

HOOF TRIMMING

How rubber mats prevent  
hoof diseases



**Why is hoof trimming so important for cows? Quite simple really: A healthy farm needs healthy legs to stand on – in the truest sense of the words!**

Hooves have a special significance in this regard: Not only do they bear the whole weight of the cow, they also come into direct contact with various types of soil, from soft pasture soil to hard barn flooring. The hooves quickly show how appropriate the ground is for the animals in question.

**The following usually applies: A soft floor contributes significantly to a healthy hoof and thus decisively to both the well-being and the productivity of a cow. Let us now take a closer look at these relationships and answer the question of how rubber mats in barns can prevent hoof diseases.**

## Structure of the cattle hoof

To help us better understand the relationship between soil hardness and hoof health, let us first take a look at the anatomical structure of a cattle hoof. When looking at the foot from the front, you immediately notice that the shape of the hoof is asymmetrical. The outer toe is about 2 to 3 millimeters longer than the inner toe.

**This means:** As a cow steps forward, it always places its outer claw down first. Depending on the hardness of the soil, the load is further distributed to the inner claw. In the case of hard ground, as commonly found in conventional barn flooring, correct load distribution is prevented as the outer claw is unable to sink into the ground. The effects of imbalanced and incorrect load can be detrimental.



Source: Schmid et al., 2008; Muggli, 2011

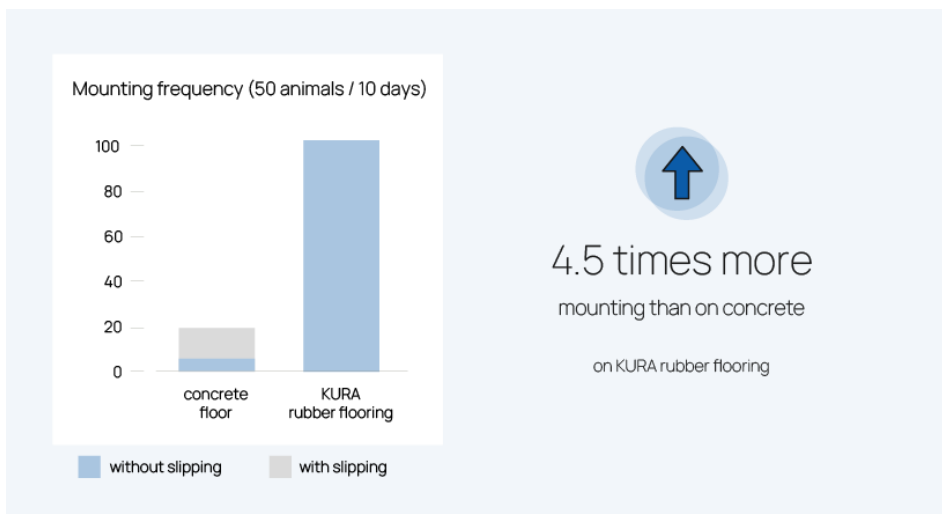
## Influence of the floor on hoof health

Cows can be on their feet for up to twelve hours a day. As such, the flooring has a decisive impact on hoof health – and thus also on the overall well being of the animal. The key factors for assessing a floor are its hardness and slip resistance. As described above, the hooves of a cow are asymmetrical and, therefore, perfectly adapted to natural, soft soils, such as those found in a pasture or meadow. For instance, the slightly longer outer claw can sink into the ground and ensure the cow is standing and walking correctly. At the same time, the load is also distributed to the shorter inner claw.

