

SOLUTIONS FOR REAL AND OFTEN COMPLEX PROBLEMS



Warning: No products, including garments and accessories, protect completely, even when new; their protective performance will decline with wear, tear, abrasion, and other damage associated with use.

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GPF2115.0926.3

TECHNOLOGIES THAT EMPOWER

At Gore, we're a community of empowered and passionate Associates that create and leverage our advanced material capabilities to enable our customers to confidently push boundaries and improve people's lives across 15 diverse industries globally.



01. NASA's Apollo 11 astronauts install seismographic equipment connected to the lunar lander with a small, lightweight Gore cable.
02. Fishing line with GORE® Performance Fibers.
03. Our medical devices treat complex cardiovascular conditions as well as repairs of soft tissue such as hernias.
04. Troops around the world depend on gear that protects them from extreme and unpredictable conditions.
05. Head-to-toe personal protective equipment is specially engineered to help first responders manage heat stress better in a broad range of conditions.
06. Whether you need a reliable waterproof jacket to run a 10K, or a stylish windproof jacket for commuting to work, outerwear made with our product technologies is designed to keep you moving.
07. With the longest lasting tone, Elixir® Strings eliminate distractions and keep you playing whenever, wherever creativity strikes.

Every day we build upon our foundation of integrity, innovation, and sound science to create unique and valued products and services, where the cost of failure could be life critical. Our customers rely upon us to deliver relevant solutions that perform consistently as promised every time in some of the most challenging environments.

“

In appraising the contributions I might make to society...I have no choice; I'm compelled to try to carry out my plan.”

Bill Gore, 1957



Our company founders, Bill and Vieve Gore, turned their dreams into reality by fostering an environment for creativity and collaboration, leading to **technologies that empower** improvements in ways you probably didn't imagine before today. From technologies that enhance the safety and performance of firefighters to those that improve patient outcomes, or explore the origins of the universe, our products make meaningful differences. As we look to the future, we will build on our heritage and renew our aspiration as a purpose-driven enterprise that delivers on our promise of Together, Improving Life.

NFPA 1970 (71) STANDARDS

Formal revisions occur roughly every five years to address evolving threats and promote the adoption of newer technologies to combat them. Public participation is encouraged during the development process to ensure various perspectives and issues are considered. It is a fully-open, consensus-based process, and we encourage users to participate by submitting comments during the draft stages. Visit nfpa.org website to learn more about the standards development process.

There were several new requirements that affected the moisture barrier in the latest edition, such as:

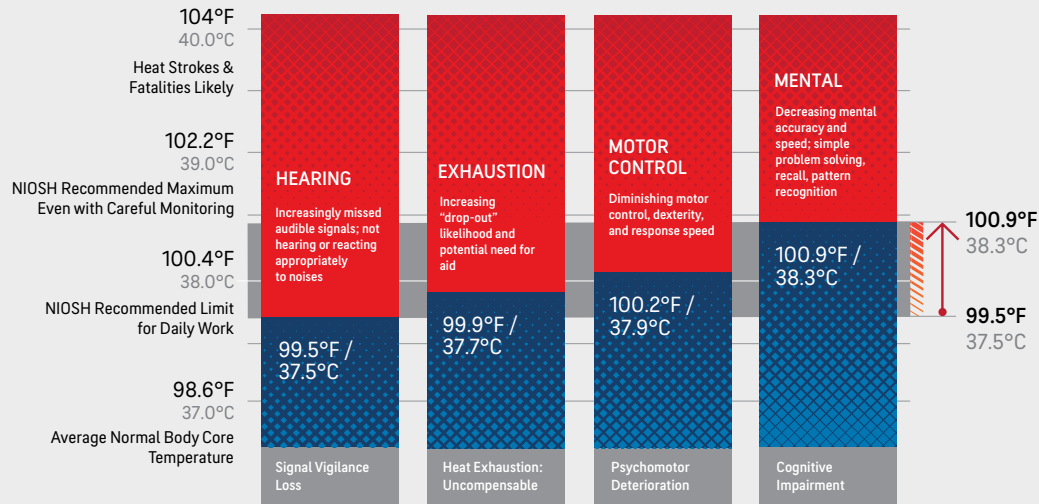
EVAPORATIVE RESISTANCE (RET) BREATHABILITY REQUIREMENT

