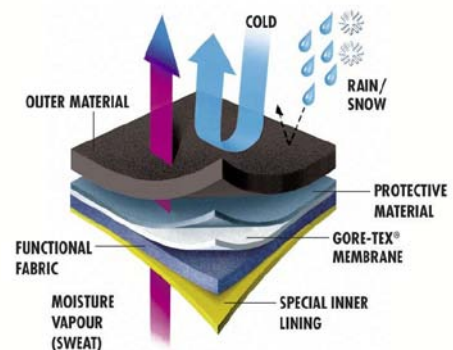


GORETEX COLD WEATHER BOOT (REF. ML215 GTX DDR)

TECHNICAL SPECIFICATION

ENISO 20347:2004 O2



GORETEX WATERPROOF AND BREATHABLE LINING

NO WATER PENETRATION AT 500.000 STEPS IN WATER

1-SUBJECT

This specification covers the technical specifications, control and test methods of Goretex Cold Weather Boot – style ref.ML215 GTX DDR

All tests are made in accordance with the European Norm ENISO 20344:2004 and the product is complying with the European Norm ENISO 20347:2004

Nato Stock Number :8430270089890

The footwear shall be completely impermeable to liquids and entirely (100%) permeable to water vapour in order to ensure the necessary comfort while in use even in extreme conditions.

The Requirement

- **Comfort:** The most important requirement in any is for it to be comfortable. However, comfort is dependent on a number of things
- **Fit:** The boot must fit properly so that it grips the heel but allows freedom for the toes to move
- **Shock Absorbency:** The boot sole must be effective in absorbing shocks to minimise damage to the ankle and lower legs.
- **Spring:** The design of the boot should help to return energy to the foot to aid walking and running
- **Security:** It must lace effectively to hold the foot in place. If the foot slips inside the boot, it will cause blistering
- **Breathability:** The boot must allow the foot to breathe and for the sweat to escape. The foot can produce litres of sweat and if it is trapped, it will make the foot wet, causing blistering because the skin becomes soft and fungal infections. Therefore the quality of the materials used is most important as good materials give good breathability
- **Waterproofness:** The boot must keep the foot dry. Cold wet feet will make you feel uncomfortable and will lower your morale
- **Grip:** The boot must provide grip to stop you slipping in muddy ground to stop the foot slipping
- **Support:** The boot must be flexible to allow good movement but also must give good ankle support for when you are carrying heavy loads Protection. The boot should protect the foot from sharp objects, acids and oils

- **Durability:** Boots must be durable. Once the boots have worn in and are comfortable
- **Effectiveness:** The boots should remain effective over a range of temperatures, climate and ground conditions

2- SPECIFICATIONS

A. GENERAL

All materials provide comfort and flexibility.

Padded collar and tongue for comfort.

Light weight

Sole : “Direct injection and moulded”, “Double Density Rubber” sole durable against hot and/or cold environments.

Upper : Water resistant leather and 100% waterproof and breathable, climate control GORETEX lining (made in Germany)

Size range is between 36 – 48 French Sizing / 3 – 13 British Sizing

Sole design : Chevron

Standards : EN ISO 20347:2004 – O2 and NATO Specs

Water resistance of the footwear	according to standard	EN ISO 20345-6.2.5
Ergonomics	according to standard	EN ISO 20345-5.1

B. TECHNICAL SPECIFICATION

UPPER LEATHER :

Upper Material : Full grain genuine Cow leather

Colour : Black

Thickness : 2,0 mm (minimum)

Tear strength of the material of the upper	≥ 120 N	EN ISO 20345-5.4.3
Tensile strength of the material of the upper	≥ 15 N/mm ²	EN ISO 20345-5.4.4
Dynamic water resistance: Absorption of water after 60':	time for penetration of water ≥ 60 min. $\geq 30\%$; penetration of water between 60' and 90' no greater than 0.2 gr.	EN ISO 20345-6.3.1
Permeability of the upper to water vapour	≥ 4.0 mg/cm ² h	EN ISO 20345-5.4.6
Water vapour coefficient of the upper	≥ 15 mg/cm ²	EN ISO 20345-5.4.6

pH (only for leather upper)	> 3.2	EN ISO 20345-5.4.7
-----------------------------	-------	--------------------

TONGUE LEATHER :

Upper Material : Full grain Calf leather
 Colour : Black
 Thickness : 1.0 mm (minimum)

Tear strength of the Tongue material	≥ 30 N	EN ISO 20345-5.5.1
pH (only for leather upper)	> 3.2	EN ISO 20345-5.4.7

LINING :

Property : Boot upper will be lined completely with Climate Control GORETEX (made in Germany), 100% waterproof and breathable
 Material : External side which is touching foot, 100% non woven polyamide, featuring high abrasion resistance
 Internal side which is touching leather, Waterproof membrane in expanded polytetrafluoroethylene (PTFE)

