



GORE-TEX®
PRODUCTS



DESERT GORE-TEX® EXTENDED COMFORT BOOTS For desert operations and other warm climate scenarios

What environmental challenges are likely to be encountered in desert operations? Needless to say, heat, sand and dust. However, if that were all, boots without a functional membrane would be perfectly adequate. Combat boots with ventilation holes and mesh textile panels in the upper are primarily designed for maximum breathability. However, they allow sand to get inside the boot where it rubs on the wearer's foot, causing injuries such as blisters and other skin damage. This can also impair the soldier's ability to focus and concentrate. And what happens when soldiers are exposed to waste, sewage, undesirable liquids, or mud while on patrol in urban terrain? The rationale behind compromising on foot protection is hard to

understand! Hot and dry climate conditions are just some of the challenges faced by soldiers operating in desert regions. These environments call for combat boots that incorporate extreme breathability, outstanding heat loss properties and durable protection. All GORE-TEX® Desert Boots have been specifically designed to meet these challenges. And they all successfully fulfil the performance requirements of GORE-TEX® Extended Comfort Footwear.

A NEW CLASS OF CLIMATE COMFORT

At the core of this new line of desert boots are a number of different GORE-TEX® Extended Comfort laminates: thin 3-layer

laminates that perform without extra insulation. The laminate construction consists of a highly abrasion resistant, quick-drying textile lining material, the microporous GORE-TEX® membrane made of expanded polytetrafluoroethylene (ePTFE) and a protective knit. GORE-TEX® Extended Comfort laminates are highly breathable and notable for their outstanding heat loss properties. This means that the wearer's feet are durably protected from water, problematic liquids and sand, while sweat occurring inside the boot can escape even faster.

DURABLY WATERPROOF, HIGHLY BREATHABLE AND EXCEPTIONALLY DURABLE

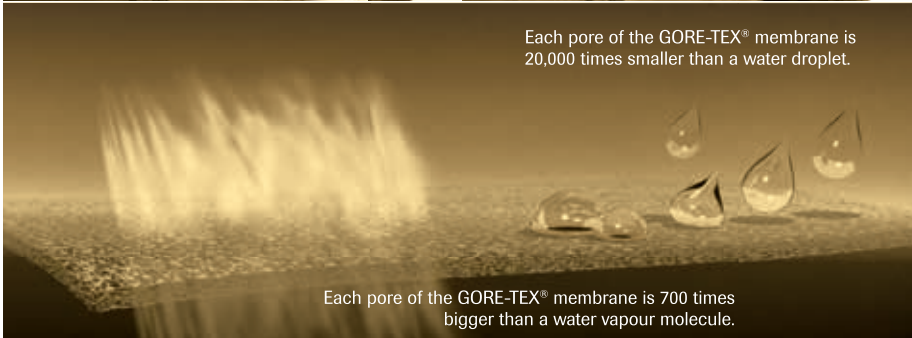
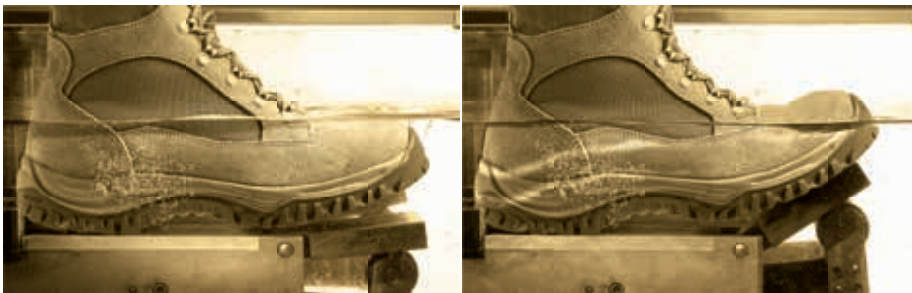
DURABLY WATERPROOF AND HIGHLY BREATHABLE

In all scenarios GORE-TEX® Extended Comfort Footwear stands for proven protection and outstanding climate comfort

Durably waterproof

Wet feet are more susceptible to bacterial infections, bruising, blisters and other injuries. Desert GORE-TEX® Extended Comfort Boots have to withstand up to 300,000 flex movements (= 300 km / 80 h) in ankle-high water – without allowing one single drop of water to penetrate into the

boot. This is up to sixty times higher than EN ISO 20345/347, the standard that sets performance requirements for safety footwear.



Each pore of the GORE-TEX® membrane is 20,000 times smaller than a water droplet.

Each pore of the GORE-TEX® membrane is 700 times bigger than a water vapour molecule.

Highly to extremely breathable

Wet feet are not always the result of water penetrating from the outside. The sweat that our feet produce at elevated temperatures or high levels of activity is also a common cause of wet feet. Desert GORE-TEX® Extended Comfort Boots are designed around thin GORE-TEX® Extended Comfort 3-layer laminates that are highly effective at transporting sweat in the form of water vapour to the outside.

