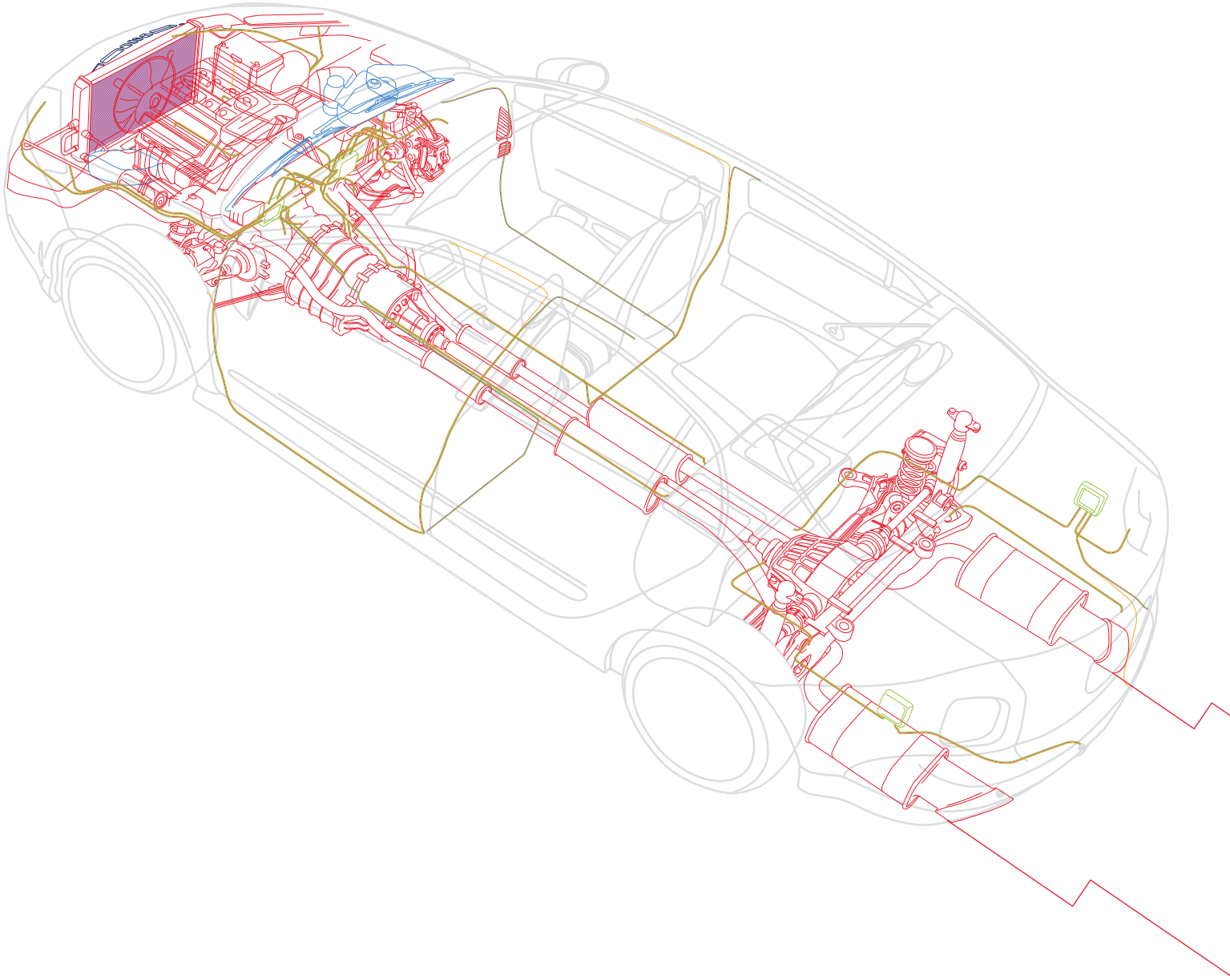
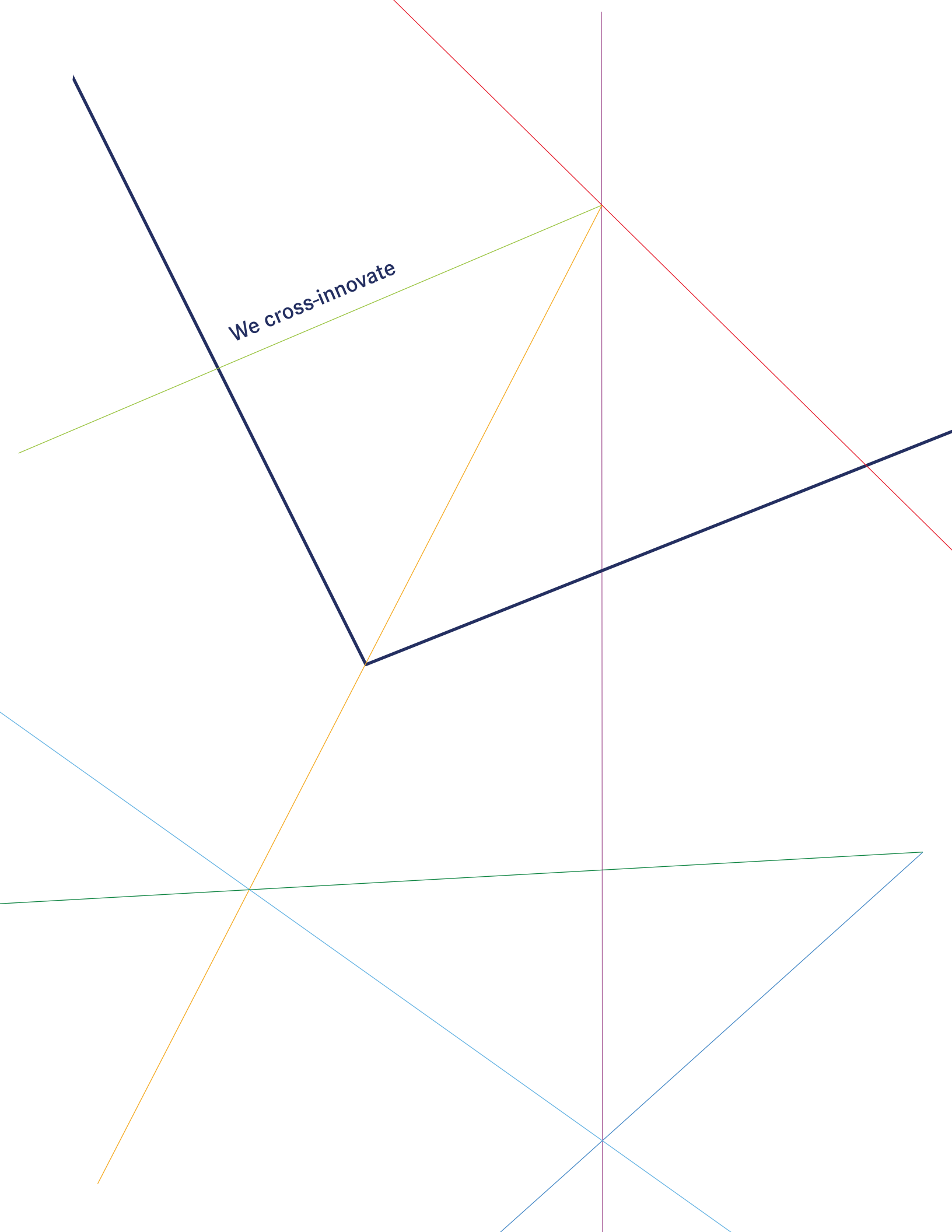
SAATImotion

