

STRETCH THAT PROTECTS.
DURABILITY THAT MOVES.

TECH INSIGHT

IBQ-MEC-511

**MOBILITY, RESISTANCE AND
COMFORT IN MOTION**

YOU DO. WE PROTECT.


TEXTILES PROTECTING LIVES

THE TECHNOLOGY INSIDE STRETCH FABRICS VS RIGID

In performance apparel, fabric construction directly influences how a garment moves, protects and performs over time. Traditional rigid fabrics have long been valued for their structural stability and mechanical resistance, especially in workwear, tactical apparel and reinforcement areas. However, modern users require more than protection: they need garments that move naturally with the body, reduce restriction and maintain comfort during continuous activity.

This is where stretch fabrics bring a clear technical advantage. By incorporating elastane into a strong polyamide base, stretch constructions such as IBQ-MEC-511 combine durability with controlled elasticity. The result is a fabric that can resist demanding use while adapting to body movement, making it especially suitable for outdoor, tactical, motorsport, workplace and emergency response garments.

STRETCH FABRICS RIGID CONSTRUCTIONS

Stretch fabrics move with the wearer, adapting to body movement and recovering their shape after use. This improves comfort, fit and freedom of movement, especially in high-mobility areas such as knees, elbows, shoulders and seat areas.

Rigid fabrics provide structure, stability and a firm hand feel, making them useful in applications where shape retention and mechanical resistance are key.

In performance apparel, this means less restriction and better mobility without compromising durability.

However, they can limit mobility. Without stretch, garments often need extra volume or articulated cuts, which can increase bulk and reduce comfort during active use.

BI-STRETCH PERFORMANCE

Bi-stretch construction allows the fabric to extend in more than one direction, supporting both horizontal and vertical movement. This is especially important in garments that need to perform under real body motion, not only in static conditions.

In articles such as IBQ-MEC-511-WR and IBQ-MEC-511-CAM-DWR, the combination of 92% Polyamide and 8% Elastane creates a strong but flexible base. The fabric is engineered to deliver tensile strength, abrasion resistance, snagging resistance and pilling resistance, while still offering elasticity and recovery. This balance makes it suitable both as a main fabric and as reinforcement in areas exposed to repeated movement.

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LAMINATED STRETCH STRUCTURES

Stretch performance can also be combined with additional protection through laminated structures. In IBQ-MEC-511-JRS-WR, the fabric uses a 3-layer construction that includes a waterproof and breathable polyurethane membrane and a flexible polyester jersey lining.

This type of structure adds weather protection while maintaining comfort and mobility. The outer stretch fabric provides mechanical resistance, the membrane helps protect against rain and external moisture, and the inner jersey improves wearer comfort. In simple terms, it is not only a stretch fabric: it is a complete protective system designed for active use in demanding conditions.

WHY IT MATTERS IBQ-MEC-511

The choice between stretch and rigid construction is not only a matter of comfort. It affects how the garment performs, how long it lasts and how well it protects the wearer during movement.

Rigid fabrics can be strong, but strength alone is not always enough. In performance apparel, the fabric must resist abrasion, recover after stress, maintain its shape and allow the user to move without restriction. Stretch fabrics solve this challenge by combining mechanical durability with flexibility, making them ideal for garments that need to protect without limiting action.

For modern protective apparel, movement is part of performance. A fabric that stretches, recovers and resists is

IBQ-MEC-511 is a high-performance stretch fabric family engineered for active and protective apparel. Its polyamide-elastane base delivers strength, durability and controlled elasticity, while its different versions allow adaptation to specific end uses: water-repellent outdoor garments, camouflage tactical applications and laminated weather-protective constructions. Designed for main fabric and reinforcement areas, IBQ-MEC-511 offers a smart balance between resistance and mobility. It is made for garments that need to endure tough conditions while allowing the wearer to move freely, comfortably and confidently.

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DURABILITY THAT MOVES.**

bluesign
SYSTEM PARTNER



**YOU DO.
WE PROTECT.**