

# Protection

Performance  
Fabrics &  
Hybrid  
Technologies

—SAATI



# Table of Contents



<a href="#">Company Information</a> .....	03
<a href="#">Customer Focus</a> .....	05
<a href="#">Improving Safety</a> .....	06
<a href="#">Production</a> .....	08
<a href="#">SAATI Lab</a> .....	10
<a href="#">The Products</a> .....	12
<a href="#">Sustainable Future</a> .....	22
<a href="#">SAATI Global Contact Information</a> .....	BACK

Engage with SAATI



Over 40 Years  
of Innovative  
Action



## Company Information

SAATI is focused on the production of fabrics, panels and laminated materials in aramid fiber with unique resin finishing processes, for multi-threat protection, both for personal protection and light armouring systems. We offer insight gained in more than 40 years of providing technology and support to markets around the globe.

SAATI offers products that may include a variety of water repellent treatments, hot melt and solvent resin coating, thermoplastic, rubberized and thermoset (epoxy and phenolic options).

Whatever your protection needs, SAATI can provide the right solution.



# Customer Focus

## Customer Driven Innovation

With business offices and warehouses throughout the world, SAATI provides strong local support, expert response to customer inquiries, and quick delivery to all locations.

SAATI Sales Representatives and Engineers are committed to a tradition of continuous innovation. They understand their customers' applications and offer the most appropriate product in a form that best meets their customers' needs.

The search for new materials and designs is facilitated by our continual acquisition of new technology and equipment. Our R&D and Technical team can take advantage of state of the art laboratories and in-house ballistic test capability, where they can study incoming raw materials and finished products, with the purpose of developing the best solution for the customers' requirements.