Recent human trials confirmed that Ret numbers directly correlated with firefighters’ physiological response, whereas THL did not. Once a body core temperature of 99.5°F is reached, each increase of only 0.1°F is physiologically significant, leading to increased risk of hearing loss, heat exhaustion, decreased motor control and mental accuracy.

SMALL CHANGES IN BODY CORE TEMPERATURE MATTER

United States military studies have shown that once your body reaches 99.5°F, even an increase of only 0.1°F is significant.

EFFECTS OF RISING BODY CORE TEMPERATURE ►



As the external environment approaches 95°F, your body’s ability to lose heat through conduction is eliminated. Since THL includes a conduction element in its equation, it does not provide adequate information on how gear will perform in warmer environments which are common to firefighters. The only way to lose body heat through turnout gear in this hotter environment is when your liquid sweat evaporates off the skin. The Resistance to Evaporative Heat Transfer (Ret) is used to determine how much your gear restricts this evaporation process.

LIGHT DEGRADATION (UV) TESTING

The entire composite is now subjected to the light chamber to simulate a more realistic exposure, since the moisture barrier doesn’t function in isolation – it works in tandem with the outer shell and thermal liner. Alternative materials are more likely to pass this test that challenges the degradation resistance of the moisture barrier.

OPTIONAL LEVEL 4 (PHI-X BACTERIOPHAGE) VIRAL PENETRATION

A required level 4 viral bacteria penetration test for garments in the 2018 edition has been replaced with a level 3 test in the 2025 edition, which instead requires two different waterproof tests that are significantly easier to pass. This will allow for a wider selection of materials to enter the market.

NFPA RESTRICTED SUBSTANCE LIST (RSL) ESTABLISHED

This list was included primarily to address growing health and environmental concerns related to chemicals used in protective gear. Independent testing and documentation upon certification ensures the gear components contain very low or no levels of the listed chemicals.

NFPA OPTIONAL TOTAL FLUORINE TEST

Gear that meets this optional test can carry a manufacturer’s label that states: “THIS [type of protective element] UPON CERTIFICATION HAS A PFAS (TOTAL FLUORINE) CONCENTRATION OF NO MORE THAN 100 PPM.” Keep in mind that meeting the restricted substance list (RSL) does not mean the product also passes the optional total fluorine test.

PASSING RSL ≠ The Optional Labeling

TPP TEST METHOD

The enhancements in sensor calibration and burner alignment ensure repeatability and reliability of the test results. Instances have been seen where composites that historically passed the 2018 edition may now fail the 2025 edition.



NEW MOISTURE BARRIERS



ADVANCING THE SCIENCE

You’ve heard about the vast depth and breadth of our heritage, and now the latest GORE-TEX® CROSSTECH® moisture barriers reflect the company’s ongoing commitment to advancing the science of personal protective equipment.

Before we introduce anything into the market, our GORE-TEX® CROSSTECH® products have to meet high standards—our own. Standards that deliver unparalleled engineering for first responders. It’s what you’ve come to expect from us.

Gore delivers more than a high-performance laminate, we provide moisture barrier fabric, seam tape, and repair materials that help support manufacturing, maintenance, and long-term garment performance.

NFPA 1970 (71) COMPLIANT

Our GORE-TEX® CROSSTECH® Innovate Moisture Barrier complies with the optional requirement of NFPA 1970 (71) standard. Firefighters can achieve optimized performance through our full-system, full-performance integrated product package—where the advanced engineering of every component, including our moisture barrier fabric, seam tape, and repair tape, works together to optimize overall system performance.