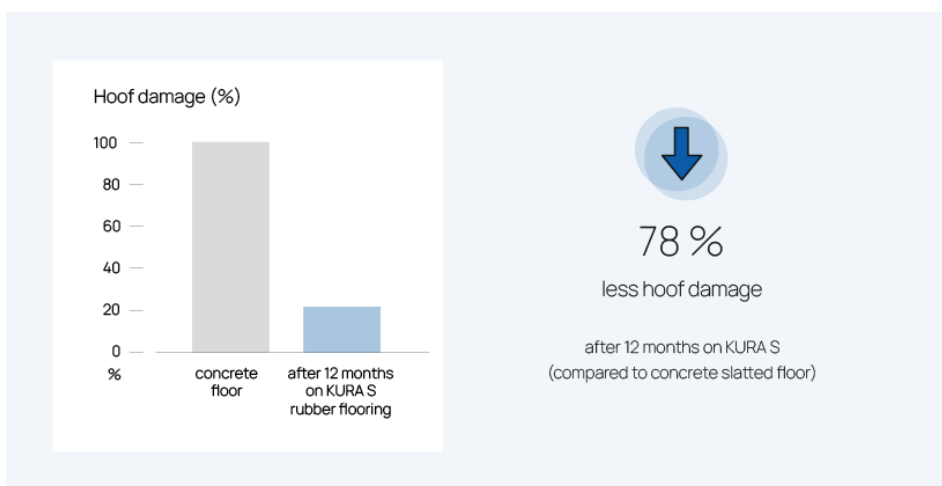
Hard ground surfaces such as natural stone or concrete, as commonly found in barns or on outdoor walking areas, prevent the outer claw from sinking in – thereby compromising the animal's stability and ability to distribute load effectively. Needless to say, cows that slip or are in pain while walking tend to move less and more slowly. They avoid unnecessary walking and take only very short, careful steps.

Restricted movement becomes evident through discernible changes in feed intake, lying times or the number of times a cow stands to be mounted during estrus.

**The result: Reduced milk yield** caused by a slower metabolism.



Source: Platz et al., 2007



Source: Benz, 2002

Beyond these indicators of a cow's well-being, excessively hard ground continues to have detrimental effects on the health of dairy cattle. The absence of load distribution places the entire weight of the cow on the outer claw, which is often unable to bear this immense load. This frequently leads to highly dangerous pressure-related hoof diseases (such as sole ulcer, double sole or white line disease).

Additional accompanying incorrect hoof abrasion, as occurs on hard ground, allows the hoof to tip backward. This results in an excessive load being placed on the longer bone of the outer claw and an increased risk of serious hoof disease.

**Without complex and careful hoof trimming, this can, in the worst instances, result in lameness of the cow. A problem that can be avoided with appropriate barn flooring.**

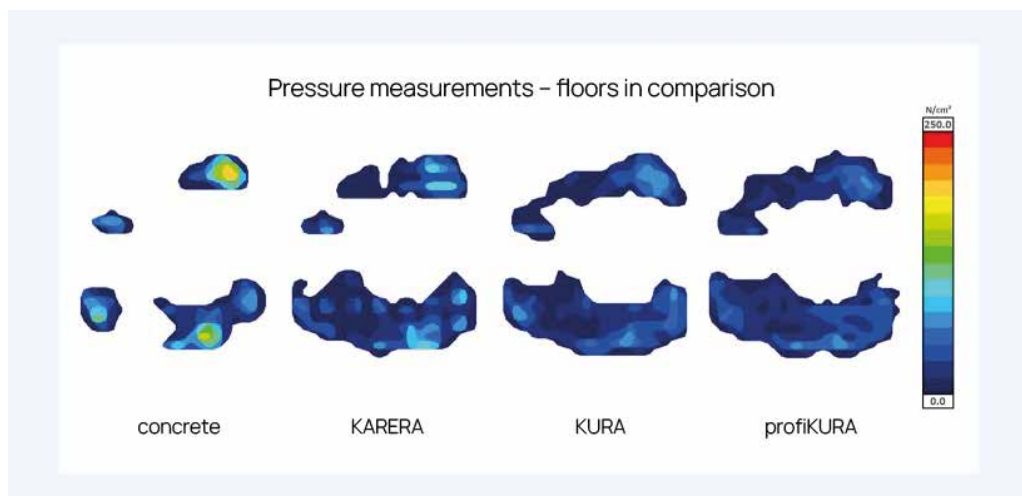
## As it helps to alleviate the strain on the outer claw

Most hoof diseases among dairy cattle are a direct result of the barn flooring being too hard and slippery. The remedy is a soft rubber floor that provides the closest comfort to the natural ground of a pasture.