automotive filtration
mesh & parts



SAATI

We cross-innovate


We cross-innovate

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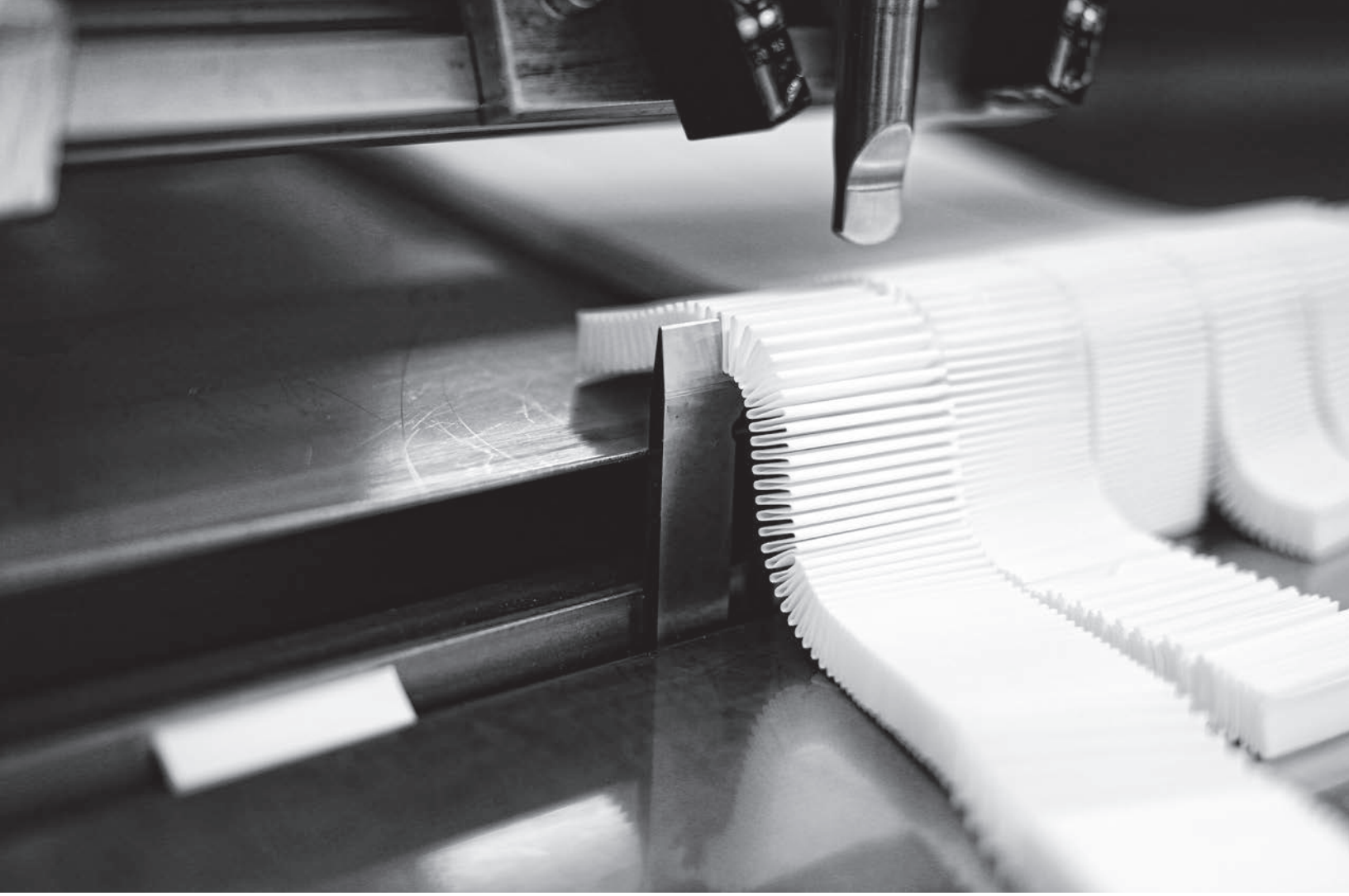
SAATI Group and its Filtration Applications

SAATI is a multinational group with corporate headquarters situated in northern Italy since 1935. Today we are a leader in the development, manufacturing and commercialization of advanced technical textiles and chemicals.

SAATI specializes in precise woven fabrics and chemical technologies used in the fields of Filtration, Screen Printing, and Ballistic Protection. The development of enhanced performance coatings lies at SAATI's core.

SAATI specializes in the production of technical precision (with monofilament and multifilament yarn) fabrics and components in polyamide, polyester and polypropylene, with special finishing treatments.