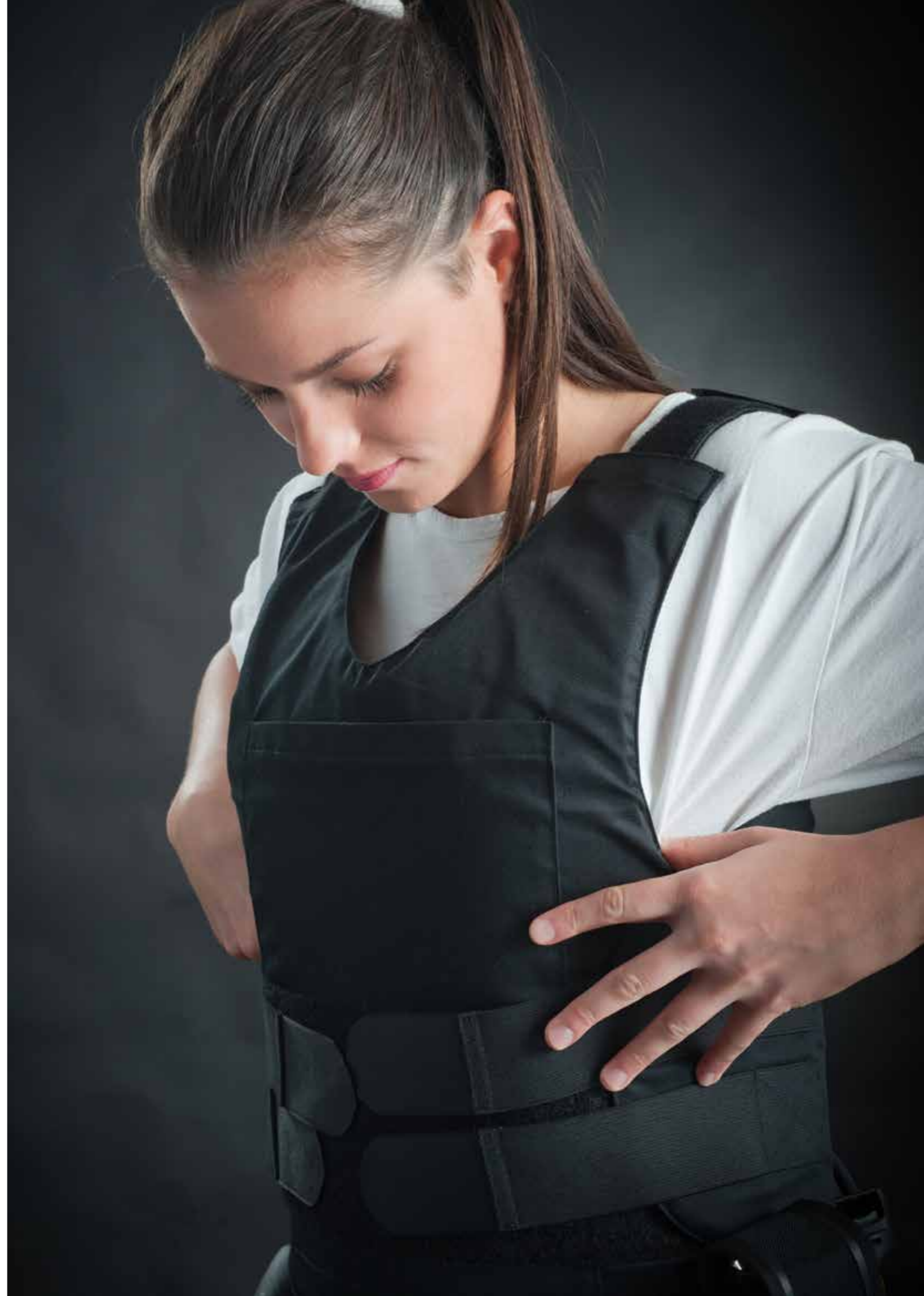


# Improving Safety

As a leading supplier of products for the protection sector, SAATI is at the forefront of technology. We strive to develop innovative and reliable systems that are able to protect the military and law forces against the different threats. Not only protection against bullets, but also protection against knives, spikes, fragments and blunt impacts.

SAATI is the partner able to find solutions to the continuously evolving challenges, first of all in terms of protection to the more and more sophisticated threats, and also challenges in terms of productivity, availability, reliability, safety, costs. For each threat, we are able to develop different solutions, several options that can all give an answer to the required performances, with a different approach.

Recently SAATI has been developing products which offer advantages for customers and final users such as lightness and flexibility in order to reach a greater comfort & wearability, improvement of production process and reduction of scraps. SAATI aims to develop products minimizing ever more the impact on the environment.





# Production

SAATI is among the few companies in the world who can fulfill the most demanding requests from police forces, ministries of defense and companies specialized in products for the protection of persons and vehicles. The know-how which has been developed over many years of experience working in world markets goes hand in hand with the continuous commitment in research and development. This gives us the expertise needed to give qualified answers to the protection sector, and to be up-to-date with the most advanced technologies.