**Rubber barn flooring presents several key advantages that boost the health of your cattle:**

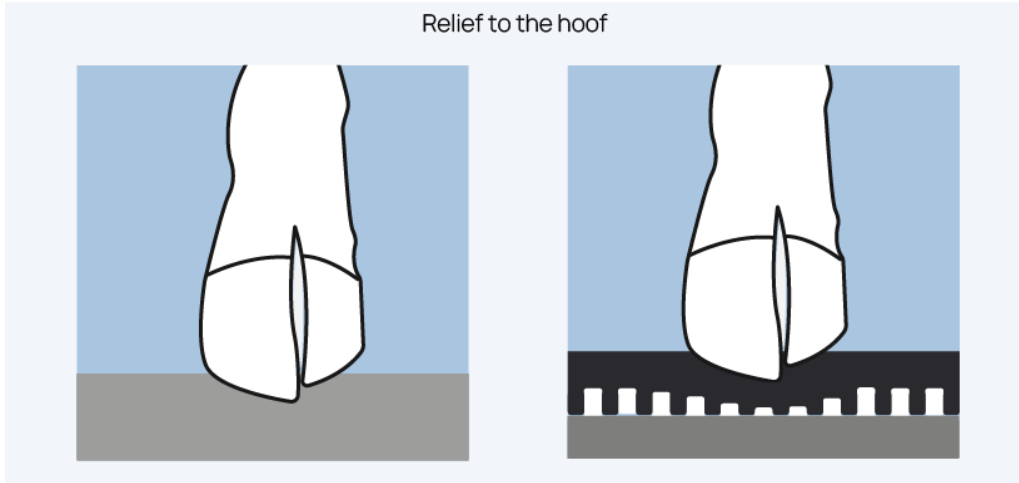
### 1. Soft floor for natural load distribution

Soft conditions underfoot can effectively relieve the outer claw. The claw sinks in just like on a natural ground until the weight of the cow is distributed evenly between the inner and outer claws. This helps to prevent pressure-related injuries and diseases.



Pressure measurements carried out by the University of Leipzig on cattle hooves: Rubber flooring effectively diffuses pressure peaks in contrast to concrete, providing a pressure distribution akin to that experienced on a natural pasture.

Source: Oehme et al., 2018

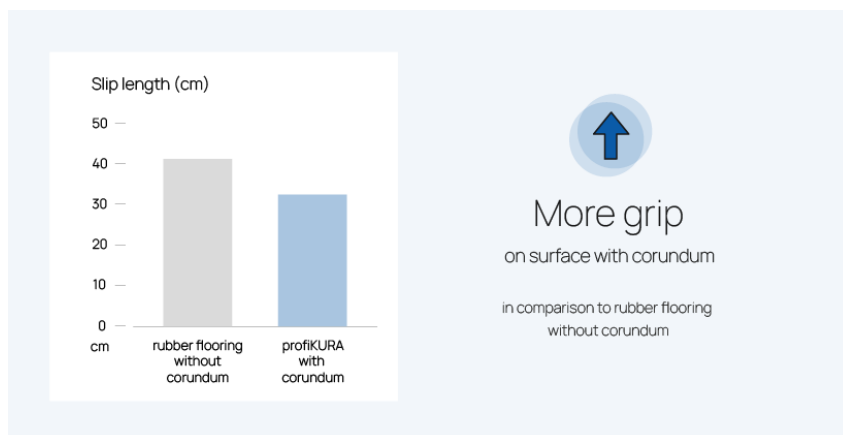


Incorrect loads on hard ground inevitably lead to pressure peaks, especially on the outer claw.

A natural sinking depth of approximately 3 mm, coupled with even pressure distribution, is achieved on soft rubber flooring.

## 2. Slip resistant ground for greater safety

Sinking of the hoof into soft ground also increases the sure-footedness of cows. The soft and slip-resistant rubber barn flooring increases a cow's desire to move, thereby stimulating its metabolism and feed intake. At the same time, movement increases blood circulation and thus also the quality of the growing hoof horn.



