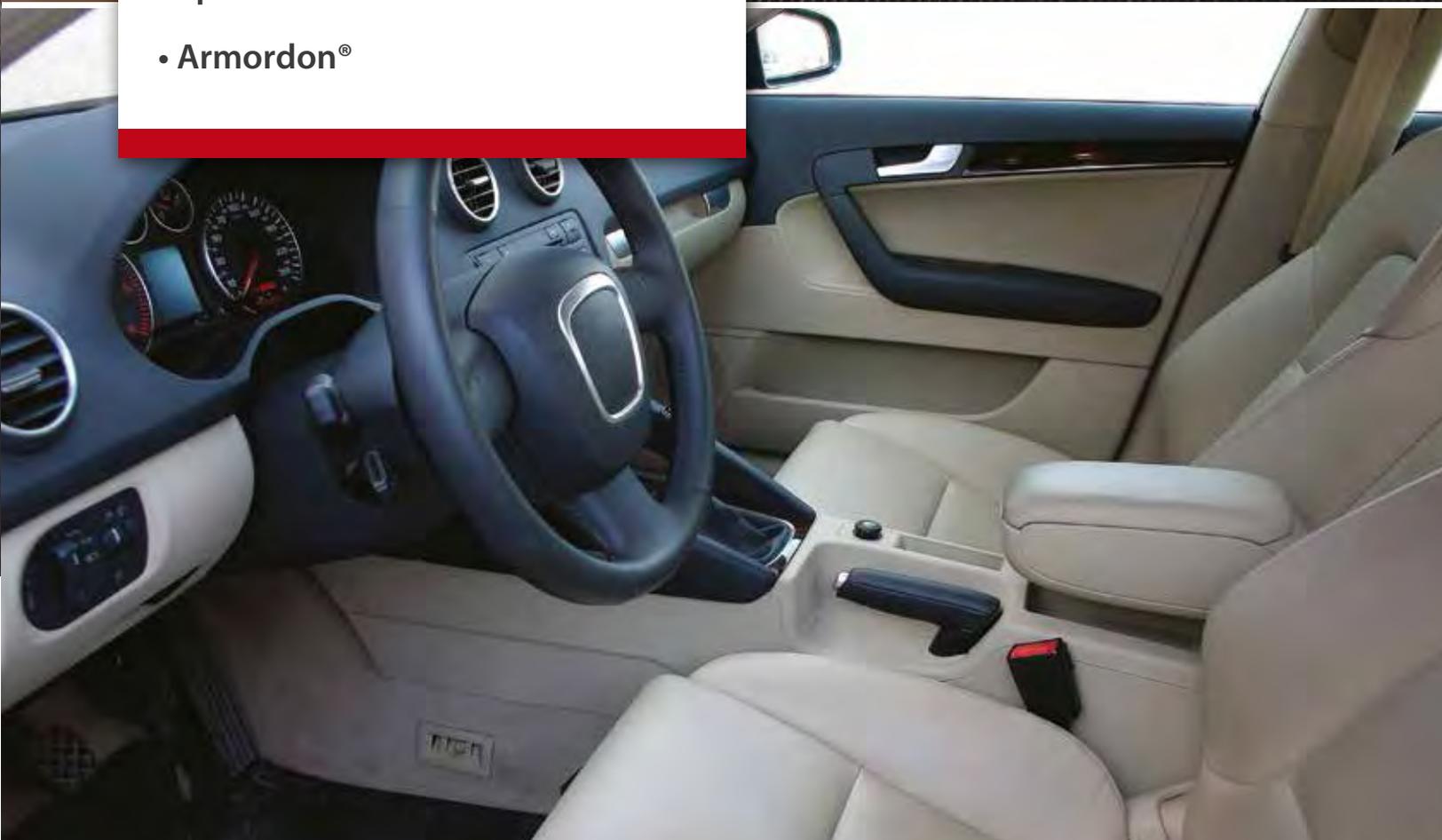


TECHNICAL FABRICS FOR AUTOMOTIVE

- Wheel Well Liners for Thermoforming
- Sound Absorption Fabrics
- Trunk & Seatback Fabrics
- Underbody Shield Components
- Spunbond Nonwoven Fabrics
- Armordon®



LIGHTWEIGHT, HIGHLY RESISTANT TECHNICAL FABRICS FOR SAFE, COMFORTABLE & FUEL EFFICIENT VEHICLES

A LEADING GLOBAL MANUFACTURER CREATES FOR AUTOMOTIVE

Thrace Group, an established producer of technical fabrics worldwide, invests in textiles' unique potential to be used as **highly reliable & cost-efficient solutions** for the automotive industry.

