



CORRECT HOOF ANGLES

Basic Shape of the Physiologically Correct Hoof

Hoof Angles

Generally, the front hooves have an angle of about 45 degrees while the hind hooves are somewhat steeper, around 55 degrees. The hoof wall is a cast of the coffin bone as it is



formed by the corium that covers the coffin bone, hence the angles of the hoof replicate the angles of the ground parallel coffin bone. The front feet are round in the toe area and are able to carry the main part of the horse's weight also functioning as excellent shock absorbers. The hind feet are more pointed in the toe that provides the spring and elasticity for propulsion.

The Frog

A large part of the frog has ground contact, to allow the horse to feel the ground, carry weight, and function as a shock absorber. It is widest in the area of the heels. If you drew a line along the edge of the frog from tip to heel, the extension of this line should pass on the outside of the bulb of the heel. If it intersects with the bulb of the heel, the hoof is contracted (usually as a result of shoeing and/or improper trimming).



The Hoof Wall

The overall shape of the hoof is that of a slanted cone. The hoof wall and especially the heels are barely above the level of the sole, and the heels not above the level of the frog. If the heels height exceed the level of the frog, then the lever forces created can damage the hoof.

The Sole

The sole is smooth and slightly concave; only in an area of the front of the toe does the sole help carry weight (about 1 cm or 1/2 inch is on the same level as the hoof wall).

The Bars

The bars protrude no more than 1-2 mm (less than 1/10th of an inch) above the sole, becoming level with the sole around the middle of the frog. They function as skid brakes, and should under no circumstances bear weight (ie. grow to the level of the hoof wall).

Only if these physiological conditions are met can the hoof function in its biologically intended capacity as shock absorber and pump (it is part of the circulatory system, returning blood from the hooves to the body).

Hoof Mechanism

The coffin bone is suspended inside the hoof capsule by the lamellae and surrounded by the blood filled corium. When the hoof is picked up off the ground, the hoof capsule is smallest and exerts pressure on the corium, thus emptying it of blood (ie. pumping blood upwards, supporting the heart). On bearing weight, the hoof capsule expands, the coffin bone descends and the sole spreads outward/downward. As a result of this, the corium has more room (compare 5 mm to 2-3 mm when not bearing weight) and can, like a sponge, fill with blood once again. When the foot is picked up, the whole cycle repeats. Thus, with every step, each hoof pumps blood back toward the heart. This pumping action is vital for optimal waste/nutrient exchange within the tissues of the hoof, and supports the entire circulatory system.

Further Information:

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