

India Passive Fire Protection Coatings Market By Type (Intumescent Coatings, Vermiculite Cementitious Coatings), By Technology (Water-Based, Solvent-Based), By End User Industry (Building & Construction, Oil & Gas, Transportation, Others), By Region, Competition, Forecast and Opportunities, 2019-2029

Market Report | 2023-10-03 | 88 pages | TechSci Research

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Report description:

India Passive Fire Protection Coatings Market has reached reach USD billion by 2022 and is anticipated to project robust growth in the forecast period with a CAGR of through 2029. Passive fire protection coating is a crucial layer that plays a vital role in keeping industrial apparatuses safe from fire outbreaks and preventing high-intensity damage. These specialized coatings are meticulously applied to steel structures used in building and construction, enabling them to withstand fire and prevent the steel from reaching critical temperatures that could lead to collapse.

These fire protection coatings find wide application in various settings, including sports stadiums, residential complexes, and commercial constructions. By incorporating different fillers and flame additives, these coatings effectively inhibit the rapid spread of fire flames across surfaces and control the duration of excessive heat.

One notable advantage of fire protection coatings is their ability to suppress the production of gases that are generated during the combustion of materials. This not only curtails the spread of fire but also contributes to improved safety.

The market for fire protection coatings is witnessing significant growth worldwide, driven by factors such as excellent fire performance, strength, lightweight properties, and low installation costs. Moreover, stringent regulations and the increasing demand for fire safety in industries like oil and gas, buildings and construction, automotive, aerospace, electrical and electronics, and marine are further fueling market expansion.

In the context of the India Passive Fire Protection Coatings Market, the rise in the number of fire incidents and the enforcement of stringent government regulations pertaining to fire safety standards serve as potential drivers. Additionally, the booming building and construction industry is expected to support market growth in the forecast period. However, challenges such as the availability of cheaper alternatives and a lack of consumer awareness may hinder market progress. On a positive note, the rising

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disposable income of individuals presents a lucrative opportunity for market expansion.

As industrialization continues to expand, several hazards emerge, prompting a greater focus on safety and the adoption of fire protection coatings. This, coupled with increasing income levels and a surge in construction projects, is poised to drive the Indian market forward.

The Passive Fire Protection Coatings Market is expected to experience substantial growth due to the escalating number of construction projects and evolving fire safety standards. Furthermore, the changing climate and subsequent environmental impact across the country create additional opportunities for the paints and coatings industry across various end-users. The growing demand for fire protection coatings to maintain the integrity of steel structures, coupled with their usage in building and construction, automotive, aerospace, and other industries, are key factors propelling market growth. The expanding automotive industry, driven by the increasing demand for automobiles and rising disposable income, is anticipated to contribute to the market's growth in the coming years.

Key Market Drivers

Growing Demand of Passive Fire Protection Coatings in Transportation Industry

The demand for passive fire protection coatings in India has been steadily increasing over the years. This growth can be attributed to a combination of factors, including stringent safety regulations and a growing emphasis on fire prevention across various industries. Among these sectors, the transportation industry has emerged as a significant driver of the passive fire protection coatings market in India.

In the transportation sector, safety is of paramount importance. Vehicles, infrastructure, and passengers need to be protected from the risks associated with fire incidents. This is where passive fire protection coatings come into play. These coatings play a crucial role in mitigating the spread of fire, providing vital time for evacuation, and minimizing property damage.

Passive fire protection coatings find applications in various areas of the transportation industry. For instance, in the railways, these coatings are applied to train carriages, platforms, and tunnels to enhance fire resistance and prevent the rapid spread of flames. Similarly, in road transportation, passive fire protection coatings are utilized in tunnels, bridges, and other infrastructure to ensure fire safety.

The adoption of passive fire protection coatings in the transportation sector has been driven by government regulations and industry standards. Regulatory bodies, such as the Bureau of Indian Standards (BIS), have established guidelines and specifications for fire safety in transportation infrastructure. Compliance with these regulations necessitates the use of passive fire protection coatings that meet specific fire resistance ratings.

India's transportation infrastructure is currently undergoing significant expansion and modernization. The construction of new railway lines, metro systems, airports, and road networks is on the rise. This surge in infrastructure development has led to an increased demand for passive fire protection coatings. As new structures are built, ensuring fire safety becomes a critical consideration, making passive fire protection coatings an essential component of the construction process.