WASH DURABILITY

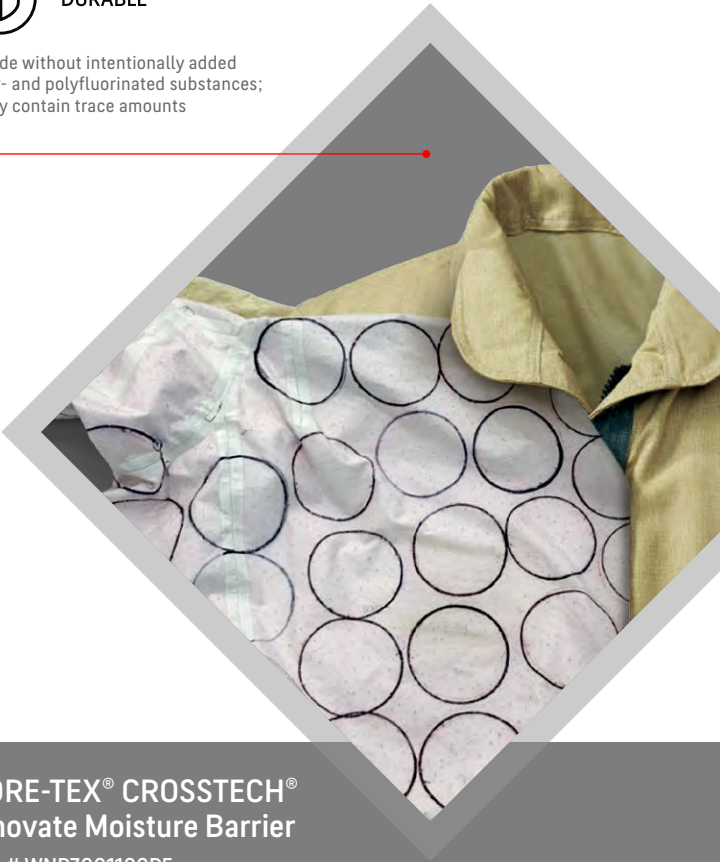
Wash durability is critical to maintaining clean gear, so we performed several wash studies through Verified ISPs that confirmed consistent material integrity and seam performance. We evaluated this liner across **90 individual test sites after rigorous washes**, resulting in a 98% pass rate overall.

SELECTING YOUR BARRIER

Because departments face different challenges, we’ve created choices in a portfolio of innovative barriers that perform best in their class.

- BLOOD-BORNE AND VIRAL PATHOGEN PROTECTION
- THERMALLY STABLE
- PENETRATION RESISTANT TO NFPA COMMON CHEMICALS
- WATERPROOF
- PFAS-FREE* LAMINATE
- BREATHABLE
- DURABLE

*Made without intentionally added per- and polyfluorinated substances; may contain trace amounts



Our newest NFPA 1970 (71) Moisture Barriers

GORE-TEX® CROSSTECH® Endure Moisture Barrier
Part # KRVC001100
Unmatched combination of durability and breathability for more extreme conditions and frequent washings.

GORE-TEX® CROSSTECH® Prime Moisture Barrier
Part # NOMW001000
Excellent breathability to help manage heat stress better, while being component recognized to the NFPA 1970(71) standard and compliant with EN 469.

GORE-TEX® CROSSTECH® Innovate Moisture Barrier
Part # WNPZ001100PF
Reliable NFPA-performance that complies with the optional requirement of NFPA 1970(71) standard.

High Breathability	◆◆◆◆	◆◆◆◆	◆◆◆
Outstanding Durability	◆◆◆◆	◆◆◆	◆◆
Limited lifetime warranty ¹	Yes	Yes	Yes
Materials for field repairs	10 Years	5 Years	5 Years
Upon certification had a PFAS (total fluorine) concentration of no more than 100 PPM	No	No	Yes
Seam tape and repair tape durability tested after wash	Yes	Yes	Yes
Remained liquid penetration resistant after 2.5X NFPA requirement	Yes	Yes	Yes

1. Subject to NFPA 1850, 2026ed retirement requirements, against manufacturing defects and workmanship

GORE-TEX® CROSSTECH® FOOTWEAR FABRIC

WE'VE ALREADY PUT 500,000 STEPS
ON THEM BEFORE ANY BOOT WITH
OUR FABRIC HITS THE RIG.

