



Use of Textile in Automotive Industry

Samin Kalo*

School of Textile Science and Engineering, Tiangong University, China

*Corresponding author: Samin Kalo, School of Textile Science and Engineering, Tiangong University, China; E-mail: samikalo121@gmail.com

Received date: 22 March, 2023, Manuscript No. JFTTE-23-99157;

Editor assigned date: 24 March, 2023, PreQC No. JFTTE-23-99157(PQ);

Reviewed date: 15 April, 2023, QC.No JFTTE-23-99157;

Revised date: 22 April, 2023, Manuscript No. JFTTE-23-99157(R);

Published date: 28 April, 2023, DOI: 10.4172/2329-9568.1000297.

Description

The automotive industry is in innovation, with constant advancements in technology shaping the vehicles we drive. From safety features to performance enhancements, every component plays a important role. One area that has witnessed a significant transformation is the use of textiles in automotive applications. Gone are the days when textiles were limited to upholstery alone. Today, they have emerged as key players in improving comfort, safety, and overall performance. Weight reduction is a constant pursuit in the automotive industry due to its direct impact on fuel efficiency and emissions. Textiles have proven to be game-changers in this regard. Traditional materials such as steel and plastic have given way to high-performance textiles, which offer comparable strength with significantly reduced weight. Lightweight textiles such as carbon fiber, aramid fibers, and glass fiber-reinforced composites are now used extensively in the production of vehicle interiors, body panels, and structural components. This shift towards textiles not only reduces the overall weight of the vehicle but also enhances its performance and handling capabilities.

Safety is paramount in automotive design, and textiles have made substantial contributions to this aspect as well. Seat belts, one of the most important safety features, rely heavily on textiles. The development of high-tensile-strength fibers and webbing materials has significantly improved the reliability and effectiveness of seat belts, ensuring optimal passenger safety during collisions. In addition to seat belts, textiles are also used in airbags, side curtains, and headliners,

providing protection and reducing the risk of injury in the event of an accident.

Comfort and aesthetics: Interior comfort and aesthetics are essential factors for automotive manufacturers and consumers alike. Textiles offer a wide range of options in terms of color, texture, and design, enabling the producing of visually appealing and comfortable interiors. Fabrics with superior moisture-wicking and breathable properties enhance the driving experience by maintaining a pleasant environment within the vehicle. Furthermore, the use of textiles in seats, headrests, and door panels provides a softer touch and improved ergonomics, adding to the overall comfort and luxury of the vehicle.

Acoustic and thermal insulation: Textiles also play a significant role in improving the acoustic and thermal insulation of vehicles. Sound-damping textiles are used to reduce noise levels inside the cabin by absorbing or blocking unwanted sounds. They are strategically placed in areas such as carpets, headliners, and door panels to produce a quieter and more enjoyable driving experience. Similarly, thermal insulation textiles help regulate interior temperatures by preventing heat transfer from the engine, road, or external environment. This contributes to increased energy efficiency and reduces the workload on heating and cooling systems.

Sustainability: With the growing emphasis on sustainability, automotive manufacturers are actively seeking eco-friendly alternatives. Textiles have proven to be a viable solution in this context as well. Recycled materials, natural fibers, and bio-based textiles are being increasingly used in automotive applications, reducing the reliance on non-renewable resources and minimizing the environmental impact. Additionally, the lightweight nature of textiles leads to lower fuel consumption and carbon emissions, contributing to a greener automotive industry.

Conclusion

The automotive industry has witnessed a remarkable revolution with the integration of textiles in various applications. From lightweight construction to enhanced safety, comfort, and sustainability, textiles have proven their worth. The ongoing research and development in this field promise further advancements, including smart textiles with embedded sensors and interactive features. As we move towards a future of electric and autonomous vehicles, textiles will continue to play an integral role in shaping the automotive landscape, providing innovative solutions that cater to the evolving needs.

Citation: Kalo S (2023) Use of Textile in Automotive Industry. J Fashion Technol Textile 11:2.