The products are used in a wide range of different filtration fields such as, automotive, water, healthcare, household applicances, food & milling, along with many other industrial applications.



Focuses on Customer and Innovation

Thanks to our direct presence in many countries, it is easy for the customers to reach us, wherever they are located, and our responsiveness is always prompt. Our staff has a high level of technical expertise and dedication, always aiming to finding the best solution for the customer's requirements.

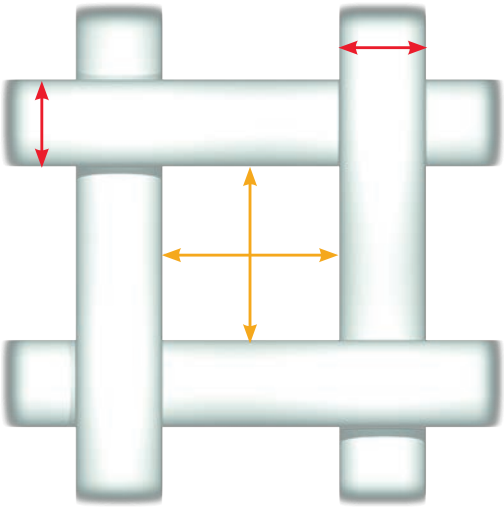
SAATI sales, marketing and engineers understand customers' applications, and work closely with the staff in the production and R&D departments to offer a customized solution in a form that best meets their customers' needs.

Perfecting the Art of Precision Filters

At SAATI, we have a real attitude for innovation and continuously research processes and materials that make real improvements in production and service.

Every phase of production is carefully monitored, employing frequent in-house testing and rigorous inspection to ensure consistent quality at every step of production. Mesh thickness, open area, mesh count, and air permeability are all subject to strict controls that result in high quality final products. All SAATI products are manufactured in accordance with UNI ISO 9001 standards.

SAATI acts in the market with this attitude, offering sieving and filter fabrics and components that answer to the most demanding needs in filtration applications.



Unsurpassed Customer Support

The quality of SAATImotion filtration fabrics is backed by the dedication and expertise of SAATI's customer service. Thanks to offices, warehouses, storage and fabrication facilities throughout the world, SAATI provides strong local support, expert responses to customer inquiries, strong engineering capability, technical support and fast delivery around the world.

SAATImotion

Enhance The Performance Of Automotive Filtration Systems

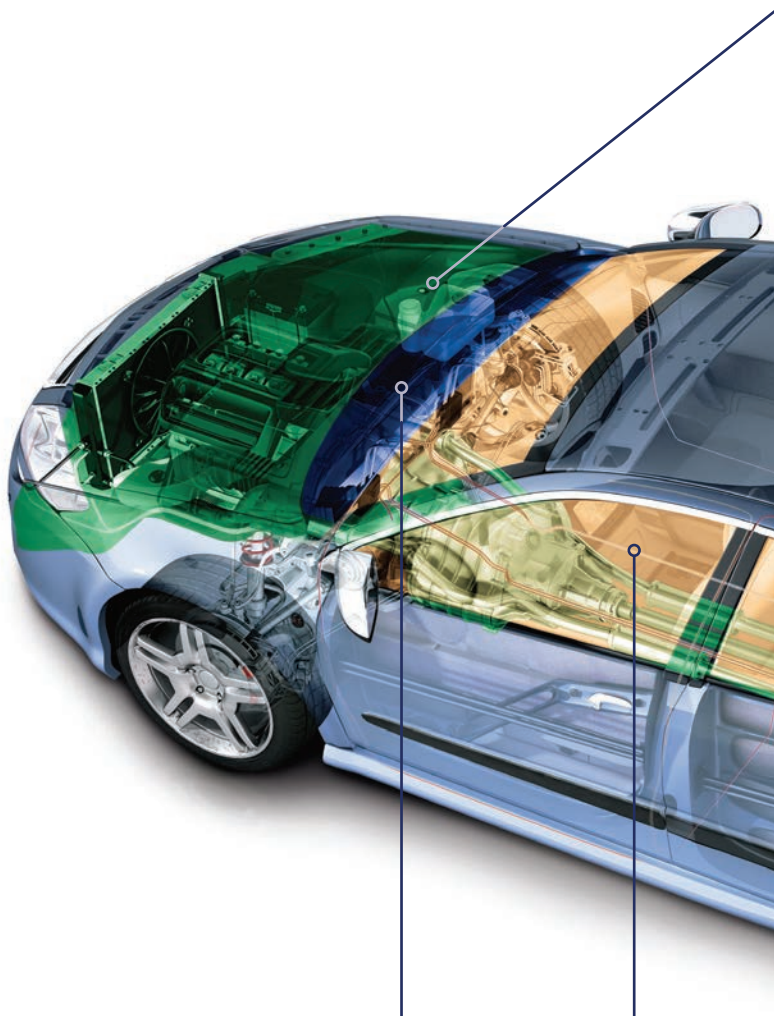
Today, the motor vehicle industry often requires increasingly advanced filtration performances in order to achieve maximum results at every production stage. Filter media plays a key-role as integral part of modern automotive systems.

That's why SAATImotion offers a wide range of filter media solutions thought out down to the smallest details to satisfy the required conditions of carmakers, automotive component manufacturers and injection molders.

SAATImotion's Advantages for Automotive Industry:

- Long life filters
- High dust holding capacity
- Excellent filtration efficiency
- Low pressure drop
- Resistance to common fuels
- Consistency and quality
- Non-shedding properties
- Good thermal stability
- Good chemical resistance
- High mechanical strength
- High workability
- Environmentally friendly (fully recyclable)
- Many years of expertise

Moreover, SAATImotion filter media guarantee a good performance against aggressive synthetic oils and several types of fuels thanks to a higher resistance to ageing in harsh environments and high flow capacity required by modern fuel deliver systems.