During your lifetime, it's likely that you'll walk
approximately 115,000 miles. That's like circling the globe
on foot more than four times. Do you have the right boots
for that journey?

GORE-TEX® CROSSTECH® Footwear Fabric meets and
exceeds the standards for blood, body fluid, and NFPA
common chemical penetration resistance. Every seam in a
footwear bootie is durably seam-sealed with GORE-SEAM®
tape. In fact, 100% of the booties are tested at the factory to
ensure quality and waterproof performance.



GORE-TEX® CROSSTECH® PRODUCT TECHNOLOGY

- BLOOD-BORNE AND VIRAL
PATHOGEN PROTECTION
- PENETRATION RESISTANT TO NFPA
COMMON CHEMICALS
- BREATHABLE
- DURABLY WATERPROOF
- PFAS-FREE* LAMINATE

* made without intentionally added per- and polyfluorinated substances; may contain trace amounts.



Our wet flex test places boots on
advanced, sensor equipped artificial feet
to replicate up to 500,000 steps in wet
conditions. If moisture enters, the machine
stops and indicates location of the leak.



The Wicking Test identifies the water
wicking behavior of the footwear
components, including textiles, laces,
webbings, threads, zipper, foams, heel
counters and other footwear components

GORE-TEX®
PRODUCTS



GORE-TEX® CROSSTECH® GLOVE INSERTS

OUR HANDS NEVER QUIT. DO YOUR GLOVES?

Every time your hand flexes and bends, the glove insert rubs against the glove shell, creating friction that leads to abrasion and wear over time. GORE-TEX® CROSSTECH® Glove Inserts resist this kind of wear and tear better than any other breathable barrier, passing the water leakage test after 150+ abrasion cycles. The durable GORE-TEX® CROSSTECH® Barrier provides long-lasting penetration protection against blood, body fluids, common chemicals, and cold, wet weather.

GORE-TEX® CROSSTECH® Glove Inserts are made from
tough laminates and are auto-sealed to ensure the seams
are reliable, repeatable, and consistent. They maintained
their liquid-resistant performance even after exposure to
contaminants and multiple cleaning cycles.

Dry insulation is more effective than wet insulation. GORE-TEX®
CROSSTECH® Glove Inserts help keep insulation dry as they
repel outside moisture while allowing sweat vapor to escape.
Plus, gloves dry out faster between calls.

Protective gloves won't protect if they need to be removed
to get the job done. GORE-TEX® CROSSTECH® Glove
Inserts provide superior dexterity through improved finger
flexibility, better feel, and better fit. Superior dexterity
makes it easier to keep gloves on, improving safety.



GORE-TEX® CROSSTECH® PRODUCT TECHNOLOGY

- BLOOD-BORNE AND VIRAL
PATHOGEN PROTECTION
- PENETRATION RESISTANT TO NFPA
COMMON CHEMICALS
- DURABLY WATERPROOF
- BREATHABLE
- VERY ROBUST
- THERMALLY STABLE



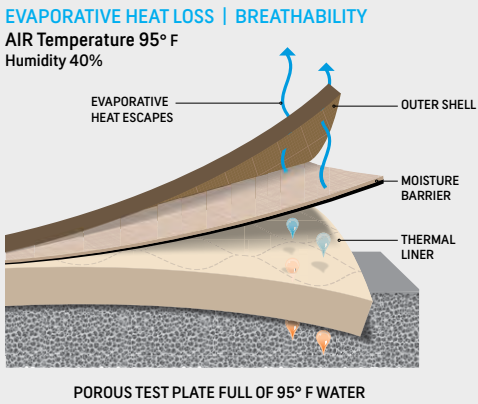
The GORE Whole Glove Leak Tester
is the first practical leak detector
for gloves. It fills gloves made with
GORE-TEX® CROSSTECH® Glove
Inserts with pressurized air, making
even tiny pinholes visible if bubbles
appear in a water trough.