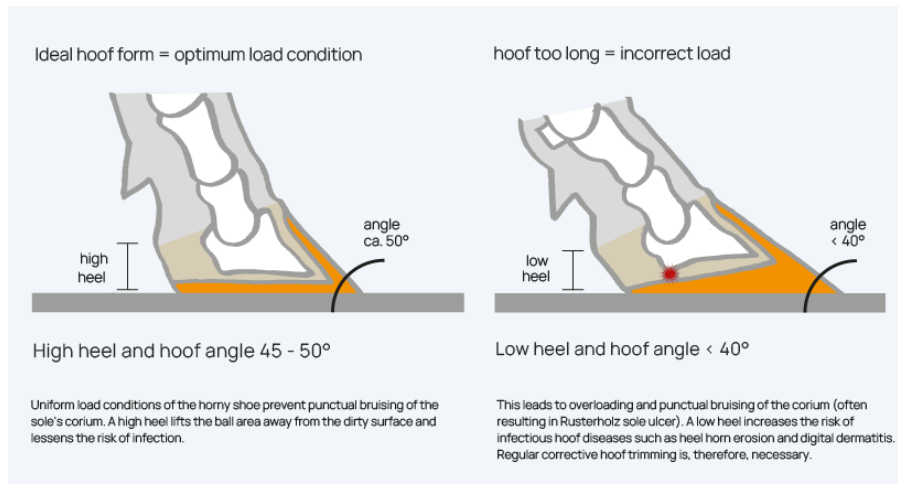
Source: Pöllinger and Zentner, 2016



DGL testing of walking area flooring, Source: Reubold, 2004

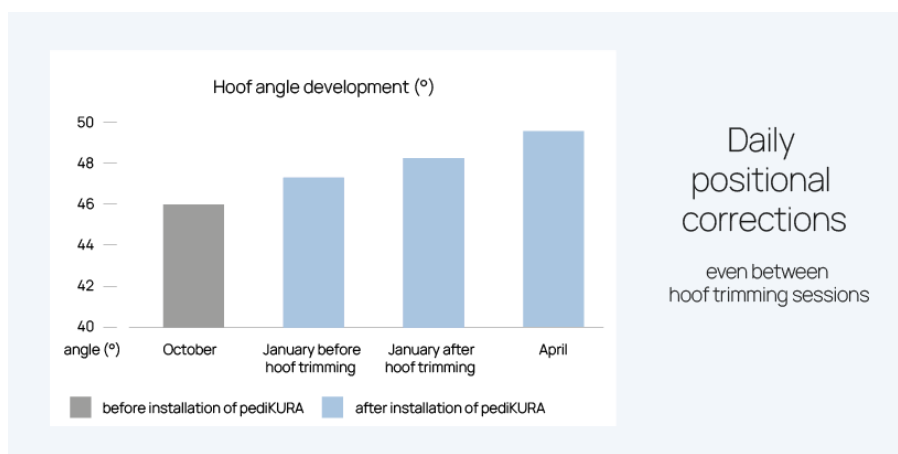
## 3. Abrasive rubber flooring for uniform hoof abrasion

Kraiburg rubber flooring also offers decisive advantages in terms of „hoof abrasion“: The abrasive corundum ensures near-natural hoof abrasion and, together with the soft walking areas, helps maintain a healthy hoof angle and wall edge. The outer claw is spared excessive strain thanks to the softness of the flooring, resulting in less pressure ulcers. Maintaining a correct hoof angle with a high heel lifts the bulb away from dirty surfaces. This lessens the risk of infectious hoof disease.



High-performance, intensively fed dairy cows experience stronger horn growth. Too much abrasion on the heel will cause the claw to „tip backward“ and the hoof angle to be flatter. Hard abrasive floors also grind the hoof flat, resulting in the loss of the wall edge and thus the natural slope of the sole.

Source: Kümper, 2003



Source: Benz, 2009

#### 4. Low-maintenance rubber mats create a slope in the walking alley

In addition to the many benefits for the health and well-being of cows, rubber barn flooring also offers some very practical advantages. Rubber mats are very low maintenance and allow a slight slope in the floor due to the high level of slip resistance. The perfect prerequisite for a urine-collecting gutter or drainage in the barn flooring.



Summary: Cows would always choose rubber – as would economically successful dairy farms

***A quick look at the anatomy of a hoof makes it quite apparent:*** Conventional concrete barn flooring is not a suitable ground for cows. Our rubber mats offer an effective and efficient solution to safeguard and improve the long-term health and well-being of your animals. This, of course, also has a decisive impact on the economic efficiency of your farm:

*The healthier and more active your cows are, the greater their milk yield, the more natural their behavior during estrus and the lower the expenses for medical care and hoof trimming. Further, an investment in rubber barn flooring is also well worth your while from an economic point of view.*

***And we all know: Happy cows are ultimately priceless!***