

Short introduction to a flexible floor for dairy cows

February 2008

Background:

In many countries dairy cows are concentrated in larger and larger herds, where they are typical of spending most of their time in the cow house, which typically has a concrete based floor.

This is hard for the cloves and clove diseases (lameness) is typically a major problem in the herds.

For environmental reasons, agriculture including animal production has been forced to reduce the release of gasses, as ammonia to the air.

Concept:

In this connection Perstrup Beton Industri, who is the Danish arm of Abetong, has been involved in the development of a so called scraper floor, which allows the urine to drain off and where the faeces can be removed by scraper. This system for some years have been used in Holland and other countries as well as in Denmark. The system has demonstrated the reduced ammonia emission.

Research results however have demonstrated that this concrete floor gives the same problems with cloves damage as other concrete floors.

To solve this problem a new system was developed by Perstrup Beton Industri in cooperation with the National Agricultural Research Science, the Danish Agricultural Extension Service, the

company ErgoFloor and Agri Contact as coordinator.

In this system rubber elements have been embedded in the concrete elements of the scraper floor as indicated in fig. 1, where (1) is concrete, (2) is rubber and (3) is the drainage canals for urine.

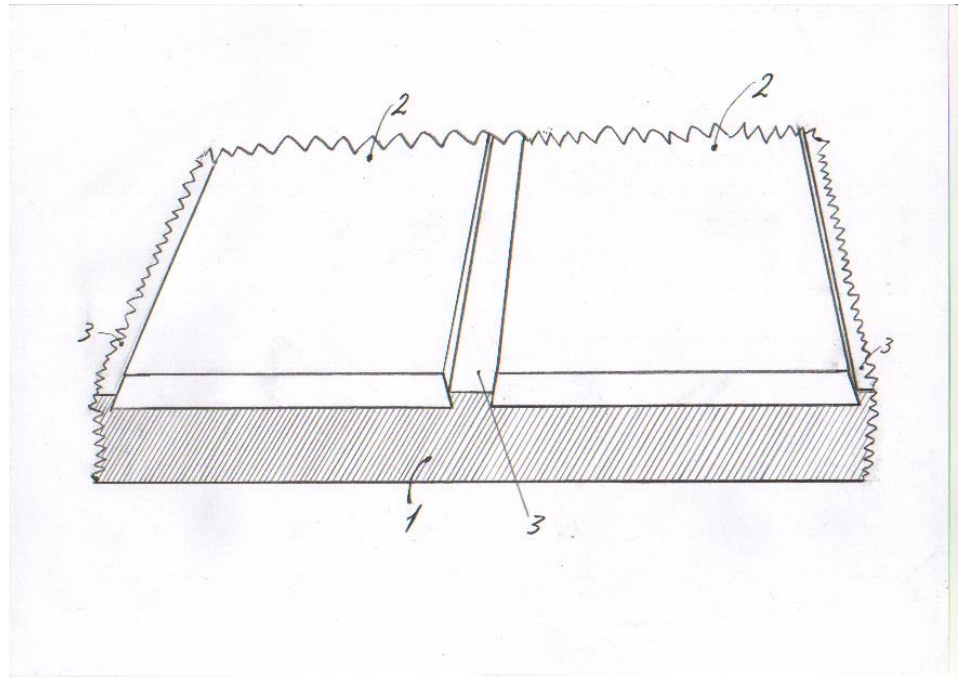


Fig. 1

Tests:

During the development the embedded rubber elements have been tested for stability by Department of Mechanisation, Labour, Buildings, Animal Welfare and Environmental Protection Agricultural Research Centre Ghent, Belgium using a test unit as shown in fig. 2.

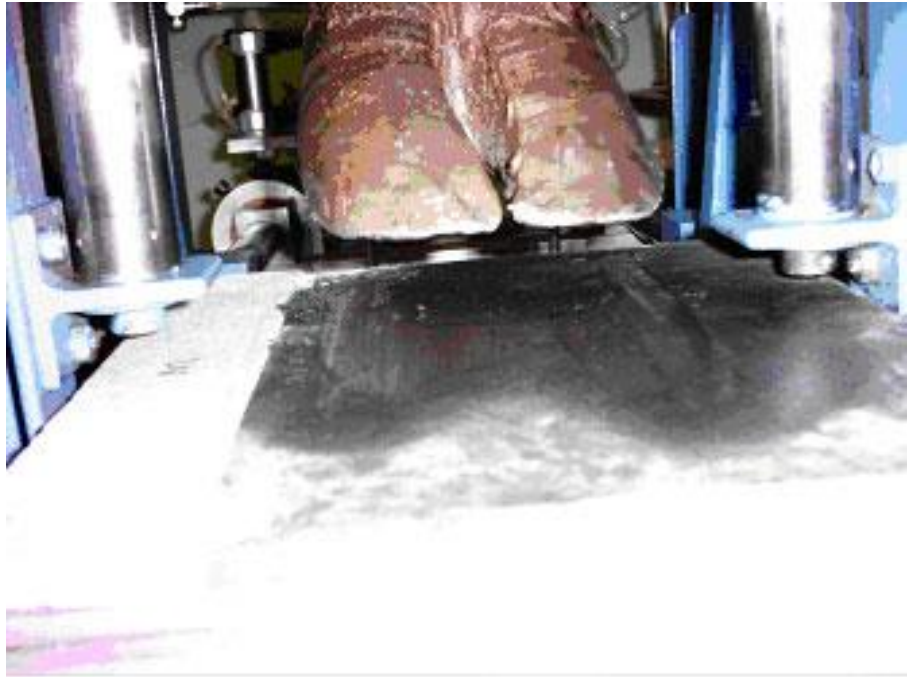


Fig.2

As it can be seen from fig. 3, the test element is still in good shape after 25.000 impacts.



Fig.3

The anti-skid / slip resistance" (walking comfort for cows) was tested by the Danish National Agricultural Research Science using video observations of cows walking on the floor. It was concluded, that the walking comforts is a good as when the cows are walking on new asphalt floor.

Elements installed in cow house:

Fig. 4 shows one of the first cow barns with rubber based scraper floor installed:



Fig. 4

Commercial status February 2008:

About 10 cow houses have been installed with the flexible floor during 2007 with positive feed back from the farmers and the construction was presented by Perstrup Beton Industri as a key product at the national agricultural exhibition Agromek January 2008