RET VS THL

RESISTANCE TO EVAPORATIVE SWEAT (Ret) VS TOTAL HEAT LOSS (THL)

It's extremely important to consider your gear's Ret value, because your body's ability to lose heat through conduction is eliminated in warmer or sunny conditions and it solely relies on evaporative cooling. Since THL includes a conduction element in its equation, it does not provide adequate information on how gear will perform in warmer environments which are common to firefighters.

Evaporative Resistance (Ret)

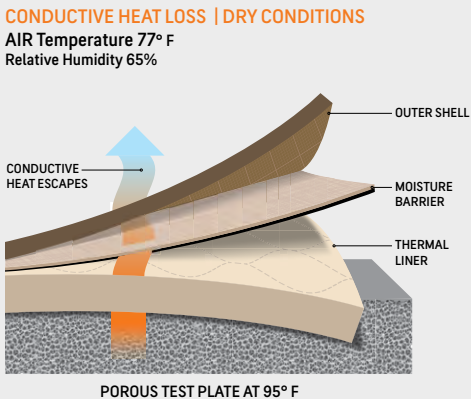
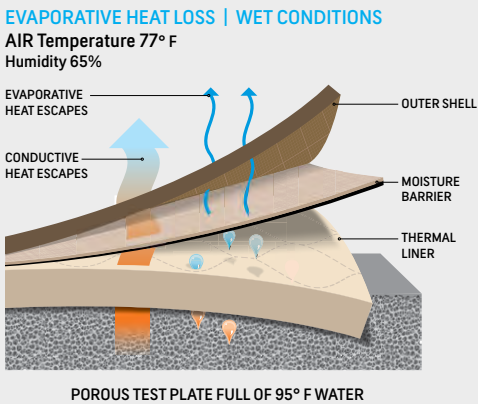


- ◆ A warmer test environment simulates warmer and sunnier days when heat stress is higher
- ◆ As the external environment approaches 95° F, your body's ability to cool down through conduction is eliminated
- ◆ Conductive heat loss is not part of the test
- ◆ A lower number is desired since it's measuring the resistance a composite is creating for sweat evaporation to escape
- ◆ Per the NFPA 1970 standard, garment composites shall have an evaporative resistance value of less than or equal to 45 Pa·m²/W

Ret: HOW IT WORKS

Using the Sweating Guarded Hot Plate, this test focuses strictly on wet heat loss or evaporation. The result is a value that indicates how much resistance your turnout gear layers create for evaporation (aka sweat vapor) to move through them, so a lower number or less resistance is better. The environment at which this test is ran is 95°F with 40% relative humidity.

Total Heat Loss (THL)