Washing

- Water Reservoir Filters
- Windshield Wiper Fluid Filters

Cabin

- Air Conditioning Filtration
- Cabin Air Filters
- Automotive Electronics

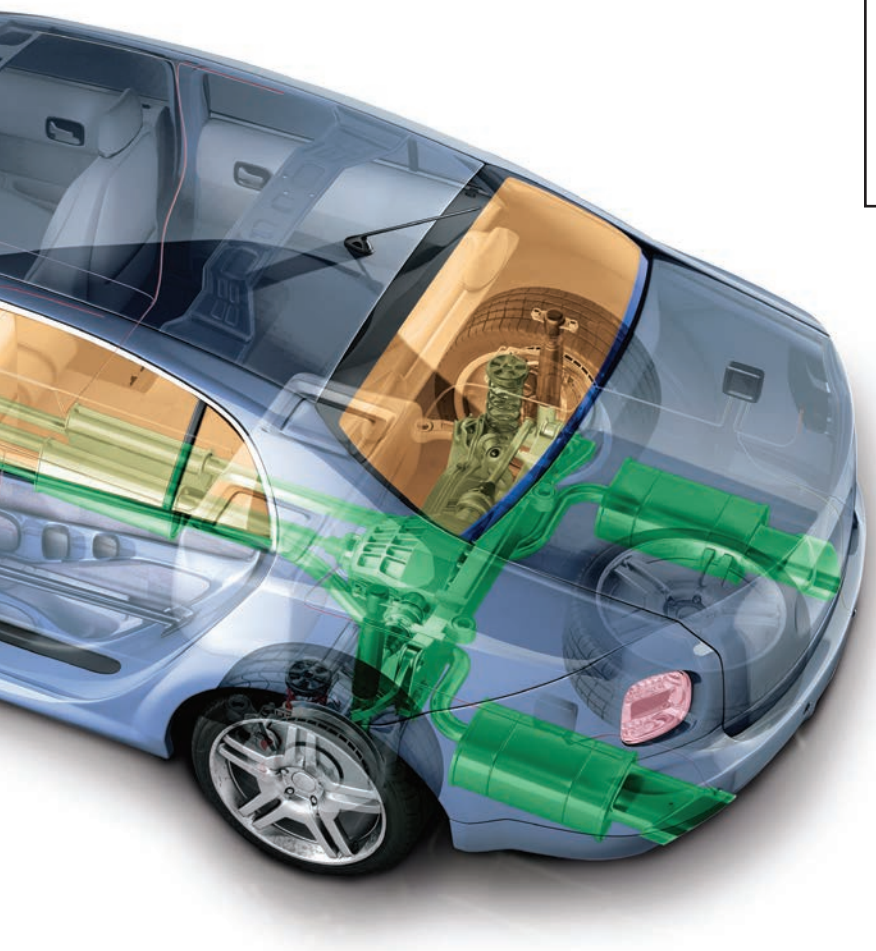
Powertrain

Air Management System
- Engine Air Filter

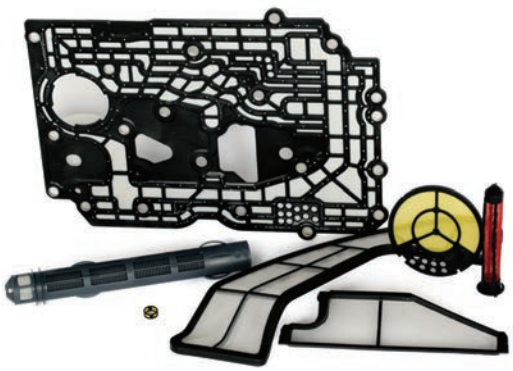
Engine Management System
- In-Tank Filter
- Injection Filter
- Hydrophobic Pre-Filter (Water Separator)
- In-Line Fuel Filter
- Silica Gel For Coolant

Transmission/Hydraulic
- Gear Box
- Hydraulic Suspension
- Power Steering
- Abs
- By-Pass

Emission Control / System
- SCR (Selective Catalytic Reduction) System



Contrary to metal wire mesh, SAATImotion fabrics are fully recyclable being made of the same polymers used in plastic filter housing in vehicles.



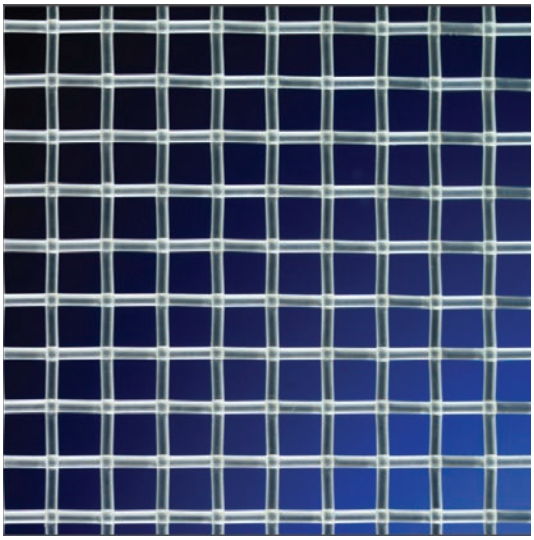
SAATImotion

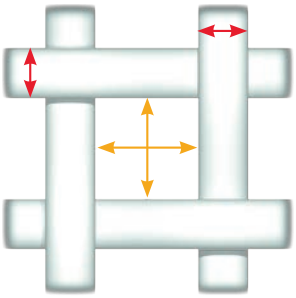
Automotive Fabrics

Fabrics

SAATImotion includes a wide and complete range of avant-garde technical fabrics woven with monofilament yarns in different polymers such as polyester (PET) and polyamide (PA6.6), polypropylene (PP) and PEEK.

SAATImotion fabrics guarantee a good performance against aggressive synthetic oils and several types of fuel thanks to a higher resistance to ageing in harsh environments and high flow capacity required by modern fuel delivery systems.





mesh opening

thread diameter

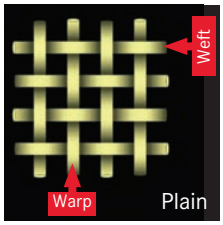
SAATImotion Fabrics Key Features

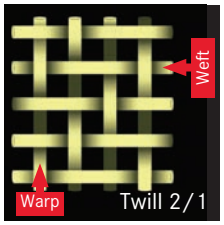
Ideal for a predictable particle removal, repeatable performance with high flow rates and minimal clogging. This ensures a longer life of filter systems.

