



Accepts No Compromise



Moisture Barriers

LION® is committed to delivering the most innovative and comfortable turnout gear on the market, providing firefighters with superior protection against the hazards they face and effective heat stress management in the range of environments they encounter. As part of this commitment, LION® chooses CROSSTECH® and GORE® moisture barriers for all of its PPE products — turnout gear, boots, and gloves. In addition to exceeding the minimum requirements of the NFPA 1971 Standard, GORE® moisture barriers provide other valuable performance advantages, are field proven day after day, and are produced using proprietary technologies and processes unique to Gore. Some of these additional advantages associated with turnout gear using CROSSTECH® black moisture barrier include:

Moisture Barrier Feature	CROSSTECH® Black Moisture Barrier	STEDAIR® 4000 Moisture Barrier	Further Explanation
Heat Stress Management: Resistance to Sweat Evaporation	Less Than 29 m²Pa/W with commonly used shell and thermal liner	At least 50% greater resistance	Heat stress in warm conditions can be severe, and enabling sweat to evaporate through the turnout materials is critical to managing it. The European Standard for firefighting garments (EN469) requires testing the resistance to this evaporation – the lower the resistance, the better. Studies have indicated that this difference can be physiologically significant.
Major Metro Proven	Used in all US major metro departments	No	For almost 30 years of use in the most demanding conditions, large metro fire departments (greater than 1500 paid firefighters) continue to choose the performance and durability of GORE® moisture barriers. CROSSTECH® black moisture barrier is the latest evolution of moisture barriers from W. L. Gore & Associates, Inc.
Breathability After Heat Exposure	Maintained initial breathability	Lost more than 20%	Repeated heat exposures, even short durations, can cumulatively degrade some materials. While THL, which is used in the NFPA 1971 Standard, is a measure of composite breathability, this test focuses on the performance of the moisture barrier only. Gore designed its moisture barriers to maintain their high levels of initial breathability.
Wet Flex Durability to Leakage	More than 200 hours	Less than 100 hours	Turnout gear gets wet, flexes, and abrades on the job. This test burdens a barrier with accelerated flexing and abrasion in a wet environment to help understand in-use durability. The US military, who uses a similar test, requires minimums of 216 hours and 168 hours in two active outerwear garment programs.
Free of Added Brominated Flame Retardants (BFRs) and Antimony	Yes	No	Gore developed these flame retardant laminates without the use of BFRs and the heavy metal Antimony. This helps enable Gore's moisture barriers to meet the product safety criteria of Oeko-Tex® Standard 100, Class II. This independent, internationally accepted standard ensures that textiles are sufficiently free of harmful substances, so they can safely be worn as intended.
Total Weight	4.7 osy	17% heavier	CROSSTECH® black moisture barrier is the lightest two-layer woven moisture barrier available. The impact/benefit of this level of weight difference is currently debated among industry experts.

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