Furthermore, existing transportation infrastructure is also being retrofitted with fire protection measures. The retrofitting process involves the application of passive fire protection coatings to enhance the fire resistance of buildings, tunnels, bridges, and other assets. This proactive approach to fire safety demonstrates a commitment to protecting both people and infrastructure.

In conclusion, the demand for passive fire protection coatings in the transportation sector in India is driven by a combination of factors, including safety regulations, industry standards, and infrastructure development. The use of these coatings plays a crucial role in ensuring fire safety and protecting lives and assets in the transportation.

Growing Demand of Passive Fire Protection Coatings in Construction Industry

Fire safety is of utmost importance in the building and construction industry, where structures must be meticulously designed and engineered to withstand potential fire incidents. The use of passive fire protection coatings plays a crucial role in preventing the rapid spread of fire by providing exceptional fire resistance and effectively delaying the ignition of combustible materials. These specialized coatings are skillfully applied to various structural elements, such as steel, concrete, and wood, as well as walls, ceilings, and floors. By creating a formidable barrier, they effectively slow down the progress of fire, buying precious time for safe evacuation.

The demand for passive fire protection coatings in the building and construction industry is driven by stringent regulations and

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safety standards. Governments and regulatory bodies around the world enforce comprehensive codes and guidelines to ensure optimal fire safety in buildings. Compliance with these regulations often necessitates the use of passive fire protection coatings to achieve specific fire resistance ratings and ensure the overall safety of occupants.

For instance, let's take a look at the National Building Code of India (NBC), which sets forth comprehensive guidelines for fire safety measures in buildings, including specific requirements for passive fire protection coatings. Adherence to these codes is not only crucial for ensuring the safety of occupants but also for obtaining necessary permits and approvals for construction projects. With the growing awareness about fire safety and the undeniable benefits of passive fire protection coatings, their adoption within the building and construction industry has experienced a significant upsurge. Stakeholders, including architects, engineers, and developers, have come to recognize the paramount importance of integrating effective fire protection measures into building designs.

Moreover, the construction industry as a whole is witnessing a notable shift towards sustainable and energy-efficient practices. In this context, passive fire protection coatings align perfectly with these objectives. Apart from their remarkable fire resistance capabilities, these coatings also offer additional insulation properties, contributing to energy conservation and ultimately reducing the carbon footprint of buildings. By embracing passive fire protection coatings, the industry is not only ensuring the safety of occupants but also making substantial strides towards a more sustainable future.

Growing Demand of Passive Fire Protection Coatings in Oil and Gas Industry

The demand for passive fire protection coatings is on the rise in India, driven by the need for enhanced fire safety measures in industries such as oil and gas. The oil and gas sector, with its high-risk environment and potential for catastrophic fires, has become a significant driver of the passive fire protection coatings market in India.

The oil and gas industry operates under challenging conditions, where the risk of fire incidents is a constant concern. Fires can occur during drilling, refining, storage, and transportation processes, posing a threat to personnel, assets, and the environment. Passive fire protection coatings play a crucial role in mitigating these risks by providing a protective barrier that delays the spread of flames and heat, allowing for safe evacuation and fire containment.

Applications in the oil and gas industry include coatings for structural steel, storage tanks, pipelines, offshore platforms, and more. These coatings provide fire resistance, insulation, and corrosion protection, ensuring the integrity of critical infrastructure and reducing the potential for devastating fires.

Governments and regulatory bodies have implemented stringent safety regulations and standards for the oil and gas industry, making passive fire protection coatings a mandatory requirement. Compliance with these regulations is essential for maintaining operational licenses and ensuring the safety of personnel and the environment.

For instance, in India, the Petroleum and Explosives Safety Organization (PESO) sets guidelines and specifications for fire safety in the oil and gas sector. These regulations require the use of passive fire protection coatings to achieve specific fire ratings and ensure the effective containment of fire incidents.

India's oil and gas industry has been experiencing steady growth with increased exploration, production, and refining activities. This growth, coupled with the need for enhanced safety measures, has led to a rising demand for passive fire protection coatings in the sector. As new facilities are constructed and existing infrastructure is upgraded, the installation of fire-resistant coatings becomes an integral part of the design and construction process.

Moreover, India's focus on expanding its oil and gas infrastructure, including pipelines and storage terminals, further drives the demand for passive fire protection coatings. These coatings provide crucial fire resistance to ensure the safe operation and transportation of flammable substances. The continuous advancements in passive fire protection technologies also contribute to the growing popularity of these coatings in the industry.

