



Twaron Laminated Fabric Technology (LFT)

Durable, cost-effective, state-of-the-art solutions

So, if you're looking for protection at low weight, multiple layers of aramid offer a cost-effective solution. Protective vests made with Twaron are tough, last for many years, and maintain their protective properties even after long-term exposure to high temperatures.

For more information, please email us at ballistics@teijinaramid.com or visit www.teijinaramid.com

We do not accept any liability for the results of the use of these products. The technical data in this leaflet reflects our best knowledge at the time of publication. The content of this leaflet is subject to change, depending on new developments and findings, and a similar reservation applies to the properties described in it.

Twaron®

The power of Aramid

TEIJIN

Human Chemistry, Human Solutions

Custom-made materials for protective vests



A wide range of threats

The threats to modern armies and special police task forces have multiplied, creating the need for protection from all kinds of bullets and fragments as well as stabbing with sharp objects. And these days it's not only soldiers and policemen who are facing increased threats; prison guards, cash carriers and private individuals also need to be protected. The market is seeking better protection and greater comfort.

Many of today's protective vests are made from Twaron, which provides enhanced protection, more comfort, and advantageous performance/weight ratios. At Teijin Aramid we have over two decades' experience of developing advanced Twaron-based ballistic solutions, enabling the production of lighter, stronger, and more comfortable protective vests - essential equipment that will meet the needs of today's users as well as those of tomorrow.

Key benefits when using Twaron

- High ballistic protection
- Lower weight, greater comfort and longer lifetimes
- Solutions tailored to specific requirements
- Protects against penetration of bullets, fragments as well as stabbing
- Good price/performance ratio

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A wide spectrum of options for a wide spectrum of threats

Our high-performance fiber Twaron is an essential component of the modern protective vest. Conventional vests are uncomfortable and restrict movement. We've created surfaces with a unique soft textile-like texture that combine maximum protection with freedom of movement. Being lighter and more comfortable, Twaron makes a huge difference to those wearing them.

Our experts have extensive knowledge of material solutions that match the complex threats faced by today's soldiers, prison staff, and law enforcement personnel. Complex threats require sophisticated solutions. Combinations of different numbers of layers and weaves, special fabrics, laminates, cross-ply UD and coated materials – all based on Twaron microfilament ballistic fibers – represent an appropriate response to a wide range of demanding situations.

For example, although most casualties in combat are caused by fragments weighing less than 1.1 grams, soldiers also face the threat of direct firing of high-velocity rounds. Such demanding combat situations require bullet-proof vests with outstanding ballistic properties. In combination with other materials, such as ceramics, our high-performance microfilament fibers are capable of protecting against some of these high-velocity rounds. What's more, soldiers have to carry more – and heavier – high-tech equipment these days. Twaron-based vests can help reduce the weight of their protective gear.

Cross-sections of standard yarn (above) and Microfilament (below)



Cross-section of Twaron body armor showing trapped 9 mm bullet



Meeting today's – and tomorrow's – technical requirements

We co-develop custom-built solutions, together with our customers. Thanks to our own dedicated R&D and test facilities, we've been able to develop advanced new materials such as our Laminated Fabric Technology (LFT), combining the softness and comfort of microfilament fabrics with the weight reduction advantages of cross-ply UD materials.

Over the years we've also developed sandwich constructions which combine ballistic protection with protection against stabbing (Twaron Stabguard®), products that protect against side exit bullets (Twaron Sideguard), systems that protect against stabbing (Twaron SRM®), and front panels tailored to the needs of women soldiers and police officers.

Independent endorsement

Independent testing institutes investigate the ballistic limit value and the V50 value of protective clothing. Tests conducted by these independent institutes on our products, confirm the solid ballistic performance of our products. Vests made with our products meet N.I.J. as well as other international standards.

High level of support

With deep insight into production processes, we offer a very high degree of technical support, both to manufacturers and to procurement officers. Thanks to our technical know-how we can help you strike the right balance between protection and comfort and thus define precisely what's needed for a particular application. We also regularly cooperate with manufacturers, for example, when they are developing new products to meet the needs of tomorrow's high-tech soldiers.



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