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Beta Cloth

A legacy of space-proven
protection.

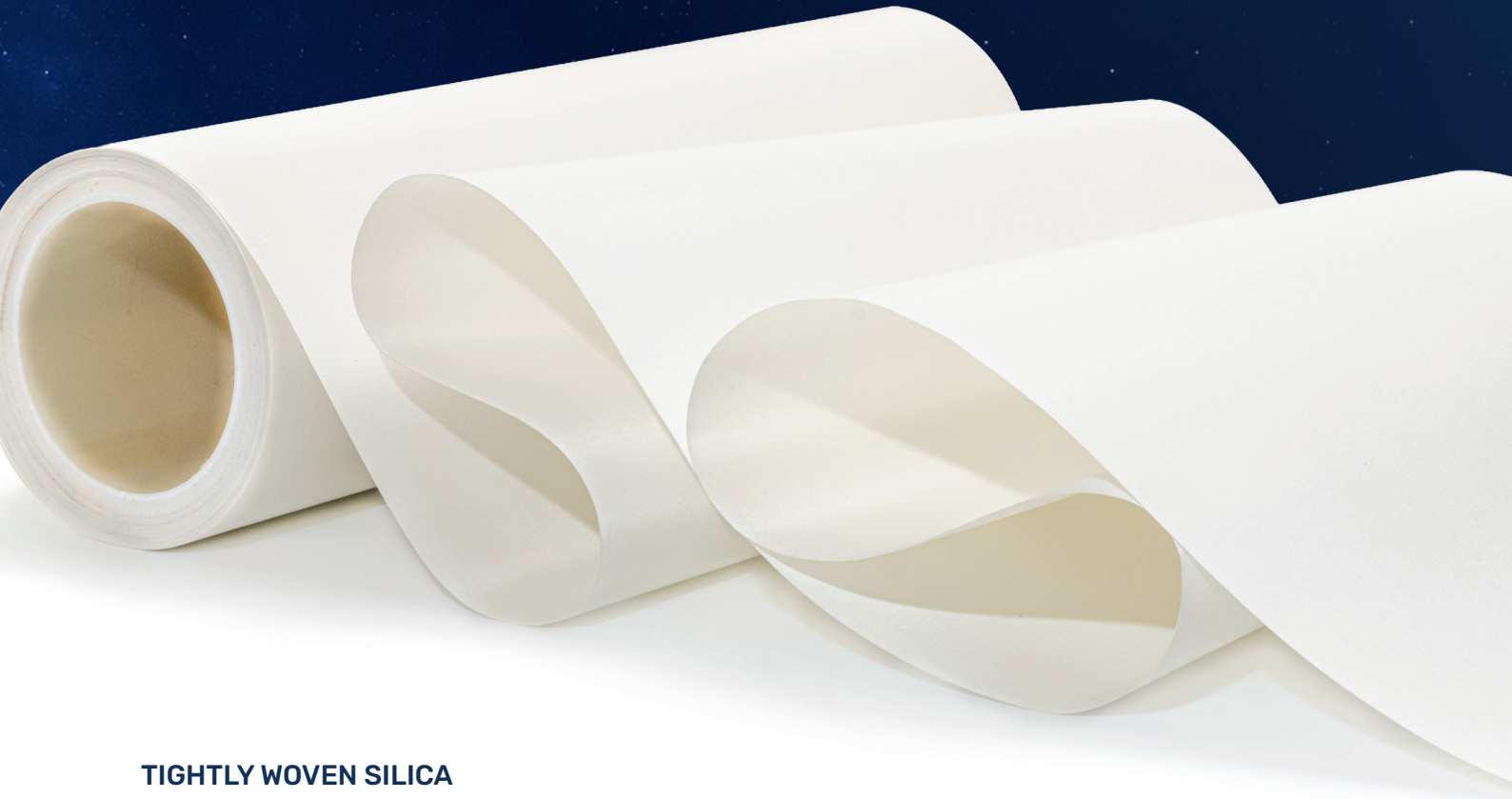


Partnerships that inspire.
Materials that perform.

