

Tri-Zone® Boots – Tested to the Limits

Equilibrium Products view horse boots are safety equipment.

Riders protect our most vulnerable areas with riding hats and body protectors which are all subjected to extensive testing to meet set standards. As a piece of equipment that protects a vital part of your horse, Equilibrium Products believe protective boots for your horse's legs should be tested too!

Tri-Zone® boots from Equilibrium Products go through a unique 3-phase testing process so you can be confident that you are choosing the best leg protection for your horse.

What is the Boot Testing Process?

Testing Phase 1 – Independent Laboratory

In the same laboratory that test standards of riding hats and body protectors, Tri-Zone® boots are tested for their ability to protect against concussion and penetration whilst remaining lightweight, breathable, and flexible. Each individual layer in the Tri-Zone® boot is researched and sourced for their advanced technical properties and tested in an independent laboratory before it goes anywhere near a horse's leg.

How are the boots tested and what for?

Protection

Using a custom made rig, a blunt hammer or a cutting blade is dropped onto the boots in a controlled manner. The boots are hit with forces ranging from 1.25 to 20 Joules, chosen as being those likely to occur in the horse during exercise, for example when hitting obstacles or over-reaching.

Heat & Breathability

Research shows that when tendon cells are heated to 48°C for 10 minutes, approx, 80% of them die. The heat release from the boots is estimated by fitting them to a metal flask containing water at 45°C in a room at 20°C with no significant radiation. The surface temperature of the boots is measured using a thermal camera, and from this it was quite clear to see certain boots are effective insulators and kept the heat in, and others allowed heat to escape, showing a hotter boot on the surface.

Heat release was also measured by looking at the rate at which the temperature of the water in the flask dropped. 20°C air was being blown over the boot (via a fan) to simulate the air movement over the boot and leg as would occur during exercise.

Flexibility

Inflexible boots, or those which are applied too tightly, can restrict joint movement, alter stride characteristics and cause further problems, such as tendonitis. An 8cm x 1m steel pipe is set up secured to a workbench and the boots are fixed to this pipe. A 10kg weight is attached with a clip on the boot and the downward direction measured to see how much the boot bends, which allows the degree of flexibility to be measured.

Weight

Adding weight to the leg significantly increases the effort the horse needs to move and can also alter their stride characteristics. Some boots can also double in weight when wet. Tri-Zone® boots are designed and tested to minimise water absorption, excess weight but without compromising on protection.

Testing Phase 2 – Tester Panel

An extensive tester panel of horse owners and riders then test the boots to ensure correct fit, maximum comfort, ease of use and washing.

Testing Phase 3 – Rider Tests

In the final phase, the boots go through the difficult test of being used all day, every day on multiple competition horses with teams of professional riders. Including Olympic riders, world champions and top producers.

<https://www.equilibriumproducts.com/product/tri-zone-impact-sports-boots/>