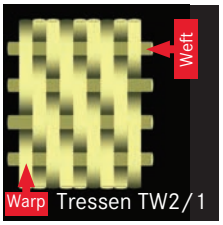
All our fabrics can grant exceptional mechanical performances, and are developed to resist up to particularly high tension levels.

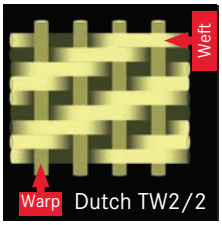
These technical fabrics have uniform mesh opening (range from 7 to 2000 µm), have a smooth surface, can be easily cleaned and are non-shedding.

Moreover, the overall screening performance and non-corroding properties make SAATImotion the ideal solution for fuel delivery and water systems.









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Fabrication Examples

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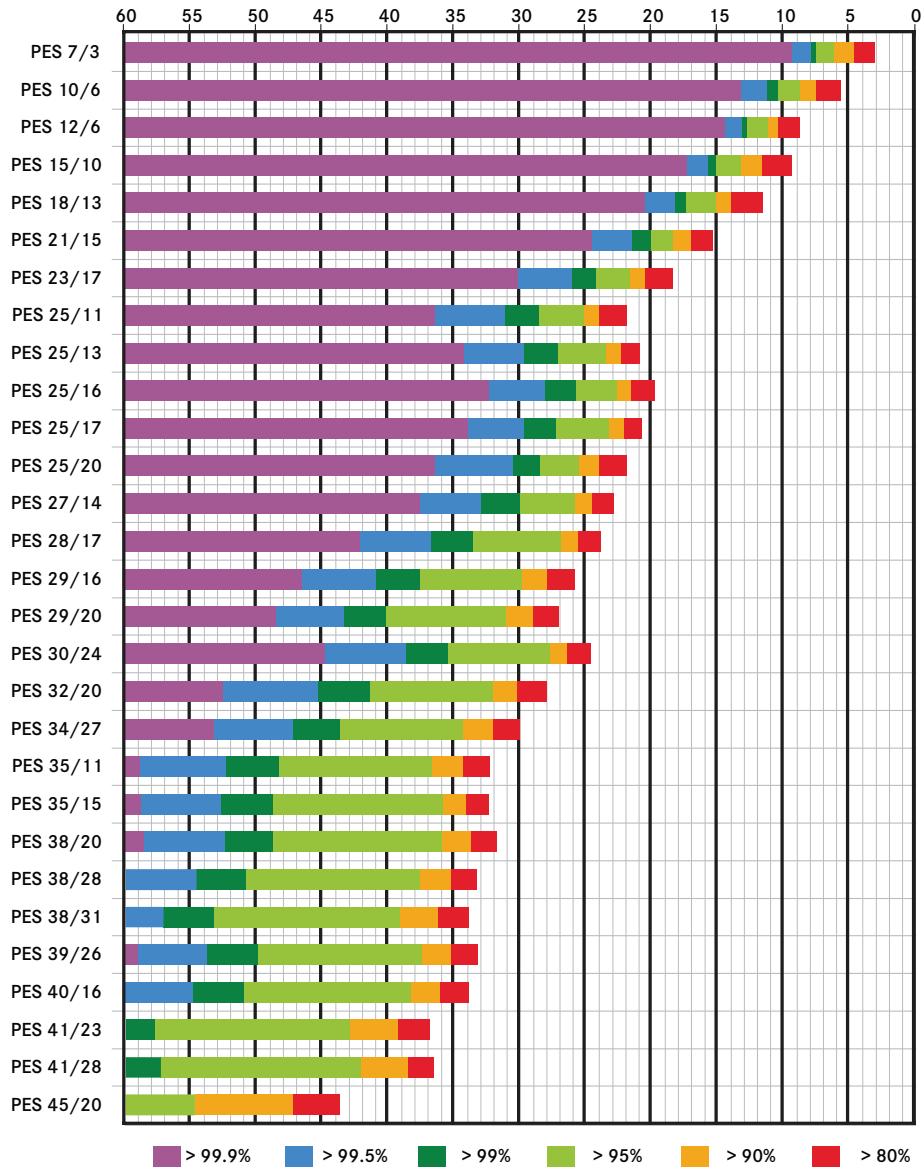
Automotive Fabrics

Filtration Efficiency – Cumulative Results

Based on cumulated particle counts (SAATI's standard data on standard material with mesh openings of 45 microns or less)

SAATImotion Polyester

Particle Size: Microns



SAATImotion

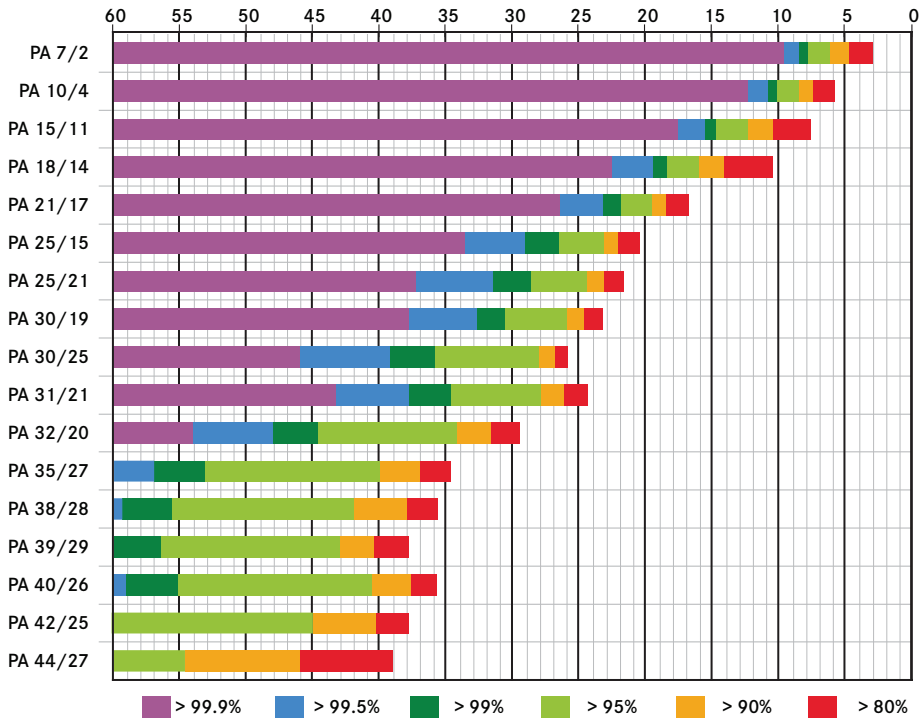
Automotive Fabrics

Filtration Efficiency – Cumulative Results

Based on cumulated particle counts (SAATI's standard data on standard material with mesh openings of 45 microns or less)