Finishing

Pre-Preg



Warping

Weaving



Lamination



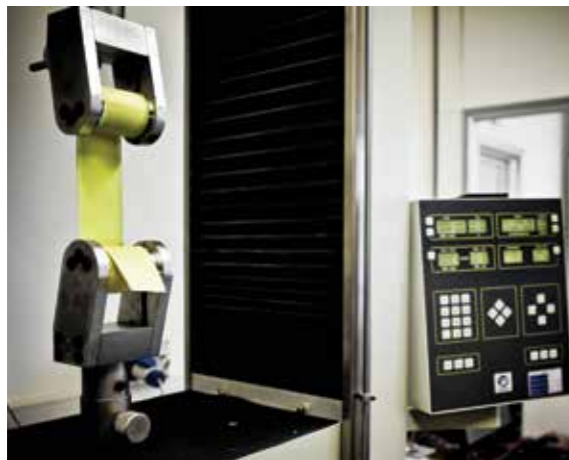
Molding



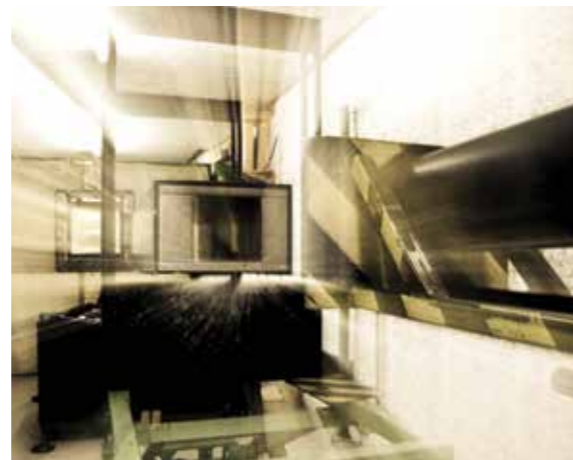


# SAATI Lab

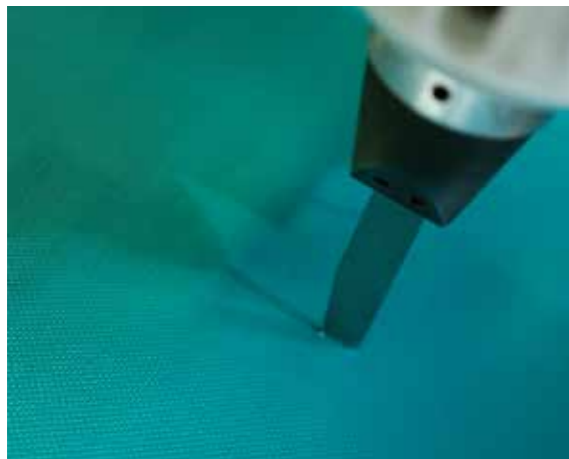
SAATI offers comprehensive laboratory capabilities; our skilled Quality Control and R&D teams are supported by the most state of the art quality control devices and equipment, and are able to make in house all the tests which are required by the industry.  
We constantly innovate to raise performance and open up new possibilities to develop customized solutions according to worldwide standards in order to meet customers' requirements  
Some of our laboratory testing capabilities include:



