IHS AUTOMOTIVE

The Interior Textiles Report

SupplierInsight

June 2016

supplierbusiness.com

SECTORAL REPORT

Interiors

Contents

Tables

Figures

CHAPTER ONE

Report

Textiles beyond apparels

The use of textiles is not just limited to apparels; the transition in the socio-economic structure of environment has enlarged the use of textiles in various applications, including automotive. Unlike apparels, automobile textiles carry a different definition and they are known as ***technical textiles***. Technical textiles are textile materials produced for their mechanical traits and performance, rather than their aesthetic and appealing properties.

Automobile textiles, which are non-apparel textiles, are widely used in different product categories of vehicles, including interior trims, safety devices such as seatbelts and airbags, carpets, filters, battery separators, hood liners, hoses, and belt reinforcement. Their use is not only limited to enhanced automotive aesthetics; it is also widely utilised to provide comfort and safety. In addition, automobile textiles have found their use in applications such as design solutions to engineering problems in the form of composites, tire reinforcement, sound insulation, and vibration control. Both woven and non-woven fabrics are deployed in transport textiles because of certain advantages served by them.

Table 1: Classification of automotive textiles and their applications

Fibres used	Application areas	Characteristics
Nylon, polyester, polypropylene, wool, cotton, leather	Seat covers	Abrasion and ultraviolet (UV) resistance, attractive design and texture
Polyester, nylon filament yarn	Seatbelts	Tensile strength, abrasion UV resistance
Nylon, polyester, polypropylene	Carpets	Fade resistance, high durability, tensile strength, high abrasion resistance, low inflammability, mouldability
Nylon 6, 6; nylon 4, 6	Airbags	Resistance to high-temperature inflation gases, durability to storage over many years, tear strength
Polypropylene, nylon polyester	Door trims	Abrasion and UV resistance, attractive design and texture, structural rigidity
Polyester blends	Trunk liners	Storage, floor rigidity, abrasion resistance
Polyester, wool, nylon, acrylic	Upholstery	Abrasion and UV resistance, attractive design and texture
Polyester; nylon 6 and 6, 6; rayon; aramid	Tire cords, fabrics	High tensile strength, adhesion to rubber, fatigue resistance, impact resistance
HT polyester, aramid	Rubber reinforcements (hoses, belts, air springs)	Heat resistance, tensile strength, dimensional stability, adhesion to rubber, chemical resistance

Table 2: Definitions

ABS	Acrylonitrile-butadiene-styrene
GRU	Glass-reinforced urethane
Hardboard	Wood fibre–based
Olefin polymer	A synthetic fibre made from a polyolefin, such as polypropylene or polyethylene
PC/ABS	Polycarbonate and acrylonitrile-butadiene-styrene
Powdered metal	Finely divided particles of a metal
PP	Polypropylene
PP/ABS	Polypropylene and acrylonitrile-butadiene-styrene
PP/flax	A blend of primary flax fibre with polypropylene in a non-woven (felt) mat, which is then compression-moulded to form a 3-D flax fibre composite–based part
PP/natural fibre	A blend of polypropylene and natural fibre composites
PP/wood fibre	Polypropylene and a blend of wood or natural fibres and/or thermoplastics
PU	Polyurethane
PUR	Polyurethane-backed
PUR/natural fibre	A blend of polyurethane and natural fibre composites
Wood fibre	A blend of wood or natural fibres, and/or thermoplastics
PBS/hemp	Polybutylene succinate, a thermoplastic polymer resin of the polyester family, blended with hemp
PP/ethylene	Polypropylene and a blend of ethylene