Tear strength of the lining	≥ 15 N	EN ISO 20345-5.5.1
Abrasion resistance	> 25,600 dry cycles > 12,800 wet cycles	EN ISO 20345-5.5.2
Water vapour permeability of the lining	≥ 2.0 mg/cm ² h	EN ISO 20345-5.5.3
Water vapour coefficient of the lining in 8h	≥ 20 mg/cm ²	EN ISO 20345-5.5.3

LASTING INSOLE BOARD :

Property : Anti-static, anti-bacterial, sweat absorber
 Material : Non-woven bonded fibre board

Thickness of the insole	≥ 2.0 mm	EN ISO 20345-5.7.1
Water absorption of the insole desorption	≥ 70 mg/cm ² > 80%	EN ISO 20345-5.7.3
Abrasion resistance of the insole after 400 cycles	No tearing visible	UNI EN ISO 20345-5.7.4.1

ACCESSORIES AND OTHERS :

Sewing thread: The yarns shall be in polyester or polyamide (non-wicking)

Inlay Sole : Anti-static, sweat absorber, anti-bacterial, removable , washable
(Sock insert) Micro fiber coated opencell PU

Lace : Polyester or polyamide (non-wicking)
Length and colour is according to the boot

Hooks : Rust proof, easy roller, easy lock and easy fastener

SOLE :

Property :

- Direct Injection and Moulded : It provides durability and resistance against sole-upper separation and abrasion
- Double density rubber (DDR) : Midlayer provides cushioning and comfort as well as flexibility, light weight, insulation against cold and hot and shock absorbance.
- High performance
- Heat Insulation (HI) and Cold Insulation (CI): It minimizes the effects of hot and cold surfaces to the feet hence keeping it warm during winter and cool during summer
- Anti-staticness (A) : It provides to minimize electrostatic build up to avoid the risk of spark ignition.
- Energy Absorbing Heel (E) : It provides comfort when jumping walking, running , etc. by absorbing downward force in excess of a body weight. It is to absorb a minimum energy level 20 joules to take the shock our of the heel area
- Hydrolysis resistance: It provides durability on sole against very humidity, hot and cold weather conditions and longer self life for products at international storage terms
- Oil resistant outsole (FO): The sole will not swell or become brittle and crack when worn in harsh industrial environments
- Slip resistant outsole in accordance with the standard EN 13287
- Heat resistant up to 300 °C degree (HRO)

Material : Rubber in double layer (DDR)
midsole layer (expanded) and outsole layer (compact)

Hardness : Outsole layer: 65 ± 7 Shore A

Density : Outsole 1.15 (-\+) 0.1
midsole 0.80 max

Tear strength of the outsole material	≥ 8k N/m	EN ISO 20345-5.8.2
Abrasion resistance of the sole material	≥ 150 /mm ³	EN ISO 20345-5.8.3
Flexing resistance of the outsole	increase in the size after 30,000 cycles ≤ 4 mm	EN ISO 20345-5.8.4
Resistance of the outsole to hydrocarbons (fuel oil)	volume increase ≤ 12%	EN ISO 20345-5.8.7

Energy absorption of the seat region	Not less than 20J	EN ISO 20345-6.2.4
Antistatic properties: electrical resistance of the bottom of the footwear	Between 100 KΩ and 1,000 MΩ after:	EN ISO 20345-6.2.2.2
Resistance of the sole to hot contact	No melting or rupture	EN ISO 20345-6.4.4
Heat insulation of the sole complex	Temperature increase on the upper surface of the sole no greater than 22°C	EN ISO 20345-6.2.3.1
Cold insulation of the sole complex	Temperature drop on the upper surface of the sole no greater than 10°C	EN ISO 20345-6.2.3.2

3 – QUALITY ASSURANCE

All raw materials before production and all finished products after production are being tested in our laboratory which has been accredited by SATRA International Notified Body in UK and by Turkish Standard Institute (TSE) .

It is supported by the implementation of ISO 9001:2000 Quality System Certificate and membership of SATRA (international laboratory in U.K.) to audit and test the product.

Each pair of boot has a customer information leaflet which is put in inner boxes. This leaflet includes information about product, standard and product care.

4 - LABELLING AND PACKAGING

The single boot in each box separated by tissue paper or polypropylene paper to prevent them from coming into contact.

Each pair of footwear is packed in a box with handle in corrugated cardboard inner boxes. The inner boxes shall be placed in outer boxes made of double wall cardboard having, with 10 pairs in each outer box.

On one side of the inner box the indications below is printed on a sticker with clearly visible characters.

- exact name, reference and/or article of the product contained;
- size details of the product contained;

The outer boxes shall be closed and sealed with adhesive tape on all the flaps.

On one side of the outer boxes the indications below is printed on a sticker with clearly visible characters.

- name of the supplier company (if required);
- exact name, reference and/or article of the product contained;

- quantity of the product contained;
- size details of the product contained;

Final packaging shall maintain enough protection to prevent any damage of goods under normal shipment and handling conditions.