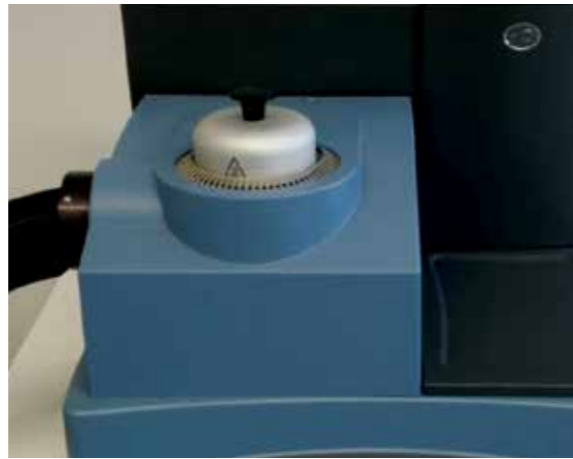
Physical – Yarn, Fabric



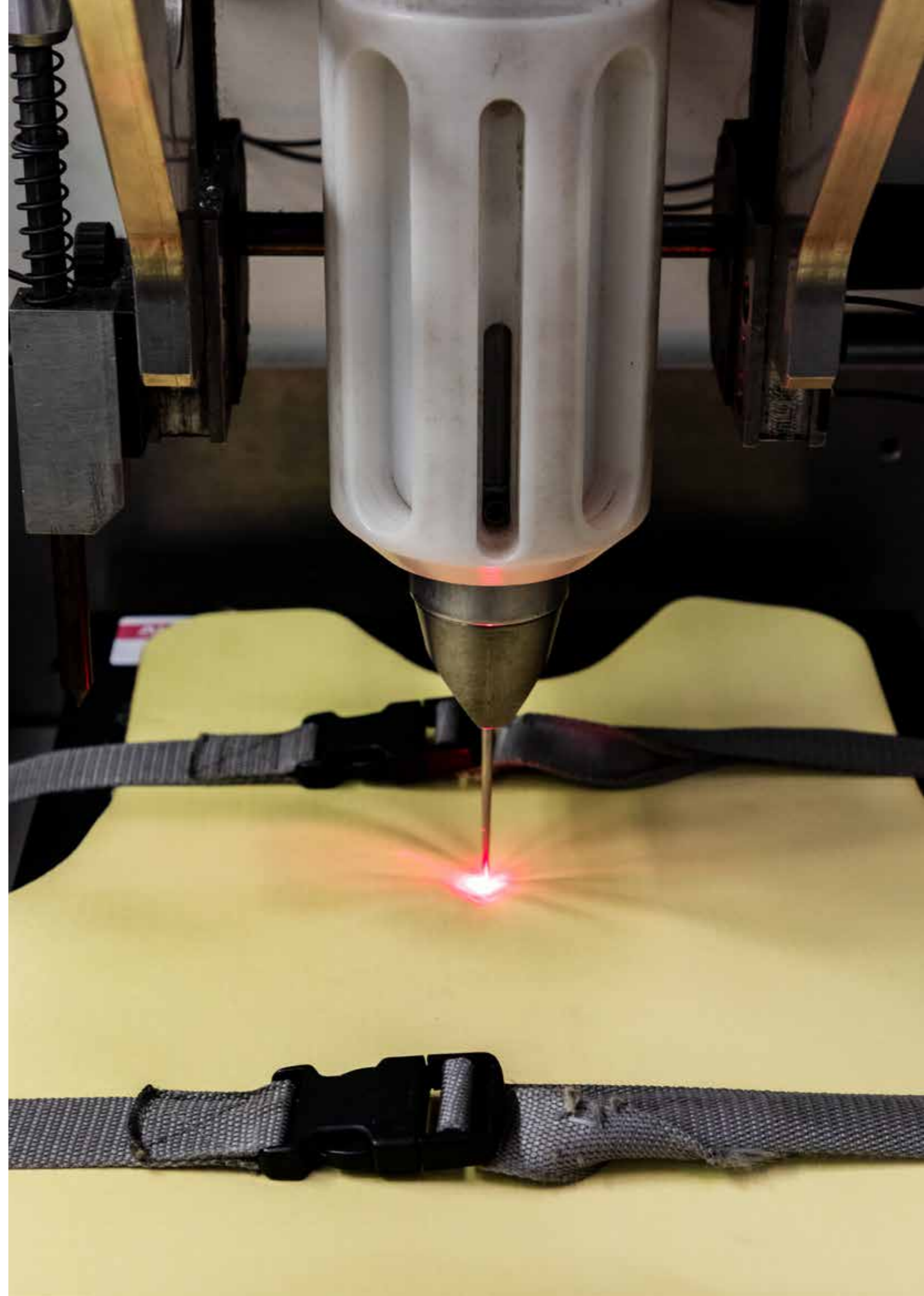
Ballistic



Stab/Spike



Thermal – DSC



# The Products

SAATI is a global manufacturer of fabrics, pre-pregs, Multi-threat Protection (MTP) systems, backing and spall liners for law enforcements, military, corrections & private security applications, both for personal protection and armouring.

## Aramid Fabrics

Our wide range of the most advanced fabrics available in the market covers the various civil, law enforcement and military applications for personal protection. A leadership obtained through the development and manufacturing of fabrics in para-aramidic and other fibres, consolidated through an ongoing process of product innovation and exclusive finishing procedures. We offer a wide range of fabrics with an areal density from 110 g/sqm to 625 g/sqm using aramid fibers from 220 to 3300 dtex.