In summary, the increasing demand for passive fire protection coatings in India's oil and gas sector is a result of the industry's commitment to enhancing fire safety measures. With stringent regulations and standards, the adoption of these coatings has become mandatory to ensure the protection of personnel, assets, and the environment. As the industry continues to grow and expand its infrastructure, the need for reliable and effective passive fire protection coatings will only continue to rise.

Key Market Challenges

Volatility in Prices of Raw Materials

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Volatility in raw material prices can lead to increased production costs for manufacturers of passive fire protection coatings. This can occur when the prices of key raw materials, such as fire-retardant additives or binders, experience sudden fluctuations. As a result, manufacturers may find themselves in a challenging position where they have to decide whether to absorb the additional costs or pass them on to consumers. This decision can have implications for the affordability and accessibility of these coatings, potentially making them more expensive for end-users.

Fluctuating raw material prices not only impact the financial aspects of passive fire protection coatings manufacturers but also their overall profitability and competitiveness in the market. Sudden price hikes in key raw materials can significantly reduce profit margins, eroding the competitive advantage of companies operating in this industry. The unpredictability of raw material prices further complicates matters, making it difficult for manufacturers to effectively plan and forecast their production costs. Consequently, they may need to adjust their long-term contracts and procurement strategies frequently to account for price volatility. This adds complexity to the supply chain and requires manufacturers to constantly monitor and manage their raw material inventory.

Changes in raw material prices can also have implications for the quality and consistency of passive fire protection coatings. When faced with rising costs, manufacturers may be compelled to substitute or modify certain raw materials in order to manage expenses. However, these substitutions or modifications can potentially impact the performance and fire resistance properties of the coatings. This creates a challenge for manufacturers to strike a balance between cost management and maintaining the desired quality and effectiveness of their products.

In summary, the volatility of raw material prices poses multifaceted challenges for manufacturers of passive fire protection coatings. These challenges range from cost management and profitability to supply chain complexity and maintaining product quality. Adapting to these challenges requires careful strategic planning and a thorough understanding of market dynamics.

Key Market Trends

Growing Use of Thin-Film Intumescent Coatings

The use of thin-film intumescent coatings significantly enhances fire safety measures in buildings and infrastructure. These coatings, consisting of a thin layer that expands when exposed to heat, create a protective barrier that helps prevent the rapid spread of flames and heat. By offering valuable time for evacuation and reducing potential damage, they play a crucial role in safeguarding lives and property.

The growing use of thin-film intumescent coatings helps building owners and developers comply with stringent fire safety regulations and codes. Regulatory bodies in India, such as the Bureau of Indian Standards (BIS), have set specific requirements for fire protection in buildings, recognizing the importance of effective fire safety measures. The adoption of these coatings not only facilitates compliance but also demonstrates a commitment to ensuring the well-being of occupants.

Thin-film intumescent coatings offer the advantage of providing fire protection while maintaining the aesthetic appeal of surfaces. These coatings can be customized to match various colors and finishes, seamlessly integrating with the design and architecture of structures. By blending functionality with visual appeal, they ensure that fire safety measures do not compromise the overall aesthetics and attractiveness of buildings.

Furthermore, thin-film intumescent coatings can offer cost-effective fire protection solutions. Compared to other fire protection measures, such as fire-resistant cladding or structural modifications, these coatings often require less material and installation time. This not only reduces the overall project cost but also minimizes disruption during construction or retrofitting. Building owners can benefit from potential cost savings without compromising on the effectiveness of fire protection measures.

Additionally, thin-film intumescent coatings are designed to be durable and long-lasting. They are engineered to withstand harsh environmental conditions, including moisture, UV radiation, and corrosion. This ensures that the fire protection measures remain effective over an extended period, providing reliable fire safety without the need for frequent maintenance or replacement.

By considering these advantages and the comprehensive protection offered, thin-film intumescent coatings have become a preferred choice for enhancing fire safety in diverse building and infrastructure projects.

Segmental Insights

Technology Insights

Based on the category of technology, the water-based segment emerged as the dominant player in the Indian market for Passive Fire Protection Coatings in 2022. Water-based coatings are widely recognized as being more environmentally friendly and safer for

human health compared to solvent-based coatings. This is primarily due to their lower levels of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs), which align with increasing environmental regulations and promote a healthier living environment.

