

Geosynthetics Market Assessment, By Raw Materials [Polyethylene, Polypropylene, Polystyrene, Polyesters, Others], By Type [Geogrids, Geotextile, Geomembranes, Geosynthetic Clay Liners, Geofoam, Geonets, Geocells, Others], By Application [Road & Pavements, Rail track, Landfills, Drainage systems, Embankment foundations, Marine Structures, Dams, Canals, and Others], By Region, Opportunities, and Forecast, 2016-2030F

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Abstracts

Global Geosynthetics Market size was valued at USD 12.36 billion in 2022, which is expected to grow to USD 20.3 billion in 2030 with a CAGR of 6.4% during the forecast period between 2023 and 2030. Geosynthetics offer a cost-effective alternative to traditional construction materials, driving their widespread use. By minimizing resource usage and reducing labour costs, they contribute to substantial long-term savings, making them an attractive choice for various construction projects. Infrastructure development projects necessitate the use of geosynthetics for applications like roads, railways, airports, and more. These materials provide essential reinforcement, erosion control, and drainage solutions, making them indispensable in the construction industry. In regards with water management and environmental protection, geosynthetics play a crucial role as they find extensive application in reservoirs, dams, coastal protection, and landfill liners, effectively preventing soil erosion and managing water resources efficiently.

In addition to civil engineering functions, geosynthetics serve the mining and agriculture sectors, enhancing operational efficiency and sustainability. Applications such as mine



tailings management, soil stabilization, water retention, and erosion control showcase their versatility and significance in these industries. Finally, stringent environmental regulations and a heightened focus on sustainability are propelling the use of geosynthetics. They help in reducing environmental impact, managing waste, and promoting eco-friendly construction practices.

Rising Investments in Water Management to Drive the Demand for Geosynthetics

Geosynthetics plays an important role in several water management solutions. Firstly, in reservoirs and dams, geosynthetics are employed to enhance structural integrity and stability. Moreover, geosynthetic liners act as impermeable barriers, preventing water leakage and ensuring optimal water storage, therefore utilized in Coastal protection, given the increasing vulnerability of coastlines to erosion and rising sea levels. Furthermore, geosynthetics aid in controlling sedimentation, a major concern in water management.

For instance, in March 2023, India committed over USD 240 billion in investments towards improving its water sector. Concurrently, it is executing the most extensive dam rehabilitation initiative globally, complemented by endeavours to revitalize groundwater levels. Similarly, the rising investments towards water management by other developing countries drives the demand for geosynthetics globally.

Strong Developments of Railways and Roadways to Heighten the Demand for Geosynthetics

In road construction, geosynthetics are employed for various applications, such as reinforcing weak soils, improving load-bearing capacity, controlling ground movement and enhances the lifespan of the road but also reduces maintenance costs over time. Similarly, in the railway sector, geosynthetics play a crucial role in track stabilization, embankment reinforcement, and slope protection.

For instance, over the upcoming decade to fifteen years, an investment of USD 324 billion will be dedicated to enhancing roads, railways, and waterways in Germany. The 'Digital Rail Germany' initiative, introduced in January 2020, aims to elevate the efficiency of the German rail network by a significant margin, potentially reaching a performance increase of up to 35%. Huge Projects of improving roads and railways across several countries to improve the requirement of geosynthetics globally.

Strong Demand from Agriculture Sector to Increase the Requirement for Geosynthetics



Geosynthetics are indispensable in modern agriculture, profoundly influencing efficiency and sustainability. These engineered materials offer diverse applications crucial for managing soil, optimizing water usage, and enhancing agricultural productivity. Geosynthetics like geotextiles and geogrids provide essential soil stabilization, preventing erosion and enabling a stable base for crops. They effectively address erosion challenges, preserving topsoil and its fertility. Furthermore, these materials aid in water retention and drainage systems, ensuring optimal moisture levels for crops while preventing waterlogging.

As per the United States Department of Agriculture (USDA), an anticipated 1.3 billion individuals might face food insecurity in 2022, reflecting a 10% rise from 2021. Enhancing crop productivity is imperative to mitigate this critical circumstance. The global demand for geosynthetics is increasing as it elevates crop productivity and sustainability.

Increasing Offshore Projects to Improve Geosynthetics Demand

Geosynthetics are widely employed in marine structures to enhance soil stability, drainage, and erosion control in quay walls, jetties, and port expansion projects. They contribute to the longevity and safety of these critical components. Additionally, geosynthetics find application in underwater revetments and submerged structures, providing protection against scour and erosion, reinforcing the seabed, and maintaining the stability of underwater installations.

For instance, China's inaugural offshore carbon storage endeavour, led by the China National Offshore Oil Corporation (CNOOC), has embarked on operations in June 2023. This pioneering project aims to store over 1.5 million tonnes of carbon dioxide (CO2), equivalent to planting approximately 14 million trees. Simultaneously, China has initiated the construction of its foremost large-scale offshore wind turbine initiative, boasting a capacity of 16 megawatts, during February 2023. These ambitious offshore ventures in several countries are raising geosynthetics usage globally.

Impact of COVID-19

The COVID-19 pandemic significantly disrupted global supply chains related to the production and distribution of geosynthetics and its raw materials. These disruptions resulted from factory closures and transportation restrictions, causing delays and shortages in the supply chain for upstream polymers. The lockdowns and economic



slowdowns further amplified the problem by causing a notable reduction in demand across various industries such as construction, marine structures, and mining. Furthermore, the geosynthetics market also faced price fluctuations during the pandemic due to the disruptions in both supply and demand dynamics.

Key Outlook

The improvements in the advanced extraction process and an increase in mining activities in South America provide an opportunity for growth for geosynthetics.

The versatile application of geosynthetics in waste management, as they are used in landfills and wastewater mitigation, strengthens the global demand for engineered material.

Key Players Landscape and Outlook

Prominent geosynthetics manufacturers strategically pursue acquisition initiatives to fortify and broaden their market foothold. These endeavors are designed to augment their organizational capabilities, leverage synergies, and capitalize on emerging growth opportunities within the geosynthetics industry.

For instance, in June 2021, Solmax has successfully concluded its acquisition of Propex, a move that significantly bolsters its standing as the foremost global geosynthetics provider.



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- *Companies mentioned above DO NOT hold any order as per market share and can be



changed as per information available during research work.

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