-Ukraine conflict, and logistical bottlenecks at critical ports and shipping lanes. These disruptions have resulted in delayed delivery of raw materials, increased transportation costs, and longer lead times, further complicating procurement and production planning for manufacturers of profiled steel sheet decking. The construction industry, being highly time-sensitive, cannot afford such inconsistencies without facing substantial cost overruns and project delays.

Additionally, trade restrictions such as tariffs and anti-dumping duties on imported steel from specific countries add another layer of complexity for manufacturers that rely on international sourcing. This regulatory unpredictability discourages long-term supply agreements and deters cross-border collaboration. Many companies also struggle with limited local sourcing options, making them vulnerable to global market swings. In regions where domestic steel manufacturing is underdeveloped, dependency on imports becomes a significant risk.

To navigate these challenges, companies in the profiled steel sheet decking market must invest in diversified sourcing strategies, long-term supplier partnerships, and vertical integration where feasible. However, such strategic shifts require capital investment and operational agility, which not all market participants possess. As a result, the ongoing volatility in raw material prices and global supply chain disruptions continue to be a major impediment to stable growth in this sector.

Key Market Trends

Growing Integration of Building Information Modeling in Steel Decking Design and Installation

A prominent trend reshaping the profiled steel sheet decking market is the increasing integration of Building Information Modeling into both the design and installation phases of construction projects. Building Information Modeling is a digital methodology that enables stakeholders to visualize, simulate, and optimize every aspect of a building's life cycle before physical construction begins. The application of Building Information Modeling in the steel decking segment is helping architects, engineers, and contractors achieve greater accuracy in design specifications, load distribution analysis, and clash detection with other building components.

By incorporating profiled steel sheet decking into Building Information Modeling workflows, project teams are able to visualize precise decking profiles, rib orientations, and connections in three-dimensional models. This not only streamlines the coordination between structural and architectural teams but also reduces errors during the procurement and installation phases. It ensures that the correct quantity of decking is ordered and eliminates waste caused by misalignment or rework. In addition, the ability to simulate performance factors such as vibration control, load transfer, and fire resistance in advance allows for more informed material selection and design efficiency.

Construction firms that adopt Building Information Modeling for profiled steel decking report shorter construction timelines, enhanced quality control, and improved compliance with local and international building codes. Furthermore, Building Information Modeling enables smoother integration of prefabricated components, facilitating just-in-time delivery and on-site assembly, particularly in modular and high-rise building projects.

As the construction industry moves toward digitization, the adoption of Building Information Modeling for steel decking is expected to accelerate. Governments and regulatory bodies in various regions are mandating Building Information Modeling for public infrastructure projects, further propelling its use. The trend reflects a broader push toward smart construction practices, data-driven decision-making, and lean project management, positioning Building Information Modeling as a vital enabler of growth in the profiled steel sheet decking market.

Key Market Players

Tata Steel Limited

ArcelorMittal S.A.

Kingspan Group plc

SSAB AB

Nucor Corporation

BlueScope Steel Limited

JSW Steel Ltd.

Metaldeck (Studwelders Composite Floor Decks Ltd.)

Canam Group Inc.

DANA Group of Companies

Report Scope:

In this report, the Global Profiled Steel Sheet Decking Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Profiled Steel Sheet Decking Market, By Type:

Closed Type

Open Type

Reentrant Type

Profiled Steel Sheet Decking Market, By Construction Method:

Composite Decking

Non-Composite Decking

Profiled Steel Sheet Decking Market, By End User:

Residential

Commercial

Industrial

Infrastructure

Profiled Steel Sheet Decking Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Profiled Steel Sheet Decking Market.

Available Customizations:

Global Profiled Steel Sheet Decking 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).

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