

2nd Edition



# Automotive Nonwovens Market Report

Solid gains through materials substitution



Adrian Wilson

From the publishers of  
**mobileTex**

# Automotive Nonwovens

Solid gains through materials substitution

2nd edition March 2017

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By Adrian Wilson

Editor: Geoff Fisher

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# Introduction

It will quickly become evident that there have been tremendous changes to the global structure of the automotive textiles industry since the first edition of this report was published in 2014.

Over the past three years there has been unprecedented consolidation among manufacturers of both fabrics and finished components for automotive interiors, not least among the Tier 1 suppliers to the original equipment manufacturers (OEMs).

Among the most notable changes are:

- Johnson Controls merged its automotive interiors business with China's Yanfeng to form a new company, Yanfeng Automotive Interiors;
- Visteon broke up its Interiors business, with the major share of it also being taken over by Yanfeng as Yanfeng Automotive Trim Systems;
- following the above two transactions, Yanfeng has quickly risen to sixth place in the top 10 of Tier 1 automotive suppliers with textile activities, based on pro forma 2015 sales – a first for a Chinese majority-owned company;
- the spin-off of the automotive seating and interiors business of Johnson Controls to create Adient was completed in October 2016;
- Magna International sold its automotive interiors business to Grupo Antolin;
- ZF Friedrichshafen acquired TRW Automotive;
- Italy's Adler Plastics took full ownership of the HP Pelzer Group;
- Aunde acquired FS Fehrer.

Table 1 shows how these changes have altered the rankings by turnover of the leading top 16 companies, with certain rounded estimates where no detailed financial figure is provided.

The June 2016 merger of Michigan, USA-based Key Safety Systems with China's Ningbo Joyson Electronic is not included in this Table, but also creates a new global leader with annual sales of more than US\$3bn and 20,000 employees worldwide; this would rank it in 12th place in 2016.

What will also become clear from considering the performances of many of the leading companies profiled in this report is that while turnovers have returned to levels comparable to before the global recession of 2008-09, much of the profitability in supplying to the automotive OEMs has been driven upwards and is now being retained with the car-makers themselves.

The key issue that has driven such change was initially the ongoing shift in mass vehicle manufacturing centres from the US, Europe and Japan to developing countries, notably China and Asia-Pacific, and to lower cost regions within Europe.

Between 2007 and 2009, automotive industry production in North America and Europe experienced the steepest peak-to-trough declines in history. In North America, vehicle

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Integrated light-emitting diode (LED) lighting, heating fabrics and position-sensing materials are among products being introduced as a vehicle's interior assumes ever greater importance.

Faurecia is already incorporating sensors into seating with its new Active Wellness system, which goes beyond detecting the physical and mental status of drivers and/or occupants and attempts to provide countermeasures via massage.

The system contains piezoelectric sensors to measure heart rate and breathing rhythms, and uses this information to apply a specific massage pattern, combined with heating or cooling adjustments to the seat's ventilation system, either to relax or re-energise the driver.

In May 2016, Berkeley, California, USA-based BeBop Sensors introduced embedded smart fabric car seat sensors with intelligent car occupant-sensing technology for safer airbag deployment.

BeBop's automotive occupant classification system continuously takes full seat pressure images in real-time, detecting pressure information and movement from the entire seat for all aspects of physical contact between the occupant and the seat.

While a world of fully autonomous cars remains some way off, more than half of all new cars sold in the UK already have autonomous systems, according to analysis by the Society of Motor Manufacturers and Traders. The majority of new cars sold in 2015 were equipped with collision warning systems, with four in 10 featuring autonomous emergency braking.

With a global reputation resting on vehicle safety, Volvo is naturally keen to lead in this field and is planning to run self-driving versions of its family 4x4s on roads around London, UK, in 2017. Volvo's UK test, called Drive Me London, will go a step further than other programmes by using real families driving autonomous cars on public roads.