SAATImotion Polyamide (Nylon)

Particle Size: Microns



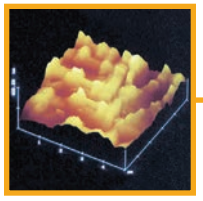
Fabric Selection

To select a fabric, find in the x-axis the minimum particle size of the contaminant that is to be captured. From this value, move down the diagram to the bar of the preferred fabric. The color of the bar at the crossing point will indicate the filtration efficiency that can be achieved.

SAATImotion

Surface Treatments

In addition to the deep know-how in weaving, SAATI has unsurpassed experience in surface treatments, and knows how to finish the fabrics in order to enhance their mechanical performances, or to add further functional properties. Almost any surface treatment can be applied including customers own proprietary coating.



- **Plasma Treatments** SAATI has pioneered the use of cold plasma to modify the screen fabrics surface properties. The plasma treatment increases the fabrics hydrophilicity making it far more wettable. This also enhances the bond of subsequent coatings and plastics while leaving the undersurface properties completely unaffected. The intensity of the treatment can also be modified to meet customers unique requirements.

- **Hydrophobic Treatments** This enables the separation of water from oil-based products such as fuels.
- **Hydrophilic Treatments** Optimizes the wetting process of the fabric's surface in terms of speed and effectiveness.
- **Metalization** Light, flexible polyester fabrics can be metalized with nickel, copper, titanium, gold or other metals so that they reflect electromagnetic energy and dissipate static charges.

- **Dyeing** Fabrics can be dyed to virtually any color. They are used for computer anti-glare screens, fashion shoes, hand bags and racing car air filters. Food grade dyes can be used. Select one of our many standard colors or have one specially matched.

- **Antistatic Finishing** An antistatic treatment can be applied to reduce the build-up of static charges often associated with synthetic fabrics.

In addition to these, we can study in partnership with the customers special different treatments according to specific application, needs and required performances.

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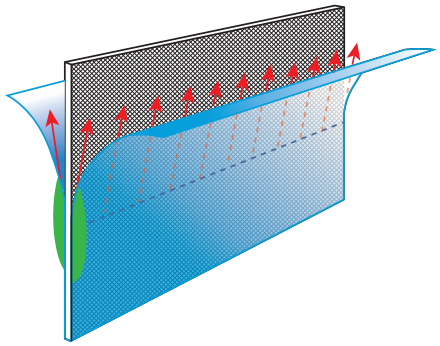
SAATImotion Hyphobe®: Water Repellency

The water separation efficiency of SAATImotion filter media for the automotive industry can be increased by applying SAATImotion Hyphobe® - a customized water repellant surface treatment – that satisfies the current requirements of diesel injection systems, leading to greater water separation.

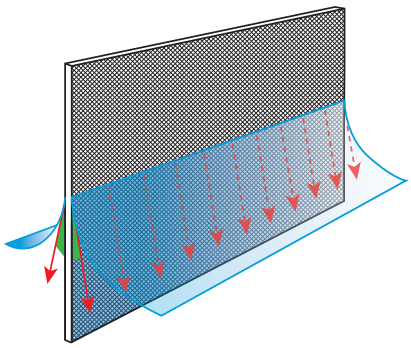
Water-repelling effectiveness is determined by the contact angle between liquid droplet and the mesh surface. A liquid drop forms into a spherical shape because of the liquid surface tension.

When the liquid drop is in contact with a surface of solid material, the shape of the drop will change according to interaction created between the liquid and the solid material.

The lower the contact angle - the higher wettability of the material

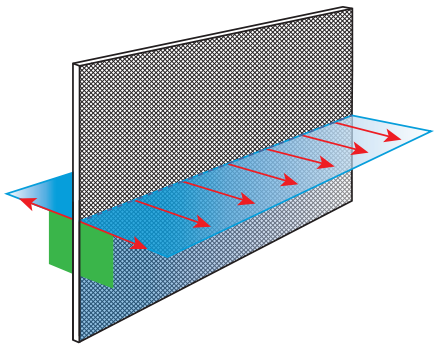


The mesh can be defined as **Hydrophobic** if the contact angle is higher than 90°



The mesh can be defined as **Hydrophilic** if the contact angle is lower than 90°

Higher wettability of the material



The mesh can be defined as **Neutral** if the contact angle is right at 90°

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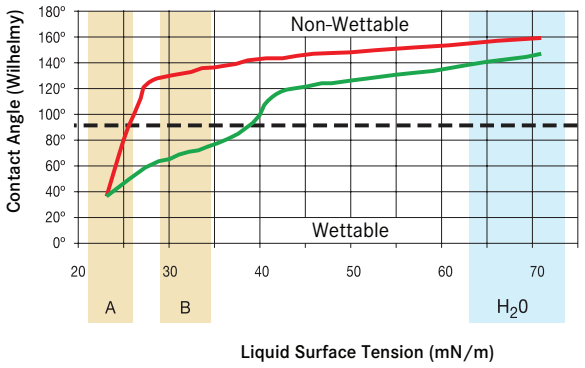
Choosing the Appropriate SAATImotion Hyphobe®: Media

According to Fuel Type

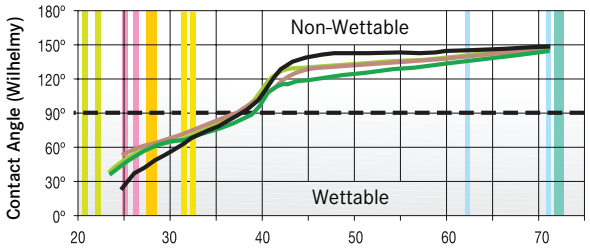


Nylon Media
Polyester Media

Water is always stopped (DCA>90°)

