

What are technical textiles?

Technical textiles are textiles materials and products engineered to have high tech properties for extreme conditions e.g. fire resistance, waterproof, high strength. Many technical textiles fabrics are engineered versions of common textiles fibres such as nylon.

Classifications of technical textiles

Technical textiles are often divided into 12 categories linked to their high tech performance properties in different extreme conditions.

Agrotech	Agriculture e.g. crop protection, land erosion, netting
Buildtech	Buildings e.g. moisture control, insulation, architecture
Geotech	Road construction and civil engineering e.g. reinforcement, erosion
Indutech	Industry e.g. filters, ropes, sound proofing, conveyor belts
Packtech	Packaging and transport e.g. cargo nets, strapping, tarpaulins
Oekotech	Environmental protection e.g. filters, waste treatment
Medtech	Medicine e.g. artificial ligaments, implants, wound dressings
Mobiltech	Transport e.g. interiors, airbags, inflatable boats, engine parts
Protech	Personal protection e.g. fire fighter, bullet proof, high vis
Sportstech	Leisure and sports e.g. clothing, sports equipment
Hometech	Interiors e.g. houses, boats, furnishings, insulation
Clotech	Performance clothing e.g. winter coats, waterproof shoes

Kevlar

This is an aramid textile from the nylon family. It is engineered to be five times stronger than steel of the same weight, is fire resistant, as well as being cut and ballistic resistant. Kevlar is used in bullet proof vests, ropes, footwear, helmets, as well as being used as a composite material.



Nomex

This is also an aramid textile. It is fire resistant with the added benefit it is also heat resistant so it protects the wearer from heat as well as flames. Nomex is used in protective suits for Formula 1 drivers, fire blankets, electrical insulation, building insulation, as well as for domestic products such as textiles oven gloves.



Performance properties

The high tech properties of technical textiles mean that textiles materials can be used to replace materials traditionally considered high performance materials e.g. metals. This includes uses in architecture and road building which aren't traditionally linked to textiles materials.



Many technical textiles are developed for use in extreme conditions e.g. for the army and space travel. Many end up on our high streets in every day products e.g. Gore-Tex used for waterproof and breathable clothing and footwear.