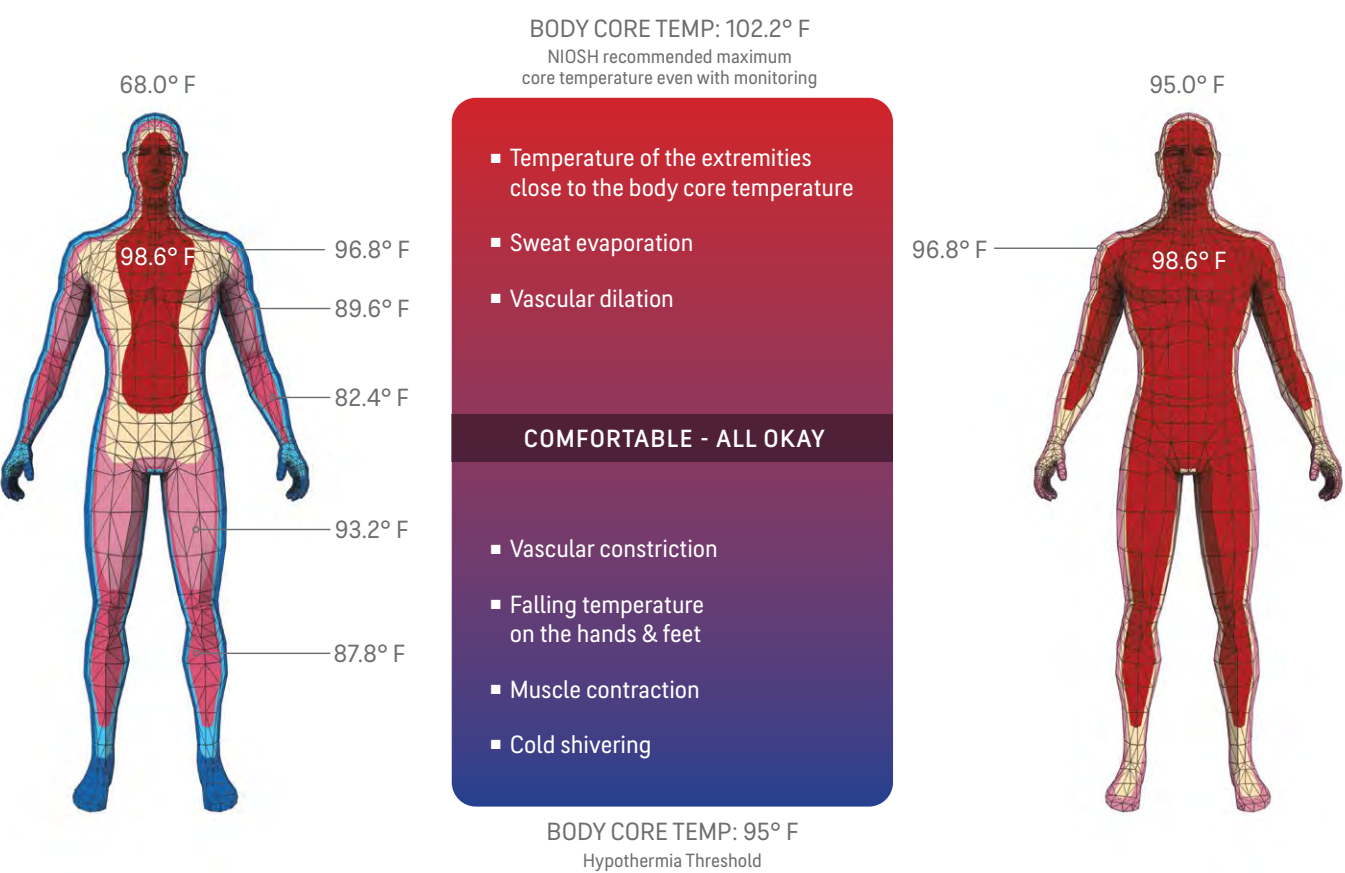


THL: HOW IT WORKS

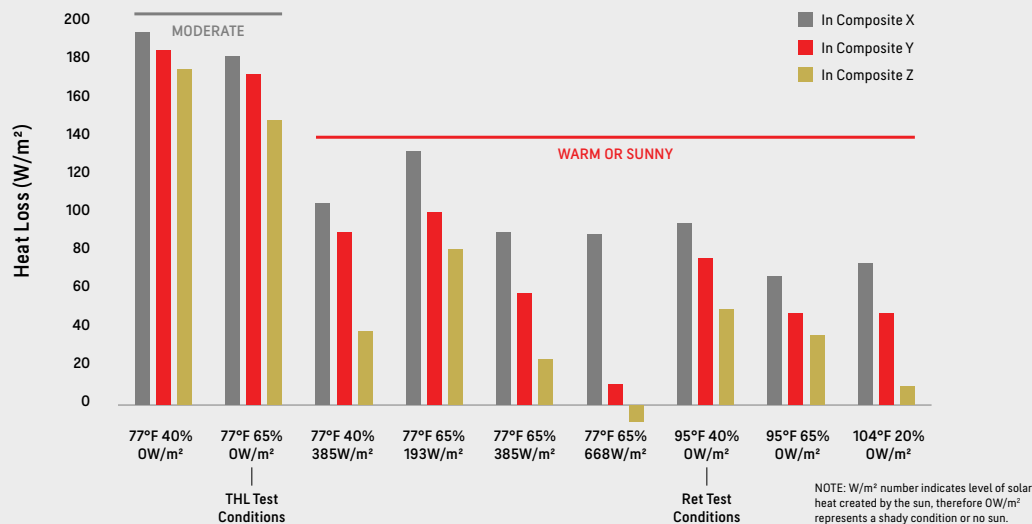
Also using the Sweating Guarded Hot Plate, this test renders its results through a complex equation that calculates a combination of wet heat loss (evaporation) plus a dry heat loss (through conduction) achieved by your turnout gear layers, so a higher number is better. The environment at which this test is ran is 77°F with 65% relative humidity.