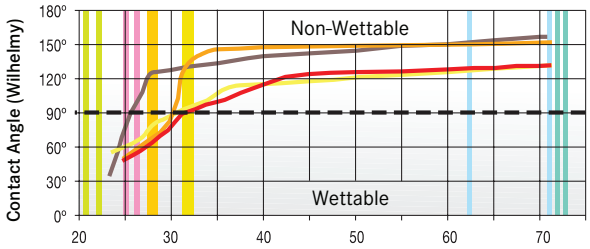
- **A** fuel flows through both media (DCA <90°)
- **B** fuel flows through nylon but may be stopped by polyester filter media

According to Fluid Type



*
PA 125/48 Hyphobe
PA 70/49 Hyphobe
PA 52/32 Hyphobe
PA 25/21 Hyphobe

Water
Salt Water
Oil
Diesel
Jet Fuel
Gasoline



*
PES 120/41 Hyphobe
PA 68/38 Hyphobe
PA 55/31 Hyphobe
PA 25/17 Hyphobe

Polyamide

- High hydrophobic performance against water
- Wettable by liquids below 40 mN/m, including all types of fuels
- Ideal solution for fuel/water separating filters (automotive/aviation)

Polyester

- Very high hydrophobic performance against water and many other liquids
- Hydrophobic performance retained against all liquids having surface tension down to 25-30 mN/m (or dyn/cm)
- Can stop several oils and partially, diesel fuels

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SAATImotion Hyphobe®: Water Repellency

Main Advantages of SaatiMotion Hyphobe® for Fuel/Water Separation:

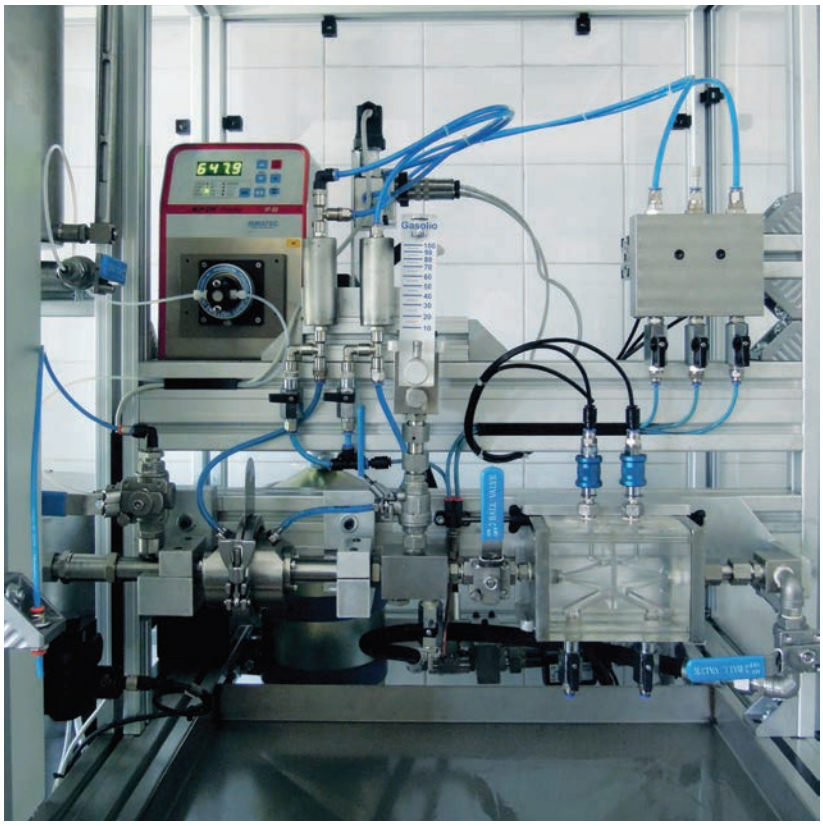
- High levels of fuel filtration performance
- Low pressure drop at the filter
- Capability to capture small droplets even with fuel low interfacial tension.

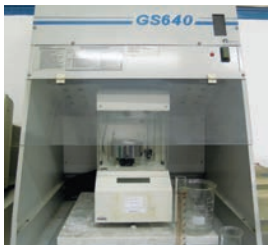
In addition to Diesel-Water separator, Hyphobe® is suitable for other automotive applications such as:

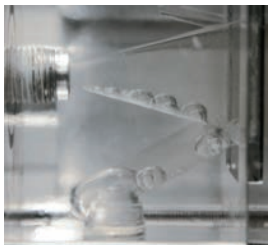
- Hydrophobic pre-filter (water separator)
- Cabin Air Filter
- Acoustic screen for Automotive Electronics (SAATIfil Acoustex®)

LAB Capabilities

ISO/TS 16332 Filtration efficiency test bench







Ribbon

SAATImotion fabrics can be economically slit using heat or, if a tighter tolerance and improved edge quality are needed, the fabrics can be ultrasonically slit.
Production Technology involved: heat, ultrasonics.

Continuous Tubes

Two layers of filter media are simultaneously slit with heated blades to form a continuous tube.
Ultrasonically welded tubular ribbons, although similar in construction to heat slit items, can be produced in a wide range of sizes, including very small ones.
Two or more narrow layers can be attached using ultrasonic slitting, a fine filtration media can be supported or protected with a coarser one.
Production Technology involved: heat, ultrasonics.

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SAATImotion Fabricated Compotents

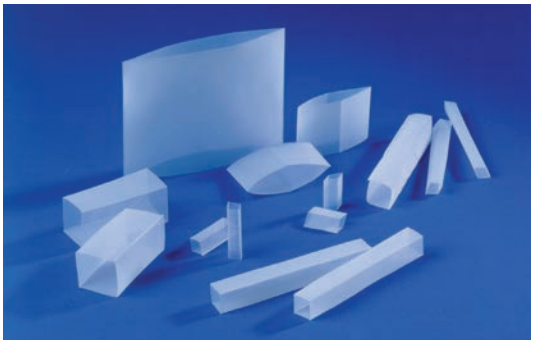
The Filtration Division of SAATI not only designs and produces precision woven fabrics but has the ability to engineer them into finished or partly finished products.

