



THE WORLD'S
STRONGEST DENIM

Press Kit

Armalith® was conceived in 2003 by French Pierre-Henry Servajean, who would patent his invention a few years later.

Designed to protect, Armalith® recalls the original jeans but encapsulates two decades of innovation across the textile industry.

Its recent developments continue the innovative nature of this fabric, making it lighter, more durable, and cost-effective. The ongoing developments promise to breathe new life into a 150-year-old workwear staple: the jeans.



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• 01 - Armalith®: a unique « Architecture »

Armalith® is an authentic denim, born from the revolutionary assembly of aerospace fibers coated in cotton.

The heart of this complex "architecture" consists of a technical framework of UHMWPE fibers⁽¹⁾. Originally, these fibers were traditionally used for space applications (spacecraft re-entry tethers), as well as military (bulletproof vests and armoring) and offshore uses (securing marine platforms).

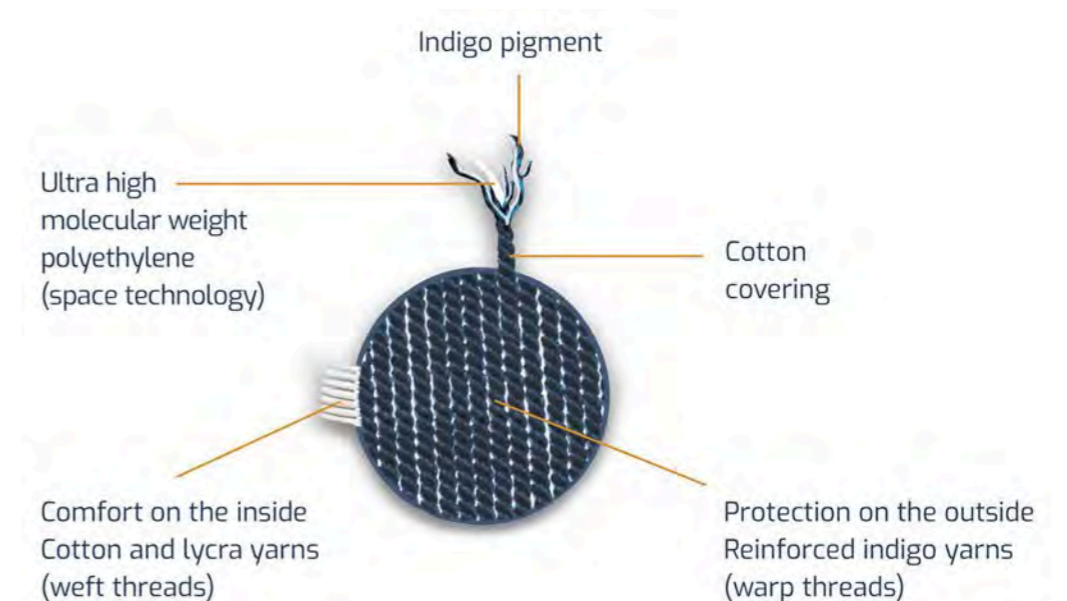
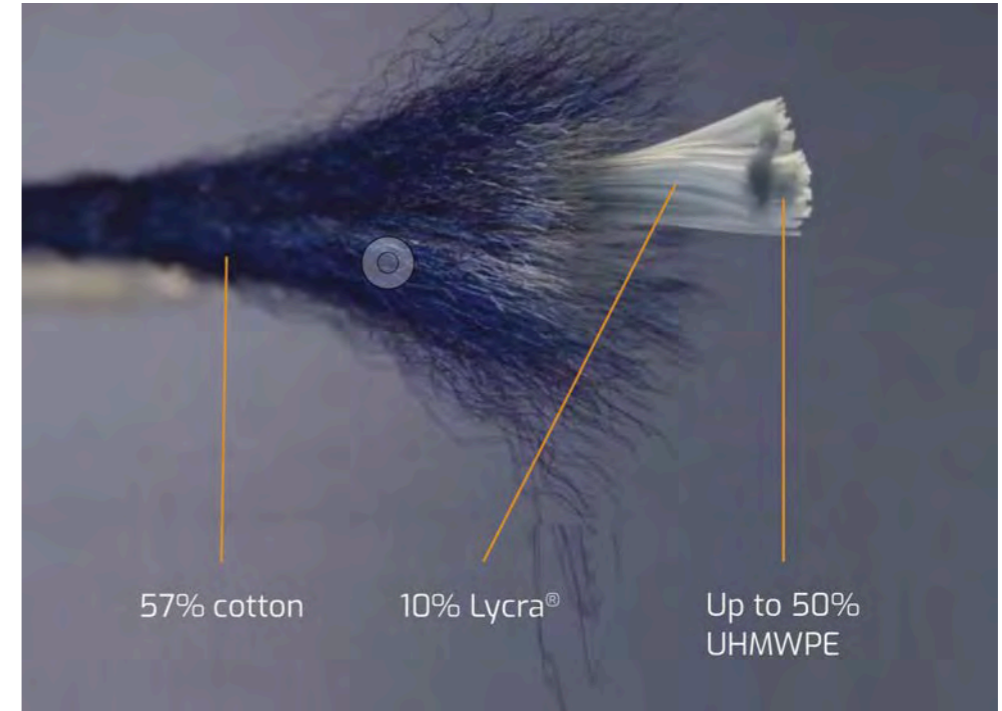
High performance enters the world of jeans