THE IMPORTANCE OF MANAGING HEAT STRESS

Our bodies work hard to maintain a narrow body core temperature range between roughly 97 and 99 degrees. When we're in situations that push these temperatures beyond this narrow window, in one direction or another, our body's ability to thermoregulate, or maintain an optimum temperature, can become disrupted. This causes us to become too cold or too hot, creating detrimental effects on the ability of various body organs to function properly.



HEAT LOSS ACROSS 9 ENVIRONMENTS



Ret provides a reliable way to compare various composites in a wide range of conditions.

THL only shows how a material performs in one specific test environment. This test won't indicate how the material will perform in other conditions.

Watch how gear breathability is tested ►



EXTENSIVE PRODUCT TESTING

PROVING OUR COMMITMENT

Every new product containing Gore materials is put through the paces in our Gore testing lab. If it survives there, then it's put to the ultimate test for performance and comfort in actual field use. Finally, if it passes the entire gauntlet of tests, then it earns the right to carry the GORE-TEX® brand. **YOUR SAFETY. YOUR PERFORMANCE. OUR COMMITMENT.**



1. MATERIAL
Innovation behind proprietary films, textiles, and adhesives



2. SYSTEM
Evaluate performance of product construction



3. HUMAN
Understand the impact to the wearer



4. FIELD USE
Reliable performance for the intended use



Gelbo Flex	Centrifuge	Gore Environmental Chamber	Footwear
Heat and Thermal Shrinkage Resistance	Glove Liner Retention	NC State University	Garments
Hydrostatic	Mechanical Flex		Gloves
Liquid Penetration	Pyroman		
Martindale Abrasion	Whole Glove Leak		
Mechanical Leak			
MVTR			
Ret			
Stored Energy			
THL			
TPP			
Vertical Flame			
Wash Durability			
Wyzenbeek Abrasion			

FROM MATERIAL INSIGHT TO REAL-WORLD CONFIDENCE

WE'RE INNOVATING FOR A BETTER TOMORROW.

By combining market insights with our materials science expertise, we aim to deliver meaningful, uncompromised solutions that solve real-world problems. How we work inspires an entrepreneurial, inventive spirit that brings diverse perspectives together to explore possibilities where none presently exist. We combine creativity with holistic experience to boldly embrace bigger challenges, pioneer unique solutions, and unlock new opportunities.

We know that real progress means evolving together. As we drive the future of materials science innovation for high-performance technical garments, footwear and accessories, we're committed to open dialog, collaboration, and performance you can trust.

For half a century, Gore's Fabrics business and the GORE-TEX® Brand have partnered with innovators to shape the future of performance materials. Our journey continues by listening, collaborating, and co-creating, so we're all ready for what's next.

“As a materials science company, much of the knowledge that we have developed over the last 50 years isn't specific to a singular material. This expertise and deep understanding of our applications is what enables us to create complementary, durable products for use in GORE-TEX® products.”

Matt Decker, Gore's Global Fabrics Technical Innovation Leader



SOLUTIONS
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