Table 3: Processes

Cast skin	Cover is formed through the use of rotating mould
Compression moulding	A one-step compression thermoform process that creates a substrate and cover material in one step
Dielectric	Cover material is bonded via electric wave generation
Injection moulding	Molten plastic is forced into a die to form part/cover material
Low-pressure moulding	A one-step low-pressure injection moulding process, which allows cover material to be placed in mould and fused to the substrate
Slush cast	A variation of permanent mould casting that is used to produce hollow parts
Spray urethane	Urethane is sprayed into a hot tool and then cooled to form skin; retainer and foam are added in the second step
Vacuum die-cast	A method for die-casting using a vacuum die-casting machine
Vacuum formation	Cover material is drawn over part via a vacuum process
Foam lamination	Cut and sewn with foam lamination
Foil lamination	Cut and sewn with foil lamination
Hand wrapped	Hand wrapped (aka leather wrapped): leather cover is wrapped around the door trim panel
Lamination	Cut and sewn with lamination
Slush cast	A variation of permanent mould casting that is used to produce hollow parts

Note: Door trim panel forecast as mentioned in the report is as of January 2016 and is subject to change.

Future cars to be decked up with more textiles

Technical textiles form a key part of a car and their use is growing day by day. Textiles determine the aesthetic aspect of a car, and hence have become a key selling point when customers demand for vehicle comfort and style. While some textiles are prominently visible to everyone, others are inconspicuous and yet highly effective such as tire cords, hoses, air and fuel filters, noise and vibration dampening, and body panel reinforcements. They are now being increasingly used because of their contribution towards reduction in overall weight (compared with alternative materials like plastics or wood), comfort, attractive design (improved look of textile surfaces such as seats and roof liners), safety, and recyclability.

Barring a global recession, prospects in the automotive sector look exceedingly bright for textile makers. There will be three big trends that will reverberate all the way down the supply chain and make big winners – and possibly a few losers – in the future automotive textile industry. The first trend is the continuation of more stringent regulatory standards that influence OEMs in many aspects, ranging from design to content. To this end, suppliers have improved their offerings by enabling automakers to lightweight their vehicles. While steel and aluminium have fought, or continue to fight their battle for material supremacy, on the sidelines, we have seen the increased use of plastics, especially composites. This comes alongside safety standards that have been regulated by the government or mandated by consumers, which is the counter-force to making vehicles lighter, and hence adding more compounds or resins that are lightweight.

The second key trend outlined is mass customisation. With constantly changing consumer demand, automakers have transitioned to mega-platforms with modular production systems that can support up to 10 separate – but related – vehicle families. These can give automakers the ability to roll out successive iterations and variations of contemporary models not only faster, but also more targeted to consumer preferences and needs. With urbanisation seen as a third key trend, growing urban population will have a profound impact on auto buyers and sellers, implying global transportation needs by 2050 are likely to double. All these factors will collectively influence demand for technical textiles.

Limited resources, rising raw material prices driving demand for technical textiles

Car interiors have become more important in recent years for a variety of reasons. People spend more time in their cars travelling longer distances, and hence they demand for an enhanced look and feel, which give them a pleasant and soft touch. In this regard, one of the senses getting a lot of attention in automotive interiors is touch. Apart from offering decoration and soft touch to the overall vehicle interiors, textiles are also used in more functional applications. For instance, carpets and textile headliners not only contribute to the overall comfort and furnishings of the interior, they also play an important part in the damping of sound and vibration. In tires, textile contributes to the performance, road handling, and tire durability.

To counter rising raw material prices and make best use of scanty resources, carmakers are committed to optimising vehicle's weight using textiles. OEMs are increasingly investing in developing lightweight materials for their mainstream passenger car models, with technologies initially used in low-volume, high-performance, and high-value cars gradually being developed for more mainstream models. New manufacturing and design techniques make the use of these technologies more practical and cost-effective in a volume environment. Textiles provide important contributions and their applications are becoming more numerous and surprising.

Factors predominantly determine increased demand for automotive textiles

Increased demand for changing car interiors

Growing customer demand for cabin comfort, safety, and convenience will collectively influence growth in the automotive interior components market. Presently, car interior designs are largely influenced by consumers who place greater attention to comfort. Consumers these days demand for more comfortable seats that do not cause fatigue, and minimise noise from within and outside a car.

Interestingly, there has been a demand for premium look in a car as a result; appeal for luxury cars in terms of interior and seating style is filtering down to cost-efficient segments. All these changes have propelled a greater level of demand for enhanced textiles. For instance,