With a manufacturing footprint in both US and Europe, a wide range of fabric production capabilities – including **needlepunch, spunbond, woven, meltblown** (Apr 2016) – and the employment of 28 cutting-edge technologies, Thrace Group cross-develops solutions to meet the demands of **the top vehicle manufacturers worldwide**.

AUTOMOTIVE PRODUCTS

WHEEL WELL FABRICS FOR THERMOFORMING (PET, PP, Multicomponent Blends)

Thrace Group Wheel House Liners improve protection and acoustics while lowering fuel consumption and CO₂ emissions with their remarkably reduced weight. **800 gsm to 1400 gsm / Multiple fibre blends, including recycled fibres and low melt materials / Custom designed to meet OEM requirements**

SOUND ABSORPTION FABRICS

Offering sound-absorbing properties, Thrace Group fabrics enhance sound proofing while being low cost, low weight, recyclable and thermoformable. **Produced from Recycled Fibres / Designed to meet a desired thickness level / 100% polyester for recyclability**

TRUNK & SEATBACK FABRICS

Thrace Group trunk & seatback fabrics combine premium looks with unique performance characteristics. **Polyester charcoal and solid colours / A and B surface / Colour matched and wear resistant / Weights from 80 gsm and up**

SPUNBOND NONWOVEN FABRICS

Thrace Group spunbond nonwoven fabrics can be utilized in a wide variety of scrim, facing, and reinforcement applications for automotive. **High quality flexible manufacturing / Strong, lightweight and cost-effective nonwoven fabrics / High strength-to-weight ratio / Excellent fray and crease resistance**

Armordon®

Armordon® is an srPP (Self-Reinforcing Polypropylene), that when thermoformed, delivers considerable strength, weight and impact resistance benefits over automotive industry standard materials.

100% 'end of life' recyclable / Available in a range of colours, decorative and functional finishes / Contains no VOCs, glass or carbon fibres