By diverting UHMWPE from its industrial applications, Armalith® has created a revolutionary fabric accessible to the public.

Armalith® exhibits exceptional properties. Its resistance to impact, abrasion, cutting, tearing, and UV radiation is unparalleled. In its most advanced form, the mechanical strength of Armalith® is more than seven times greater than that of steel.

To these qualities of durability, Armalith® adds comfort. It is lightweight, breathable, hydrophilic, and flexible due to the inclusion of LYCRA®. Cotton provides a soft and natural feel.

(1) - Ultra High Molecular Weight Polyethylene



• 02 - Armalith®: from motorcycles to fashion

With its strength and authentic jeans look, Armalith® initially aimed to penetrate the motorcycle gear market, starting with pants.

Indeed, 70% of motorized two-wheeler enthusiasts ride wearing traditional jeans⁽¹⁾, which are more aesthetic, practical, and comfortable than leather. However, they do not fully understand the consequences in case of a slide: in 70% of accidents (1), injuries affect the legs through laceration and abrasion from the asphalt.

By offering an alternative to leather protection, Armalith® has won over leaders in motorcycle equipment and is also expanding into outdoor markets (hiking, climbing, hunting, mountain biking...), urban mobility (bicycles, electric scooters, skateboards, unicycles...) and workwear.

Beyond protection, Armalith® is at the forefront of environmental concerns. In response to fast fashion, a more sustainable and responsible mode of consumption is emerging.

With its qualities of durability over time, reasoned production mode, and authentic nature, Armalith® provides a guarantee of durability to ready-to-wear brands.

Finally, Armalith® is branching out into unexpected areas (oyster rags, espadrilles) and is regularly the subject of prototypes that may see commercial development in the future: MotoGP pilot suits, gloves, watchstraps, small leather goods, etc.

(1) - MAIDS Study (Motorcycle Accident In Depth Study) -1000 cases of motorized two-wheeler accidents in 5 European countries.



• 03 - Armalith® Test Days: a full-scale torture test

Claiming to be the strongest denim in the world is one thing; proving it is another.

In the spring of 2022, the brand launched the first edition of the Armalith® Test Days at the Jean-Pierre Beltoise circuit (France). The goal: to test the exceptional abrasion resistance of Armalith®.