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Beta Cloth

Originally developed in response to the 1967 Apollo 1 fire, Versiv Beta Cloth has continuously played an important role in space exploration, particularly in protecting crewed spacecraft and the astronauts who fly in them.



TIGHTLY WOVEN SILICA FIBREGLASS SUBSTRATE

optical and mechanical properties

The dense silica fibreglass weave provides the structural strength behind Versiv Beta Cloth, combining dimensional stability, temperature resistance and flexibility in a lightweight textile form.

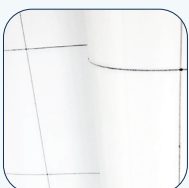
Its tight construction improves durability and physical protection, while the naturally bright silica substrate contributes to the material's characteristic white, highly reflective appearance.

PTFE COATING

chemical and thermal properties

PTFE's carbon backbone is tightly shielded by fluorine atoms, creating exceptionally strong carbon-fluorine bonds and a chemically stable, low-energy surface.

This molecular structure gives Versiv Beta Cloth excellent resistance to atomic oxygen, UV/VUV radiation, plasma exposure and aggressive chemicals, while also supporting low flammability, hydrophobicity and reliable thermo-optical performance.



ELECTROSTATIC DISSIPATIVE (ESD) VERSION

The Versiv Beta Cloth ESD version incorporates a graphite yarn grid within the fabric structure to provide controlled surface conductivity, dissipate accumulated electrical charge and help reduce the risk of differential charging and electrostatic discharge on spacecraft surfaces.

CERTIFICATIONS: ASTM E595, NORTHROP GRUMMAN, AND LOCKHEED MARTIN



SETTING THE STANDARD IN SPACE-GRADE WHITE

HIGH SOLAR REFLECTANCE AND THERMAL EMITTANCE

The pure white of Versiv Beta Cloth reflects solar radiation, helping minimise heat gain while resisting UV/VUV and plasma exposure.

High thermal emittance enables efficient heat rejection, supporting stable passive thermal control in the space environment.

The iconic white appearance of Versiv Beta Cloth is functional. Its optical properties support passive thermal control, providing high solar reflectance and low solar absorptance to help manage the thermal balance of spacecraft exposed to intense solar radiation and the vacuum of space.

This makes Versiv Beta Cloth particularly well suited as the outermost protective layer of Multi-Layer Insulation (MLI) blankets, especially in Low Earth Orbit (LEO). While the reflective layers within an MLI system reduce radiative heat transfer, Versiv Beta Cloth provides a durable external barrier between these sensitive materials and the surrounding space environment.

NON-FLAMMABLE AND FIRE-RESISTANT

PTFE is inherently non-flammable, resisting ignition and limiting flame propagation in demanding environments.

LOW OUTGASSING AND CONTAMINATION CONTROL

Versiv Beta Cloth combines a non-silicone construction with low outgassing under vacuum, helping minimise the release, migration and deposition of contaminants on sensitive spacecraft.