## Threats



Bullets



Fragments



Spikes

## Main Application Areas



Item	Weave	Threads x cm		Title Count		Thickness (mm)	Weight (g/m <sup>2</sup> )	Warp (DaN/cm)	Weft
		Warp (n°/cm)	Weft (n° /cm)	Warp (dtex)	Weft (dtex)				
270	plain	27,5	27,5	Kevlar 159 220	Kevlar 159 220	0,20	125	80	100
372	plain	23,2	23,2	Kevlar 159 330	Kevlar 159 330	0,22	158	100	100
310	plain	14,0	14,0	Kevlar KM2+440	Kevlar KM2+ 440	0,17	125	100	100
431	plain	12,2	12,2	Kevlar KM2+440	Kevlar KM2+ 440	0,13	110	90	90
6402	plain	10,7	10,7	Kevlar KM2+670	Kevlar KM2+ 670	0,20	145	130	130
6602	plain	12,2	12,2	Kevlar KM2+670	Kevlar KM2+670	0,25	165	135	135
3631	plain	10,7	10,7	Kevlar KM2+940	Kevlar KM2+940	0,31	200	140	140
3651	plain	11,7	11,7	Kevlar KM2+940	Kevlar KM2+ 940	0,32	220	150	150
802	plain	8,5	8,5	Kevlar KM2+1100	Kevlar KM2+ 1100	0,26	190	150	150
812	plain	12,2	12,2	Kevlar KM2+1100	Kevlar KM2+ 1100	0,38	280	220	220
863	plain	9,3	9,3	Kevlar KM2+1100	Kevlar KM2+ 1100	0,33	205	140	140
865	plain	10,0	10,0	Kevlar KM2+1100	Kevlar KM2+1100	0,27	220	170	170
258	plain	6,4	6,4	Kevlar 129 3140	Kevlar 129 3140	0,62	410	320	350
300	plain	4,5	4,5	Kevlar 29 3300	Kevlar 29 3300	0,40	300	190	190
101	plain	6,7	6,7	Kevlar 29 3300	Kevlar 29 3300	0,63	460	280	280
103	twill 4/4	9,3	9,3	Kevlar 29 3300	Kevlar 29 3300	0,91	635	320	320

● for spike protection





# Protection

The Products

## Coated Aramid Fabrics

Our coated and laminated products are manufactured both with traditional fabrics, using phenolic, epoxy, thermoplastic and rubber resin system. The properties of the resins, combined with the properties of the fibres, meet the most high demanding requirements in the sector of ballistic protection (helmets, armouring).

The last generation of products provides for the use of preservable matrices at room temperature, long shelf life, mold at low temperature and therefore compatible with thermoplastic systems.



## Threats



Bullets



Fragments

## Product Range for Vehicle Armouring

### Phenolic Systems

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 258 PHLF - single side coated	Plain	12	455	165	30	*
Style 101 PHLF - single side coated	Plain	16	525	165	30	*
Style 258 PHLF - double side coated	Plain	25	535	165	30	*
Style 350 PHLF - single side coated	Basket 3/3	9	374	165	30	*

### Rubberized Systems

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 101 GRC-D - double side coated	Plain	18	580	175	10 - 50	*
Style 101 GHY - single side coated	Plain	15	515	185	10 - 50	*

### Thermoplastic Systems

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 101 L60	Plain	11	495	160	10	*
Style 258 L60	Plain	11	450	160	10	*
Style 101 PCK	Plain	11	495	135	30	*
Style 258 PCK	Plain	12	455	135	30	*
Style 350 PCK	Basket 3/3	9	374	135	30	*

## Main Application Areas



## Product Range for Helmets & Shields

### Phenolic Systems - (Shelf life 12 months at -18°C or 6 weeks at 23°C)

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 258 PHLF - single side coated	Plain	12	455	165	30	15
Style 101 PHLF - single side coated	Plain	16	525	165	30	15
Style 258 PHLF - double side coated	Plain	25	535	165	30	15
Style 350 PHLF - single side coated	Basket 3/3	9	374	165	30	15
Style 3651 PHLF Black finished double side coated	Plain	18	262	165	30	15