## **AUTOMOTIVE NONWOVENS**

Nonwovens are expanding rapidly in the automotive sector as consumers demand greater comfort and safety, and automakers and their component suppliers seek to decrease costs by reducing the weight of vehicles, as well as lowering fuel consumption and CO<sub>2</sub> emissions.

Although woven and knitted fabrics continue to dominate the total amount of textiles used within the automotive sector, nonwovens are becoming increasingly attractive to designers owing to their low weight and lower cost, as well as other key advantages, such as sound insulation.

Nonwovens are employed in upholstery and headliners, moulded parts and insulation, carpet and floor mats, where needlepunched materials dominate. A wider selection of nonwovens is to be found in automotive filtration and belts, tubes and other high performance components.

The use of natural fibre nonwovens – often as the reinforcing substrate in composite parts – is also increasing significantly.

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Introduction

# Adient

**Adient plc, 25-28 North Wall Quay IFSC, Dublin 1, Ireland. Tel: +353 414 220 8900. Web: [www.adient.com](http://www.adient.com)**

**Adient US LLC, 49200 Halyard Drive, Plymouth, MI 48170, USA. Tel: +1 734 254 5000. Fax: +1 734 254 5222. Web: [www.adient.com](http://www.adient.com)**

With more than US\$17bn in annual sales, Adient has emerged as the leading global automotive seating supplier from the spin-off of the Johnson Controls Automotive Experience (AE) business as an independent, publicly traded company on 31 October 2016.

This comes as the Johnson Controls name is consigned to the history books as an automotive supplier: earlier, in July 2015, the company announced it would spin off its automotive interiors business – not including its separate seating business – into a joint venture with Yanfeng Automotive Trim Systems, to be named Yanfeng Automotive Interiors (YFAI).

A year earlier, in July 2014, Johnson Controls had announced the formation of a new fabrics joint venture – Anhui New Nangang Johnson Controls Automotive Trim – based in Huainan City, Anhui Province, China. The partners in this joint venture are SAIC and Anhui Yansheng Automotive Trim.

The business provides Chinese automakers with a range of services from fabric design, engineering and manufacturing to trim products. The joint venture has warp and circular knitting and weaving technologies, and provides both fabrics and finished seat trim covers.

In addition, in April 2014, Johnson Controls completed the sale of its headliner and sun visor production business to Atlas Holdings, a private equity firm based in Greenwich, Connecticut, USA, and made a cash payment of US\$54m to Atlas to fund future operational improvement initiatives.

Finally, in January 2016, Johnson Controls further announced that its remaining AE business – primarily based on seating – was to be renamed Adient and spun-off into a new publicly-traded company by October 2016.

Adient has since acquired the 10-storey, 15,200 m<sup>2</sup> Marquette Building in Detroit's historic financial district, which is being renovated to establish its global headquarters.

The company will be consolidating corporate functions from various Michigan locations to the downtown Detroit building once renovations are completed by the end of 2018. In addition, Adient intends to refurbish its technology and engineering centre in Plymouth, Michigan, USA.

With 75,000 employees operating in 230 manufacturing/assembly plants in 33 countries worldwide, the company has also opened a new corporate office in Shanghai, China, as

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Adient

# Autoneum

**Autoneum Holding Ltd, Schlosstalstrasse 43, Postfach, CH-8406 Winterthur, Switzerland. Tel: +41 52 244 8282. Fax: +41 52 244 8387. Email: info@autoneum.com Web: www.autoneum.com**

Autoneum became a listed company in May 2011, when it was split from the Winterthur, Switzerland-headquartered Rieter Group.

As a global technology leader in acoustic and thermal management solutions for vehicles, it is a leading partner to the major light vehicle and heavy truck manufacturers worldwide, with a focus on cost-effective solutions for noise reduction and thermal management to increase vehicle comfort and value.