The Hohenstein Comfort Rating System classifies the Extended Comfort GORE-TEX® laminates as “highly and extremely breathable”.

The R_{et} values of the new GORE-TEX® laminates are all under 10 [m² Pa/W] as specified in ISO 11092.

Desert GORE-TEX® Extended Comfort Boots eliminate unnecessary foam layers which hinder heat loss. Soldiers’ feet are protected against water penetration and feel comfortable in the kind of climates encountered in desert regions. Soldiers whose feet are protected and comfortable can focus on their mission rather than their feet.

Rating	R_{et} [m ² Pa/W]
Extremely Breathable	< 6
Highly Breathable	6 to 13
Satisfactory	13 to 20
Unsatisfactory	> 20



BOOTS FOR DESERT MISSIONS AND WARM CLIMATE SCENARIOS

Many of the climates encountered in desert regions are unique to this environment. However, due to the variety of activities and missions undertaken in these climate conditions, soldiers find themselves confronted with very different challenges. Desert GORE-TEX® Boots have been designed for three distinct scenarios:

Scenario Patrol

Need: combining protection with extreme breathability and highest heat loss properties.

- combat in urban environments
- low to medium liability combat operations
- shorter missions with a light load
- highest sand and dust protection
- protection in standing water and against other liquids



PATROL GORE-TEX® EXTENDED COMFORT FOOTWEAR

Patrol GORE-TEX® Extended Comfort Footwear has been specifically engineered for use in hot-dry and hot-humid climates. Notable for their exceptional breathability, the products in this line are at the top end of the breathability scale. The R_{et} value of the laminate is $< 6 [m^2 Pa/W]$ as specified in ISO 11092.

Thin materials and limiting the use of foam to specific areas (e.g the heels) minimize heat build-up - even during physically strenuous activities.

Over and above exceptional breathability, the unlined boot construction has been engineered to allow for a low water pick-up of the outer material and quick re-dry.

The boots feature a new, single-layer upper construction and a compact, torsion-resistant sole.

- durably waterproof
- extremely breathable
- non-insulated for highest heat loss properties
- quick re-dry
- low water pick-up
- protection against exposure to sewage and commonly occurring chemicals



Scenario High Liability

Need: Mastering the extremes combined with highest breathability.

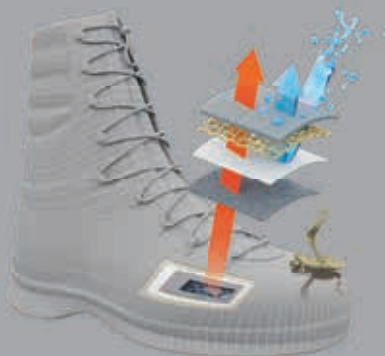
- high intensity combat operations
- heavy load
- multi-day missions and expeditions
- rugged, mostly rocky terrain



HIGH LIABILITY GORE-TEX® EXTENDED COMFORT FOOTWEAR

When the terrain gets rugged and soldiers are carrying their full combat load, they will need foot stability and ankle support. High Liability GORE-TEX® Extended Comfort Footwear provides the solution. The GORE-TEX® inner lining is combined with a more stable textile/leather upper and other construction enhancements.

- durably waterproof
- highly breathable
- non-insulated for high heat loss properties
- supportive and stabilizing
- protection against exposure to sewage and commonly occurring chemicals



Scenario Tactical

Need: combining light weight and flexibility with high breathability.

- search and rescue operations
- special forces assault
- house-to-house combat
- field camp duty
- barracks duty



TACTICAL GORE-TEX® EXTENDED COMFORT FOOTWEAR

Many day-to-day military activities call for flexible and athletic footwear, i.e. during search and rescue operations. Tactical GORE-TEX® Extended Comfort Footwear is based on the established construction that features a GORE-TEX® inner lining combined with a lightweight textile upper. This allows for a functional, athletic design.

- durably waterproof
- highly breathable
- non-insulated for high heat loss properties
- lightweight and flexible
- protection against exposure to sewage and commonly occurring chemicals



Why change?

In desert and urban environments combat boots without a membrane often cannot provide adequate protection. Alongside challenging environmental conditions involving heat, humidity and water exposure, they also have to cope with the risks associated with sand, dust, sewage and commonly occurring chemicals.

Desert GORE-TEX® Extended Comfort Boots now set new standards:

- durably waterproof
- highly to extremely breathable
- protection against exposure to sewage and commonly occurring chemicals



	Waterproofness	Breathability	Heat loss	Insulation	Quick re-dry	Stability / padding
Patrol	•••	•••	•••	○	•••	•
Tactical	•••	••	••	○	••	••
High Liability	•••	•	•	○	•	•••