### Epoxy Systems - (Shelf life 12 months at -18°C or 45 days at 23°C)

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 258 ER221	Plain	18	490	125	2 - 7	15
Style 258 ER221	Plain	26	540	125	2 - 7	15

### Thermoplastic Systems - (Shelf life 12 months at 23°C)

Item	Weave	Resin content	Prepreg Weight	Curing Cycle		
		(%)	(g/m <sup>2</sup> )	(°C)	(bar)	(min)
Style 258 PCK	Plain	12	455	135	30	30
Style 350 PCK	Basket 3/3	9	374	135	30	30
Style 6402 PCK	Plain	20	175	135	30	30
Style 802 PCK	Plain	18	226	135	30	30

## Main Application Areas



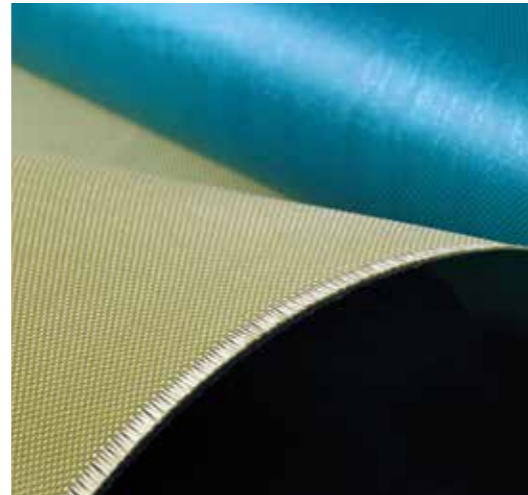
# Protection

The Products

## Multi-Threat Protection (MTP) Systems

SAATI MTP systems are designed to protect against threats of different origins: bullets, knives and spikes. To face these kinds of threats we offer a wide range of products as multi-threat protection “MTP” (trauma reduction systems, stab and spike protection systems).

According to technical specifications, SAATI is able to offer products in sheets and in rolls in order to reach the required target: lightness, flexibility and reduction of scraps during the fabrication.



## Threats



Bullets



Fragments



Blades



Spikes



Trauma Reduction

## Main Application Areas



## Stab and Spike Protection Systems

Item	Thickness	Weight	Format
	(mm)	(g/m <sup>2</sup> )	
AS 299	0,13	165	Sheet Dimensions: 2130 x 1270 mm
MTS310	0,35	310	Roll Width: from 1200 up to 1600 mm

## Trauma Reduction Systems

Item	Thickness	Weight	Format
	(mm)	(g/m <sup>2</sup> )	
AT2	0,50	510	Sheet Dimensions: 2130 x 1300 mm
TRS295	0,38	295	Roll Width: 1600 mm

## Multi Threat Protection (MTP) Systems

Item	Thickness	Weight	Format
	(mm)	(g/m <sup>2</sup> )	
AS401S	0,22	235	Sheet Dimensions: 2000 x 1200 mm
AS401D	0,23	280	Sheet Dimensions: 2000 x 1200 mm
TRS380	0,33	372	Sheet Dimensions: 2000 x 1300 mm
MTS285L	0,22	285	Sheet Dimensions: 2000x1200 mm
MTP235T	0,25	235	Roll Width: 1360 mm