**Table 26: Autoneum, product range for light vehicles, 2015**

Engine bay	Interior trim	Interior floor	Trunk	Underbody	Body treatments
Engine covers	Parcel shelves	Inner dashes	Trunk side trims	Underbody shields	Dampers/stiffeners
Hood liners	Other interior trim parts	Nonwoven carpets	Trunk flooring	Floor pans	Sealants
Outer dashes		Tufted carpets	Other trunk trim parts	Heatshields	Other acoustic parts
Water box shields		Other flooring	Spacers	Wheelhouse outer liners	
		Floor insulators			
		Floor mats			
		Spacers/crash pads			

Source: Autoneum

## Development

The Rieter Group was founded as far back as 1795, initially as a spices and cotton trading company, later moving into textile manufacturing and engineering. Until the establishment of Autoneum it consisted of two divisions – Textile Systems and Automotive Systems.

Textile Systems is a leading supplier of machines and integrated manufacturing lines for the production of filament and staple yarns, and also one of the largest suppliers of technology components and services for these market segments, with sales in 2015 of €953m.

Rieter produced its first textile machine in 1810, unable to purchase spare parts for its British textile machinery following a blockade imposed by Napoleon.

The history of Rieter Automotive Systems and Autoneum is a little more recent, being initiated by Rieter’s 1984 acquisition of Unikeller of Switzerland, a specialist in noise control and thermal insulation systems for the automotive industry. Following two further

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Autoneum

# Toray Industries

**Toray Industries Inc, Nihonhashi Mitsui Tower, 2-2-1 Nihonbashi-Muromachi, Chuo-ku, Tokyo, 103-8666, Japan. Tel: +81 3 3245 5111. Fax: +81 3 3245 5054. Web: www.toray.com**

Since its formation in 1926, the US\$16.7bn Toray Group, headquartered in Tokyo, Japan, has kept expanding through business development in wide-ranging areas.

Starting from rayon (viscose) filament production, Toray then developed products in polyester, polypropylene, polyamide and acrylic fibres, before expanding into many other areas including high-performance films, engineering plastic resins, carbon fibre composite materials, electronics and information-related products, high-performance membranes, pharmaceuticals and medical products.

The company and its overseas subsidiaries and affiliates employ some 46,000 people globally and operations are categorised into seven business segments:

- Fibers & Textiles;
- Plastics & Chemicals;
- IT-related Products;
- Carbon Fiber Composite Materials;
- Environment & Engineering;
- Life Science;
- Others.

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(¥bn)	2015	2016
Fibers & Textiles	856.7	892.0
Plastics & Chemicals	496.4	521.2
IT-related Products	248.0	251.1
Carbon Fiber Composite Materials	158.4	186.2
Environment & Engineering	180.0	183.3
Life Science	57.0	55.8
Others	14.3	14.7
<b>Total</b>	<b>2,010.7</b>	<b>2,104.4</b>

year ending 31 March  
Source: Toray Industries

The four key business fields in which the group is currently chiefly chasing growth are:

- the environment, water-related and energy;

Toray Industries

# Glossary

## **AA&E**

Aunde Achter & Ebels

## **A-B-C pillar**

The A-pillar is a name applied by car stylists and enthusiasts to the shaft of material that supports the windshield (windscreen) on either of the windshield frame sides. By denoting this structural member as the A-pillar, and each successive vertical support after a successive letter in the alphabet (B-pillar, C-pillar, etc.), this naming scheme allows those interested in car design to have points of reference when discussing design elements. In the most usual configuration, the C-pillar supports the rear window.

## **ABL**

active buckle lifter

## **ABS**

anti-lock braking system

## **ACC**

Advanced Composite Center (Toray Industries)

## **ACR**

active control retractor

## **ACRS**

air cushion restraint system

## **ACU**

airbag control unit

## **AE**

Automotive Experience (Johnson Controls)

## **AFBG**

Aramid Fibers Business Group (Teijin)

## **AFN**

Advanced Fiber Nonwovens (Hollingsworth & Vose)

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