The tests were calibrated and based on a precise protocol by a team of textile engineers: constant traction speed at 28 km/h and measurement of the distance traveled until tearing, from 5 to over 80 meters.

More than 60 motorcycle jeans were pushed to their extreme limits of resistance by "guinea pigs" who volunteered: journalists, influencers, and brand managers. A bailiff controlled and certified the validity of the tests, which were secured by the stunt team of David Julienne.



ARMALITH® TEST DAYS



- **03 - Armalith® Test Days: a full-scale torture test**



The Armalith® Test Days thus confronted motorcycle jeans with the reality of the asphalt by combining the Darmstadt (abrasion speed) and Cambridge (abrasion distance) standards in a protocol more realistic than laboratory machines. From this extensive review emerged a new benchmark, a trusted third party for both manufacturers and users.

This scientific comparison between different textiles representative of the market, including all the qualities of Armalith®, took place under conditions

closest to those of a real motorcycle fall. It demonstrates, among other things, that the CE standard does not provide absolute information regarding abrasion resistance.

Example: CE **AA**-rated garments that do not protect the motorcyclist against abrasion, because over a 10m slide, the skin temperature exceeds 100°C! A criterion not measured by the standard...

Another finding: an Armalith® **AAA** jean that rivals a racing leather pants over 80m. As for non-motorcycle jeans, even from major brands, they tear in less than 5m.

[> Vidéo Armalith® Test Days](#)



**90m slide, a record
for abrasion resistance!**

The Armalith® Test Days concluded with a final test at 120 km/h. The stuntman slid for 90m and the Armalith® **AAA** jean, logically marked, resisted!

• 04 - Armalith®: a new benchmark for abrasion resistance

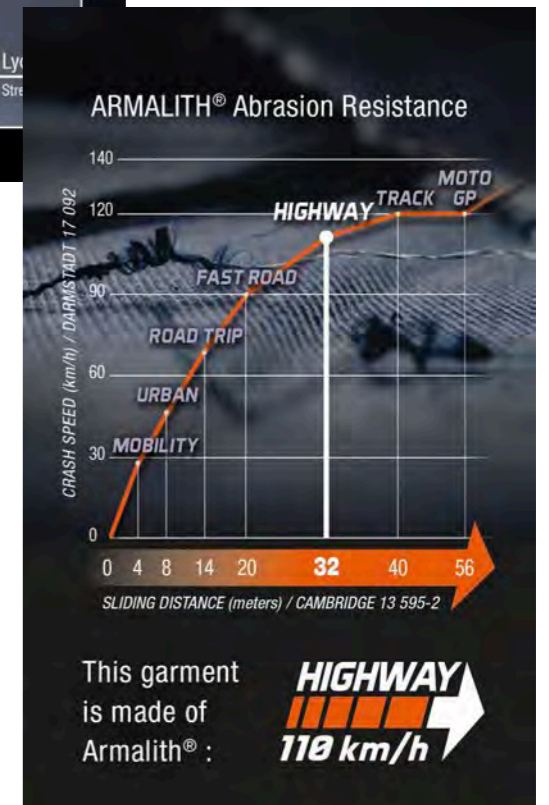
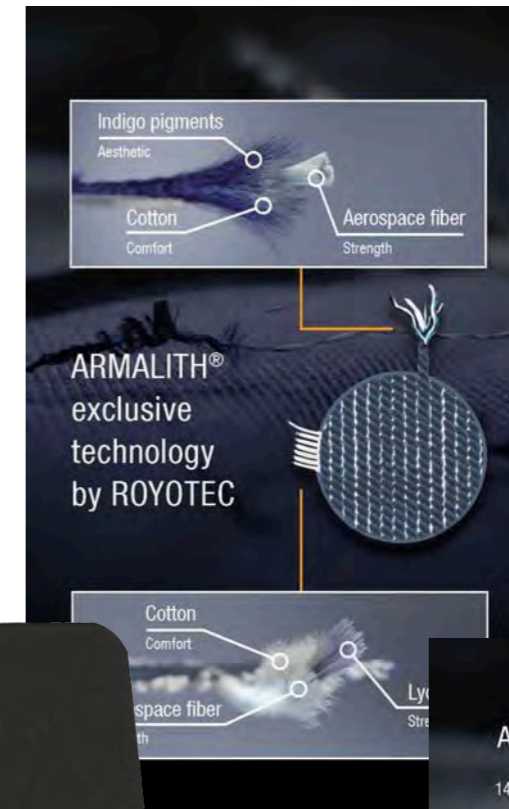
The Armalith® high-performance denim range includes over 20 variants based on:

- Abrasion resistance capabilities.
- Stretch elasticity.
- Fabric structures (denim, flat, or fancy).

These variants are segmented into 7 protection levels derived from data from Armalith® Test Days. They range from everyday use (micro-mobility) to extreme conditions (Moto GP) and are characterized by a maximum speed of resistance during a standardized motorcycle fall (17 092 Darmstadt) and a slide distance during which the skin is protected (13 595 Cambridge).

The CE standard incorporates a multitude of criteria compiled in a 60-page document. In this plethora of information, it is a challenge for motorcyclists to find the abrasion resistance of a garment, which is a crucial piece of information. The Armalith® benchmark instantly informs the consumer, with clarity and precision.

The Armalith® Hang Tag is a certificate of conformity issued to manufacturers following a strict control of the actual fabric used. The precision of its information allows to refine the level of abrasion resistance within the same class. **For example, for a product classified as AA, this resistance can vary from 70 to 119 km/h.**



• 04 - Armalith®: a new benchmark for abrasion resistance

The Armalith® range is classified into 7 performance levels according to abrasion resistance.



Abrasion protection over a distance of 4 m or following a fall at 27 km/h. Suitable for light clothing adapted to soft mobility with or without electric assistance: bicycle, skateboard, scooter...



Abrasion protection over a distance of 8 m or following a fall at 45 km/h. Recommended for motorized urban routes and fun leisure activities: scooter, skateboard, bicycle, scooter, gyrowheel, BMX, and small engines.



Abrasion protection over a distance of 14 m or following a fall at 70 km/h. For peaceful motorized practices or engaged leisure activities like downhill skateboarding, downhill mountain biking...



Abrasion protection over a distance of 20 m or following a fall at 90 km/h, while maintaining comfort with breathable, lightweight, hydrophilic, and stretch denim. Designed to meet the expectations of grand touring enthusiasts and busy urbanites.



Abrasion protection over a distance of 32 m or following a fall at 110 km/h with superior protection than leather⁽¹⁾. For long-distance travelers covering miles at a sustained pace. Durable and eco-designed, like the entire Armalith® range.



Resulting from the latest advancements in the Armalith® laboratory. Protects from abrasion over a distance of 40 m or following a fall at 120 km/h. For use on open or closed roads.



The most resistant version of Armalith®. Protects from abrasion over a distance of 56 m or following a fall at 120 km/h. Its mechanical qualities meet or exceed all the requirements set by the FIM according to the Cambridge standard 13959-2.

(1) According to the official Cambridge 13595-2 test conducted by an independent laboratory, Armalith® HIGHWAY 110 km/h demonstrated an abrasion resistance superior to that of bovine leather of equivalent surface mass (480Gr/M2) intended for motorcycle garment manufacturing.

• 05 - Armalith®: sustainable and responsible

Ethics and sincerity are core values for the creator of Armalith®.

However, it is currently impossible to source UHMWPE fibers of the desired quality outside of Asia.