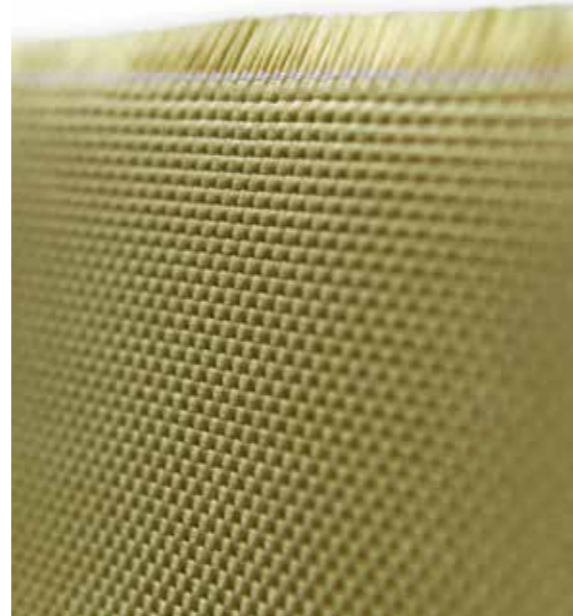
# Protection

The Products



## Backings and Spall Liners

SAATI product range for the military protection is completed with the engineering and manufacturing of backings and spall liners for military vehicles. The product range includes special laminates and panels which are developed according to the latest requirements of the protection sector's regulatory framework.



## Threats



Bullets



Fragments

## Main Application Areas



## Backing Spall Liner

Item	Standard Dimensions	Thickness	Weight	Resin Matrix
	(mm x mm)	(mm)	(g/m <sup>2</sup> )	
PVB 14/19	1200 x 2000	8,3	8,7	Thermoset
L60/14	1200 x 2000	6	7	Thermoplastic
L60/16	1200 x 2000	7	8	Thermoplastic
L60/25	1200 x 2000	11	12,5	Thermoplastic
L60/10 H-2	1220 x 2000	5,8	5	Thermoplastic/Rubberized
L60/15 H-2	1220 x 2000	8,3	6,8	Thermoplastic/Rubberized
L60/20 H-2	1220 x 2000	10,8	9	Thermoplastic/Rubberized
GRC 101 19/15-2	1950 x 1360	7	8,4	Rubberized
GRC 101 19/7-2	1950 x 1360	4,8	3,9	Rubberized



# Protection

The Products

## CoreMatrix™

The combination of SAATI fabrics and Du Pont Technology creates a unique monolithic fabric: CoreMatrix patented Technology is a product of needle felting expertise by infusing Z-directional staple-length fibers directly into the fabric stack structure. It can significantly reduce backface trauma while increasing ballistic and fragmentation performances.

This unique engineering also reduces the need for layer counting, quilting, lamination and it's compatible with all major ballistic materials.



## Main Application Areas



## Threats



Bullets



Fragments



Trauma Reduction

## CoreMatrix™

Item	Construction		Thickness mm	Weight g/m <sup>2</sup>	Standard Width cm
	Layer 1	Layer 2			
9354	PES felt	Aramid fabric	2,8	1238	160
9757	Aramid felt	Aramid fabric	2,3	913	160
9325	Aramid felt	Aramid fabric	1,27	271	160