EXCEPTIONAL ATOMIC OXYGEN RESISTANCE

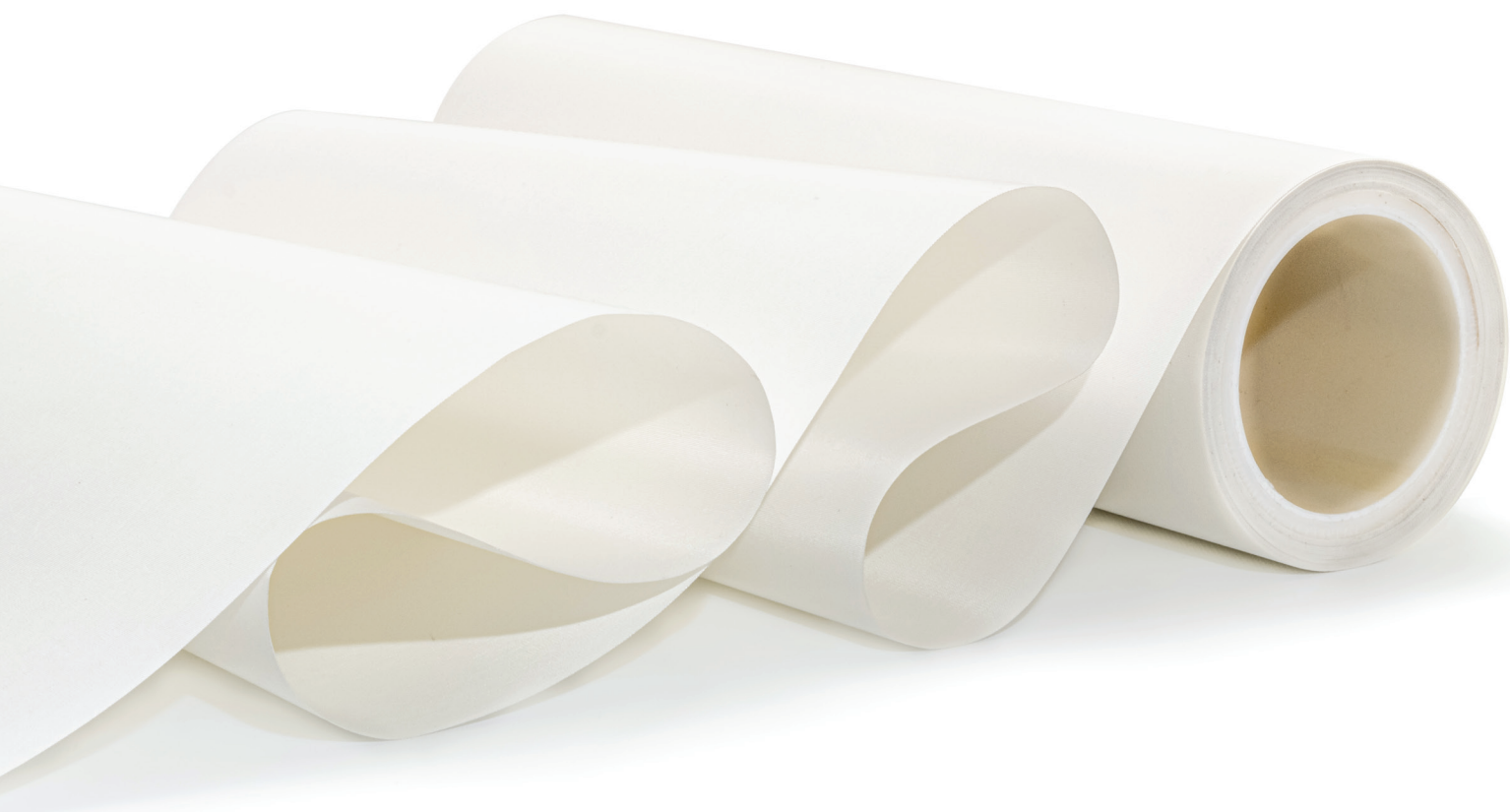
Versiv Beta Cloth provides exceptional resistance to atomic oxygen attack, helping limit surface erosion and preserve material performance during prolonged exposure to the highly reactive environment of Low Earth Orbit.

PROTECTION AGAINST MICROMETEOROID AND ORBITAL DEBRIS (MMOD)

The tough, tightly woven construction provides a durable outer layer that contributes to protection against micrometeoroid and orbital debris as part of a multi-layer shielding system.



With a proven space heritage spanning decades, Versiv Beta Cloth delivers dependable performance in the extreme conditions of the space environment. It has been used across a broad range of applications, including satellites, launch vehicles, rovers, space habitats and protective surfaces on both the interior and exterior of the International Space Station.



Beta® is a registered trademark of Advanced Glassfiber Yarns LLC (AGY).

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**Partnerships that inspire.
Materials that perform.**

**Versiv Composites:
Proudly continuing the legacy of Beta Cloth**

Versiv is a recognised expert in high-performance, technology-driven materials. With expertise focused on films, fabrics, and composite materials, we offer proven products, customised solutions, and complete systems to customers in various industries.

As space exploration continues to advance, we are committed to developing the next generation of Beta Cloth products through close collaboration with our partners and continued investment in our R&D capabilities.

CONTACT US

☎ +353 65 90 80 170
✉ contact@versivcomposites.com

Versiv Composites Limited
Kilrush, Co. Clare, V15 NW27, Ireland

www.versivcomposites.com