For everything else, the brand strives to produce its denim within as virtuous a circle as possible by reducing its carbon footprint and natural resource consumption:

- Cotton produced in Spain according to the eco-responsible BCI (Better Cotton Initiative) standard, certified Standard 100 by Oeko-Tex® (free of harmful substances) and GMO-free;
- Less than 700 km between the fields and the production site, enabling a 42% reduction in the carbon footprint of cotton sourcing.
- Designed in France, fabric made in Spain by Tejidos Royo on a vertically integrated and eco-responsible production site that includes spinning, indigo dyeing, weaving, and finishing.
- Traceability across the entire supply chain.
- UHMWPE fiber is half as energy-intensive to produce as aramids.
- The UHMWPE fibers used according to the Armalith® patent are continuous (no microplastic shedding during washing) and untextured (no energy-intensive cracking or texturization), unlike all other technical fibers (aramid, polyamide, polyester).
- The Armalith® manufacturing processes are carried out at low temperatures, notably with the cold thermosetting of LYCRA®, which allows for a drastic reduction in energy consumption.
- No use of heavy metals in the pigments, the indigo is produced using a slow, cold, and water-free process (Dry Indigo by Tejidos Royo).
- Resistant from 200 to over a thousand washes without loss of elasticity (compared to 12 washes for fast fashion).

The Armalith® manufacturing process reduces CO2 emissions by 70% and cuts water consumption by up to 20 times compared to the manufacture of a standard jean. With a lifespan that can reach 25 years thanks to its durability and its ability to age well, Armalith® is a reliable ally for responsible consumption.

- **06 - Brand Lab Armalith®: a resource center for professionals**

Brand Lab Armalith® provides designers, product managers, developers, brands, and other professionals with the essential resources to adopt the performance and communication supports of Armalith®:

- In-depth analyses.
- Abrasion test reports.
- Fabric technical sheets.
- Pricing.
- Company profiles: rigorous selection of Armalith® certified manufacturers, ensuring the quality and compliance of cold fabrications.
- Marketing support: media resources and marketing kits, order form for certified Armalith® labels.
- Bailiff certificates.
- Technical guides: information on precautions and specific details of Armalith® product implementation.

With Armalith® Brand Lab, the brand engages its customers in its technical evolutions, marketing resources, and ensures a shared strategy aligned with its values of innovation, performance, and sustainability.



- **07** - Pierre-Henry Servajeau: portrait of an inventor



Pierre-Henry Servajeau was born in Bordeaux in 1969. As a youth, he cultivated a passion for mechanics and motorcycles, indulging in reduced model making, electronics, and tinkering with mopeds. He got a vocational bachelor's degree and then entered the professional world, notably as a cabler electrician on offshore platforms, before a radical career change...

He resumed studies in marketing and commerce. With a diploma in hand, he joined the more subdued world of the textile industry as a fabric sales director and developed a new passion for fashion, interacting with brands such as Oxbow, Hermès, Lacoste, Chanel, Agnès B...

It was during this period, in 2003, that he filed his first patent for Armalith®, an idea born from the intersection of his two passions: motorcycles and textiles, particularly jeans. *"On a motorcycle, I was either on the back wheel, the front wheel, or on the ground!"* he shares. *"It was from this intimate relationship with the asphalt that the idea of 'armored jeans' came to me."*

- **07 - Pierre-Henry Servajeau: portrait of an inventor**



As a perfectionist, it took time to elevate Armalith® to meet his standards. The look had to be that of authentic denim, an indigo with a remarkable color that patinas over time and offers true comfort to users by incorporating virgin LYCRA®.

He then needed to find the right weaver. The aerospace-grade UHMWPE fiber is not easily workable.

After a tender in 2011 among the most international denim weavers, the Spanish company Tejidos Royo became the exclusive manufacturer. Thanks to its expertise, Armalith® improved.

A development that seems far from reaching its limits: Pierre-Henry Servajeau is brimming with ideas to inscribe his fabric in the grand history of jeans.

In 2008, Pierre-Henry Servajeau organized a spectacular demonstration of Armalith®'s resistance by suspending a nearly 3-ton Hummer from a pair of jeans at the Who's Next show in Paris.



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