

**Extensive Product
Testing To Ensure
Maximum Performance**



**GORE-TEX
PYRAD[®]**
FABRIC



Extensive Product Testing To Ensure Maximum Performance



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Waterproofness:

When constructing a liquid-proof product, there are a number of test criteria Lac-Mac follows to ensure our garments are waterproof. First, all seams on our impermeable garments are expertly seam sealed with proprietary equipment, using GORE-SEAM® Tape, which provides a robust system against liquid penetration. Sealing equipment is continuously monitored for temperature, pressure and speed ensuring consistent product performance.



Since 1920

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**ALL GORE® BRANDED PRODUCTS
MUST PASS EXTENSIVE RAIN SHOWER
TESTING BEFORE THEY ARE APPROVED
FOR PRODUCTION.**

Next, full garment prototypes are sent to W.L. Gore where they are vigorously rain shower tested to storm conditions. The rain shower test exposes garments to a wide range of simulated rain conditions from moderate to extreme, vertical, and wind driven, while rotating the mannequin which is equipped with sensors to detect leakage. Should any leaks be detected, the design is either rejected or requires modification to correct performance before re-testing.

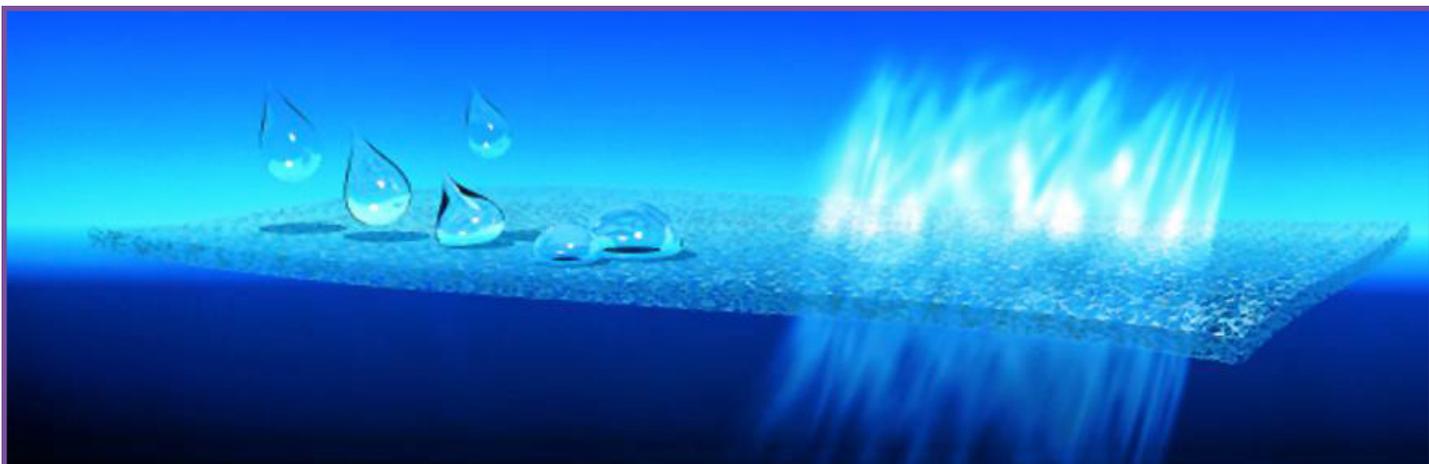
Additionally, Lac-Mac regularly tests products internally using a Hydrostatic Head Tester. This test for waterproofness, applies water under pressure to vulnerable points such as seams to ensure they are liquid-proof, with no leaks.

Durability:

All Gore fabrics are tested for resistance to abrasion. The outer fabric layer must be able to withstand the rugged day-to-day conditions the garment will be exposed to. The Martindale Abrasion Tester rubs the fabric repeatedly against a rough surface with considerable pressure. Each rub (cycle) simulates 12 hours of actual wear. We performed abrasion testing on GORE-TEX PYRAD® to beyond 20,000 cycles with no breakdown of the face fabric. 20,000 cycles represents approximately 240,000 hours of wear, with minimal surface abrasion evident and the barrier membrane uncompromised.

Breathability:

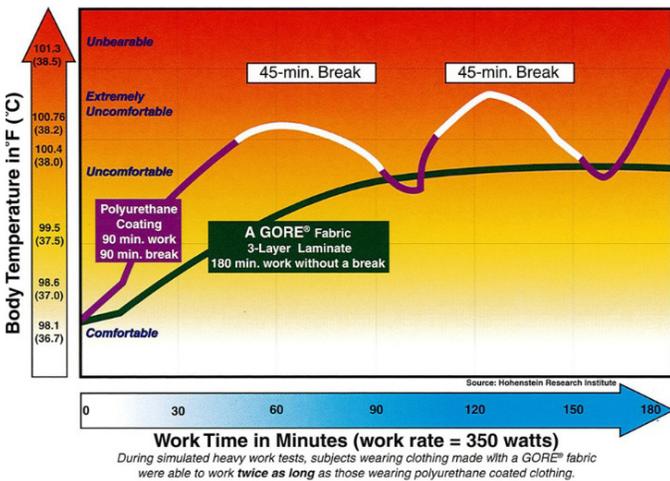
GORE® fabrics, which are engineered to be both waterproof and breathable at the same time begins with a GORE® membrane. The membrane is the heart of all GORE® products. It contains over 9 billion microscopic pores which are approximately 20,000 times smaller than a drop of water, but 700 times



bigger than a water molecule making the membrane completely waterproof from the outside, while allowing perspiration to escape from the inside. The industry accepted method for measuring breathability is test method ASTM E96 which measures values of water vapor transfer through materials over a 24 hour period.

Comfort:

While breathability plays an important role in comfort, external influences such as hot or cold temperature, wind, humidity, and rate of exertion are aiding factors to body temperature, and can contribute to climatic stress. Optimal body temperature reflects a careful balance between heat production and heat loss. GORE® fabrics allow the wearer to remain cool in warm conditions and warm in cool conditions helping the body sustain its core temperature. Studies conducted in other industries and by the military have shown that maintaining body core temperature within an optimal range helps to minimize loss of mental acuity and manual dexterity. Personnel who are not distracted by discomfort are able to work productively for longer periods of time.



High-Visibility:

Garments made using compliant high-visibility fabrics significantly aid in workers safety by ensuring the wearer can be seen under both day and night conditions. Lac-Mac’s FR ARC-Flash outerwear has been 3rd party tested, and our High-Visibility Yellow as well as our High-Visibility Orange meets both the CSA Z96 Standard as well as the more stringent U.S. Standard ANSI/ISEA 107. Products which do not meet a high-visibility standard are not providing workers with adequate visibility during daylight and low light environments. Visibility during night conditions is supported by retro-reflective markings which are applied to both the Jacket as well as the Pant and Overall. Lac-Mac uses only 3M Scotchlite™ Reflective FR Tape which offers the best in reflective performance for the life of the garment.

Wear Trials:

While laboratory testing is crucial, nothing speaks to performance better than real garment wear trials in actual use environments. Extensive fitness for use wear trials with Linemen in the utility market were conducted across North America, including 3 utilities located within the wettest regions of the United States. Results of those trials provided validation that Lac-Mac FR ARC-Flash outerwear garments made with GORE-TEX PYRAD® fabric not only passed field tests, but received outstanding accolades from all participants within the trial. 96% of the participants volunteered to ‘buy these garments with their own money if necessary’.

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