In India, where stringent environmental and safety regulations are implemented, water-based coatings are even more relevant. The country has seen a growing emphasis on the use of coatings with low VOC content, as encouraged or mandated by government and industry standards. This preference for water-based options not only complies with regulations but also contributes to the overall well-being of the population.

Beyond their environmental benefits, water-based coatings have found significant application in passive fire protection for indoor settings. This includes commercial buildings, residential complexes, and industrial facilities, where the risk of fire incidents is higher. The demand for effective indoor fire protection solutions has fueled the popularity of water-based coatings in these sectors.

One of the key advantages of water-based coatings in fire protection is their ability to act as a cooling agent when exposed to fire. The water content within these coatings helps reduce the surface temperature of the substrate, providing both fire resistance and contributing to fire risk reduction. This characteristic makes water-based coatings a preferred choice in safety-conscious construction projects, where the well-being of occupants is of utmost concern.

By opting for water-based coatings, not only are the environmental and safety aspects addressed, but also the overall fire protection requirements in indoor settings. This comprehensive approach ensures that both the well-being of individuals and compliance with regulations are achieved, making water-based coatings the preferred and responsible choice in various industries.

End User Industry Insights

The building & construction segment is projected to experience rapid growth during the forecast period. India, with its rapid urbanization, is witnessing a remarkable surge in construction activities across the country. As cities continue to expand and high-rise buildings become increasingly prevalent, the importance of passive fire protection coatings cannot be overstated. These coatings play a crucial role in safeguarding lives and protecting valuable properties from the devastating effects of fire.

The urban development landscape in India is being transformed by the construction of high-rise buildings, commercial complexes, and residential towers. These architectural marvels contribute significantly to the ever-evolving urban skyline. However, with their grandeur comes the responsibility of ensuring robust fire safety measures. Passive fire protection coatings, being an integral part of these measures, are essential to meet the stringent safety standards set forth by regulatory bodies.

The demand for passive fire protection coatings has been fueled by an increased awareness of fire safety among building owners, developers, and occupants. This growing awareness has underscored the need for proactive measures to prevent fire-related incidents. Furthermore, the liability concerns and potential legal repercussions associated with inadequate fire safety measures have further amplified the urgency to adopt effective passive fire protection solutions.

By prioritizing the implementation of passive fire protection coatings, India is taking a proactive approach to ensure the safety and well-being of its urban communities. These coatings not only offer invaluable protection but also contribute to the overall resilience and sustainability of the built environment.

Regional Insights

West India emerged as the dominant player in the India Passive Fire Protection Coatings market in 2022, holding the largest market share in terms of value. West India, comprising of vibrant cities like Mumbai, Pune, Ahmedabad, and Surat, serves as a bustling hub for industrial and commercial activities. These dynamic urban centers have witnessed a surge in construction projects, ranging from towering high-rise buildings to sprawling manufacturing facilities and commercial complexes. With the goal of ensuring utmost safety and compliance with regulations, these structures necessitate the implementation of passive fire protection coatings.

The western region of India has undergone a remarkable transformation with rapid urbanization and an impressive surge in infrastructure development. The construction of contemporary buildings, state-of-the-art transportation hubs, and ambitious infrastructure projects has become a hallmark of this region. To ensure the highest standards of fire safety, stringent measures are in place, and the utilization of passive fire protection coatings has emerged as a pivotal component in these endeavors.

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Key Market Players

Tremco Construction Products Group

JPSC Solutions Pvt. Ltd.

Anantco Enterprises Pvt. Ltd.

Lanexis Enterprises (P) Ltd.

PFC Solutions LLP

Promat India

Falcon Acoustics and Passive Fire Solutions Pvt. Ltd.

Report Scope:

In this report, the India Passive Fire Protection Coatings Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

□ India Passive Fire Protection Coatings Market, By Type:

o Intumescent Coatings

o Vermiculite Cementitious Coatings

□ India Passive Fire Protection Coatings Market, By Technology:

o Water-Based

o Solvent-Based

□ India Passive Fire Protection Coatings Market, By End User Industry:

o Building & Construction

o Oil & Gas

o Transportation

o Others

□ India Passive Fire Protection Coatings Market, By Region:

o North India

o East India

o West India

o South India

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Passive Fire Protection Coatings Market.

Available Customizations:

India Passive Fire Protection Coatings Market report with the given market data, Tech Sci 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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