# Sustainable Future

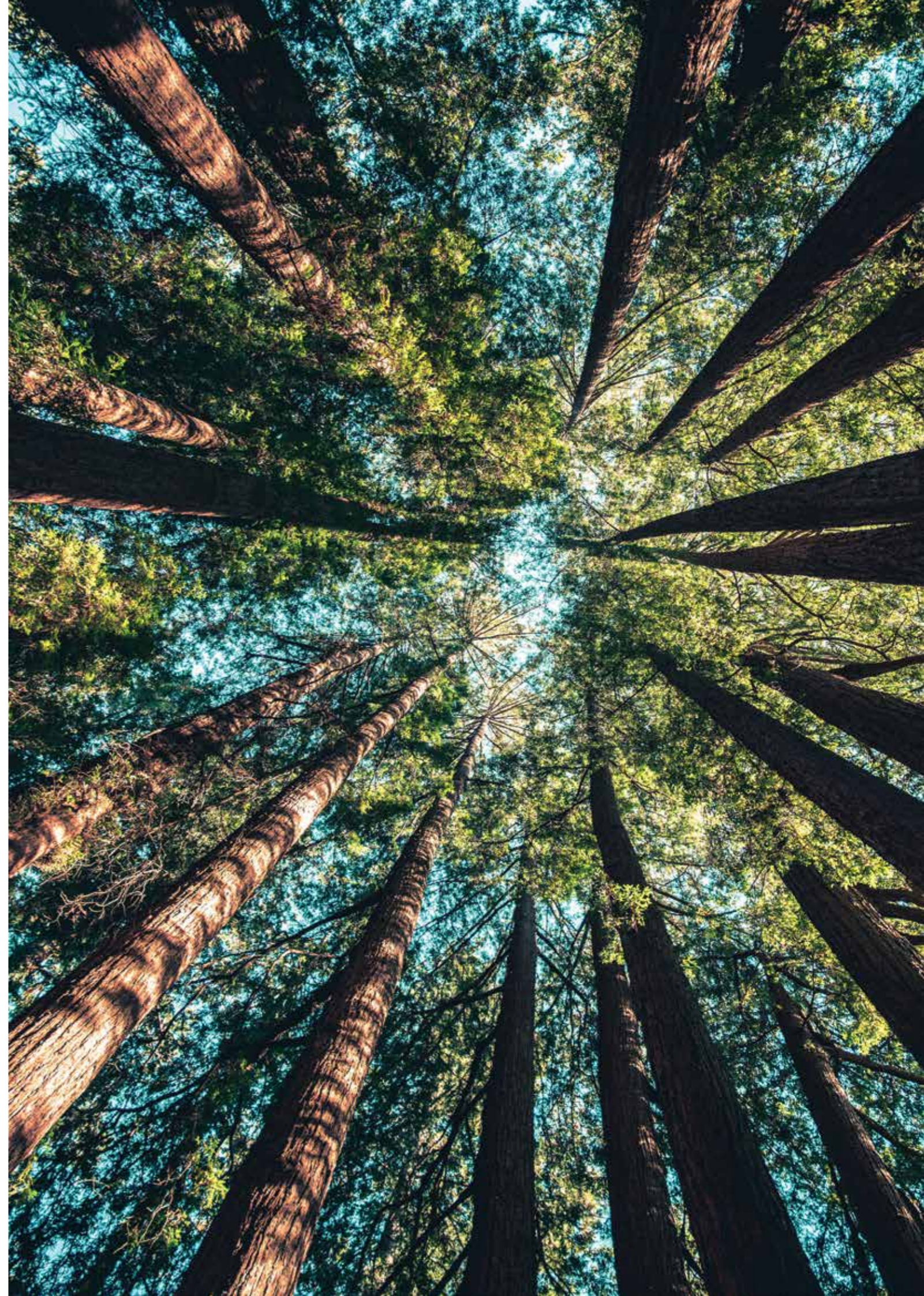
## We Work To Improve Everyday Life

We understand the importance of operating a sustainable business. First of all, in terms of the products we manufacture. At SAATI, we develop and make available technological products that feature in people's everyday routines, all over the world, helping to make their lives healthier, safer, or simply easier.



## Life Is Precious. We Work To Protect It

All of our products, from fabrics, through components to chemicals, recognize that life is precious. At SAATI, we manufacture technologies for life: filter fabrics for blood transfusion sets; aramid fabrics in bullet proof jackets; functional fabrics and chemicals to manufacture solar cells, mobile phones and tablets that improve our lives.



# —SAATI

**SAATI S.p.a**

Via Milano, 14

22070 Appiano Gentile (Co), Italy

Tel : +39 0319711

Fax: +39 031 933392

E-mail: info.it@saati.com

**SAATI Americas Corp.**

201 Fairview St. Extension

Fountain Inn, SC 29644

Toll-Free: +1 800 431 2200

Fax: +1 864 862 0089

E-mail: info.us@saati.com

Connect with SAATI