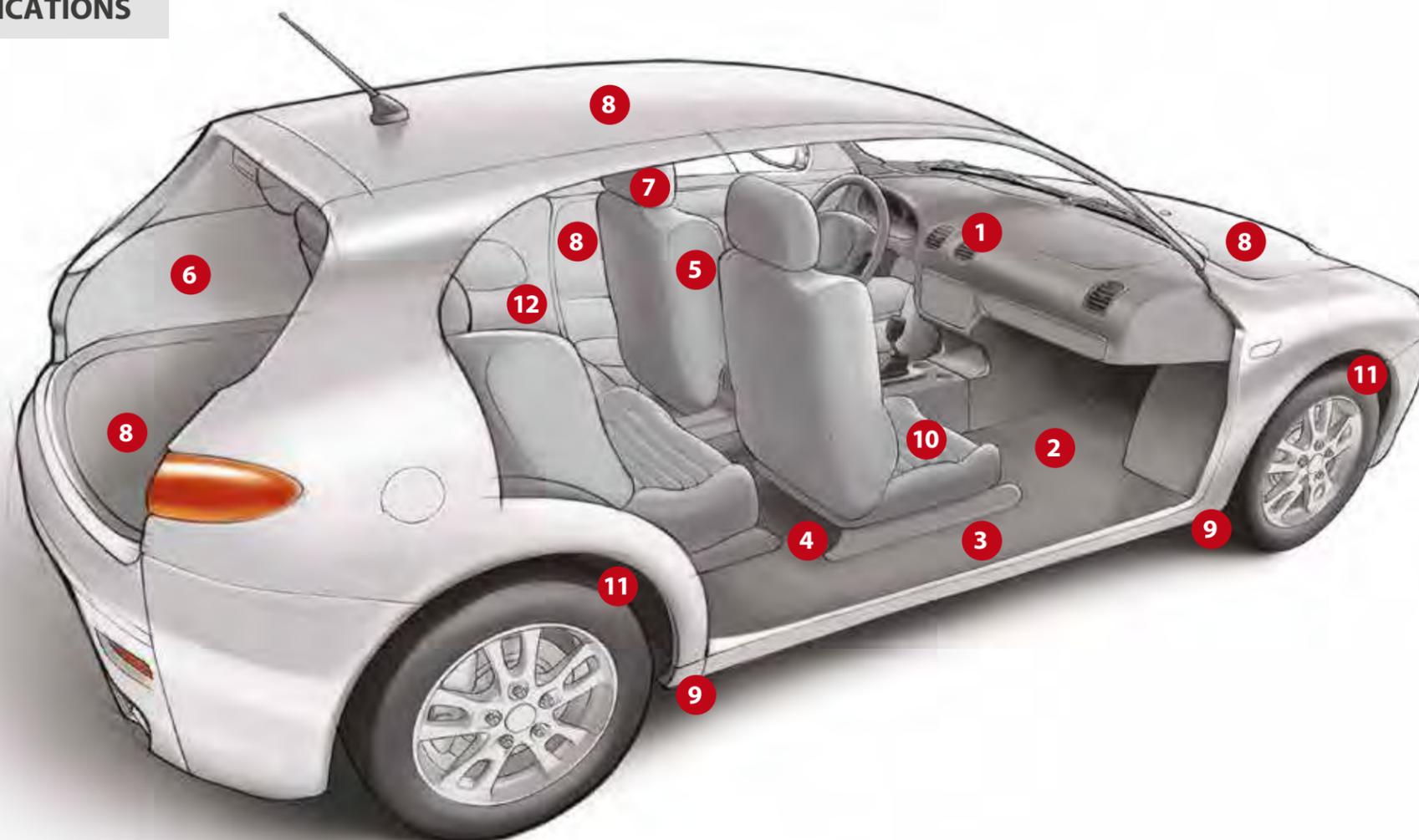
Hybrid Weaves

- Armordon® Endumax
- Armordon® Carbon Fibre
- Armordon® Aramid

Composite Sandwich Panels

- Armordon® Expanded Polypropylene (EPP)
- Armordon® Honeycomb PP
- Armordon® Cross-linked Polyolefin foam
- Armordon® Cross-linked Polyamide foam

AUTOMOTIVE APPLICATIONS



- 1 Cabin air filters
- 2 Carpet and carpet reinforcement
- 3 Car mats
- 4 Backing for tufted carpets
- 5 Covering for molded seats
- 6 Boot (trunk) liners
- 7 Upholstery backing
- 8 Acoustic absorbers
- 9 Under body shield
- 10 High strength seat reinforcement
- 11 Wheel arch liners
- 12 Loudspeaker covers

PRODUCED
IN EUROPE
& U.S.

MANUFACTURING CAPABILITIES FOR CUSTOM AUTOMOTIVE FABRIC PRODUCTION

NEEDLEPUNCH NONWOVEN PRODUCTION CAPABILITIES

- **New Technology** resulting in excellent distribution of fibres and low weight variation
- European and North American **manufacturing locations** (Greece and South Carolina)
- Growing **global capacity footprint**
- Multicomponent **blending capabilities**
- Ability to utilize **recycled materials**
- **Heat setting** and **pre-shrinking ability** in line
- **Inspection** and **conversion** online and off line
- **Wide weight range** from 70 gsm to 1600 gsm

SPUNBOND PRODUCTION CAPABILITIES

- **30 years of experience** in spunbond for technical applications
- **2 plants** (Greece and UK) / **4 production lines** (3 single & 1 double beam lines)
- **2 different bonding patterns:** standard bond (diamond), low bond (circle)
- **Technologies:** thermal lamination / hot melt / extrusion coating
- **PP spunbond / PE spunbond / Microfiber** (1 denier per filament)
- **Coloured spunbond capability** (more than 60 different colour shades)
- **Melt additives:** Hydrophobic / Hydrophilic / Flame Retardants / Antioxidants / UV / Antimicrobial - Antibacterial / Antistatic / Scented
- **Film & Foil-based Laminates:** breather, barrier & thermally reflective
- **Wide weight range:** from 12 gsm to 150 gsm
- **Printing and roll size conversion** facilities available
- Ability to produce **composite layers** for technical fabrics with specific functional performance

NEW SPUNBOND LINE

(in operation: Q2 2016,
Xanthi plant, Greece)

- **SS** (double beam)
- **BICO** (sheath/core)
- **Materials:** PP, PET, PE, PLA
- Ability to utilize **recycled materials** (usage of PET bottle flakes in the core)
- **Excellent fibre distribution** (uniformity equivalent of 4th generation technology)
- **High bondability** / Oval pattern size / **High tensile strength** properties
- **Wide weight range:** from 8 gsm to 180 gsm

NEW MELTBLOWN LINE

(in operation: Q2 2016,
Forfar plant, Scotland)

- Specialising in the production of meltblowns, which can be used for a wide range of **filtration applications** within the automotive industry and also for **acoustic applications** (sound absorption)
- **Materials:** PP, PE, TPU
- **Calibration** and **heat setting** of webs, including **electrostatic charging**
- **Weight range:** from 10 gsm to 300 gsm, widths up to 1.6 m wide

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 **THRACE GROUP**

A WORLD OF MATERIALS & SOLUTIONS