Thanks to processing equipment and long experience, SAATI provides fabrics cut-to-fit, lot-to lot consistency and high quality custom fabricated parts, in almost any requested shape.

Some examples of our fabrication capabilities are:

Tubes - Cut to Length

For all applications requiring molded cylindrical filters, SAATI offers fabrics tubes and rectangles with two open ends, cold or laser cut to length.
Many applications can accept the quality of a cold cut tube in view of its economic advantage. On the contrary, if the component must have one and sealed and one end open, SAATI is able to combine the two technologies in the same process and supply tubes with one ultrasonically sealed end.
Ultrasonic technology is also applied for realization of rectangle filters.
Production technology involved: cold, heat, ultrasonic.



Shapes

Cold or Laser cut parts can be provided in almost any shape or size with nominal dimensional quality. One or more layers of fabrics can be ultrasonically cut or sealed into virtually any shape using a CNC plotter, assuring a faithful reproduction of design.
Production Technology involved: cold (die-cut), ultrasonics, laser.

Pleated Components

Mono or Multi-layer pleated components such as pack, ribbon and cartridges, can be manufactured for all applications requiring high filtration capacity in a narrow space.
Production technology involved: heat and ultrasonics.

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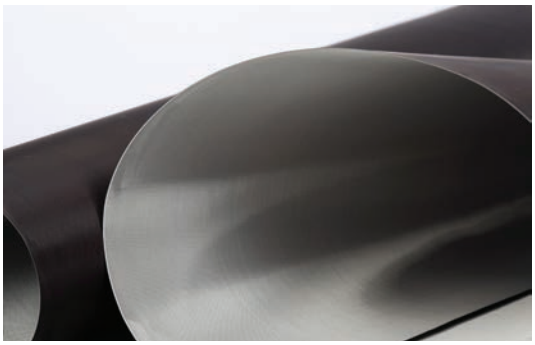
SAATImotion Lamination Capabilities

Laminated Fabrics

SAATI is able to laminate different combination of products for every filtration need:

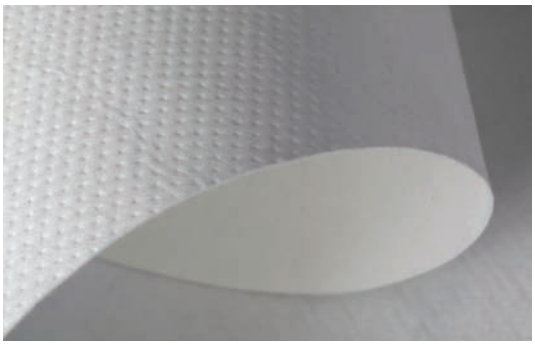
Woven fabric + Woven fabric

- Progressive filtration
- Combination with different functionality
- High protection from dust and metal particles
- Strict airflow control
- Possibility to have Hyphobe® coating for water and oil repellency
- Aesthetic solution



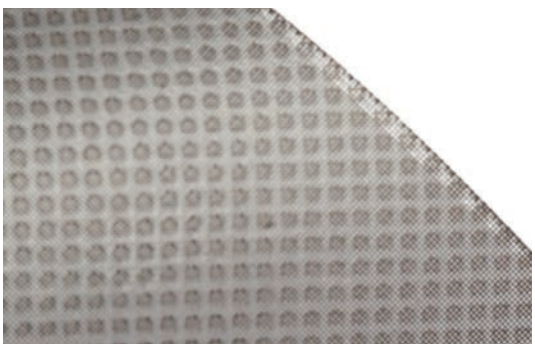
Woven fabric + Non-woven

- High dust holding capacity
- Pre-filtration function
- Protection against heavy particles
- Stiffness and good workability
- Combination of different polymers



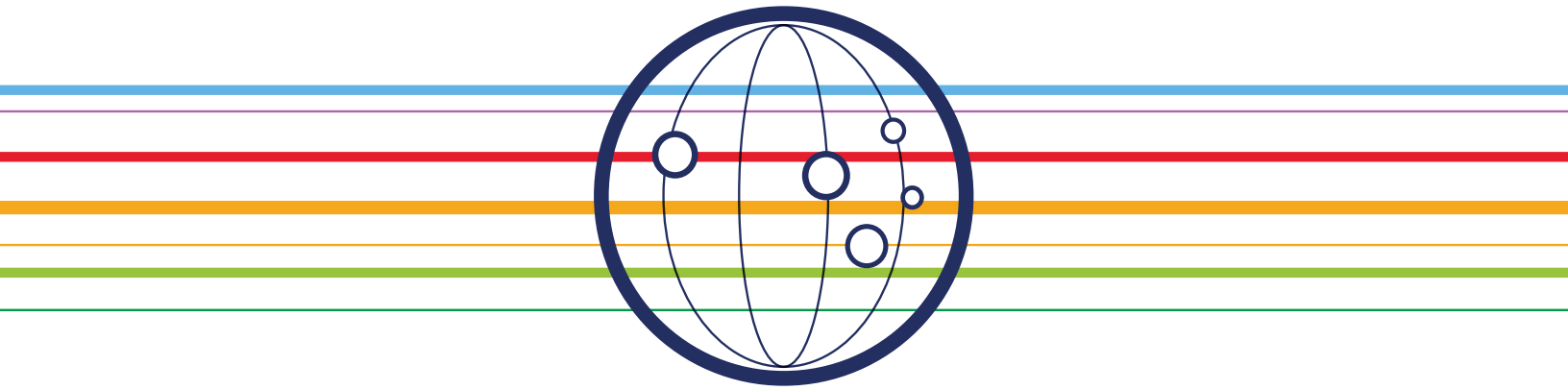
Woven Mesh + Film

- Extreme protection
- Waterproof
- Combination with different functionality
- Stiffness and good workability
- High mechanical – chemical resistance



Notes

We cross-innovate



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