

DLG Test Report 6439

New Farms s.r.l.

Blister Sandbedmat

Acid resistance, Joint evaluation



**NEW FARMS
BLISTER SANDBEDMAT**

- ✓ Joint Evaluation
- ✓ Acid Resistance

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Overview

A quality mark “DLG-APPROVED for single value-determining criteria” is awarded to agricultural products which successfully passed a smaller-scope DLG usability test according to independent and recognized evaluation criteria. The test intends to highlight special innovations and key criteria of the test item. The test can focus on criteria from the DLG testing framework for full tests or on other individual features or qualitative criteria. The minimum requirements, the test conditions and procedures as well as the evaluation guidelines of the test results are determined in consultation with a DLG expert group. They comply with the generally recognized technology rules as well as with scientific and agricultural knowledge and requirements. The successful test concludes with the publishing of a test report and the awarding of a quality mark which is valid for five years following the award date.



The DLG Approved Test “Acid resistance, Joint evaluation” includes measurements in the lab of the DLG Test Center and examinations in practice. The acid resistance was measured and joint evaluation was carried out. The test was based on the DLG Testing Framework for elastic stable flooring, as of April 2010.

Other criteria were not investigated.

Assessment – Brief Summary

The Blister sandbedmat tested here, a system for building a resting area in cubicles in cubicle houses, was tested as a system with a rubbermat filled with sand and organic litter with regard to durability and comfort properties. The the acid resistance was measured and joint evaluation was carried out.

The joint evaluation was clearly better than the standard.

Table 1:
Overview of results

Test characteristic	Test result	Evaluation
Acid resistance*		
Feed acid mixture	resistant	+
Uric acid	resistant	+
Sulfurous acid	resistant	+
Ammonia solution	resistant	+
Disinfection liquid	resistant	+
Peracetic acid	resistant	+
Joint evaluation**	no alteration 96,4 %	++

* Evaluation range: += resistant; ○ = imited resisitant; – = not resisitant

** Evaluation range: ++ / + / ○ / - / -- (○ = standard)

The Product

Manufacturer and Applicant

New Farms s.r.l., Via Visano Nr. 2, I-25010 Remedello (BS)

Product: Blister sandbedmat

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Description and Technical Data

The Blister sandbedmat tested here, is a system for building a lying area in cubicle barns for cows and cattle.

- Black Rubber sandbedmat with 35 quadratic chambers ca. 20 x 20 cm, which are filled with sand. The surface of the sandbedmat should be interspersed with ca. 5 cm straw litter.
- Dimensions:
length 154 cm, width 114 cm,
high 11 cm
- weight 50 kg each mat
- Shore A: 75
- The sanbedmats are fixed with 13 screws plus disks and dowel on the anchoring supports on the floor.

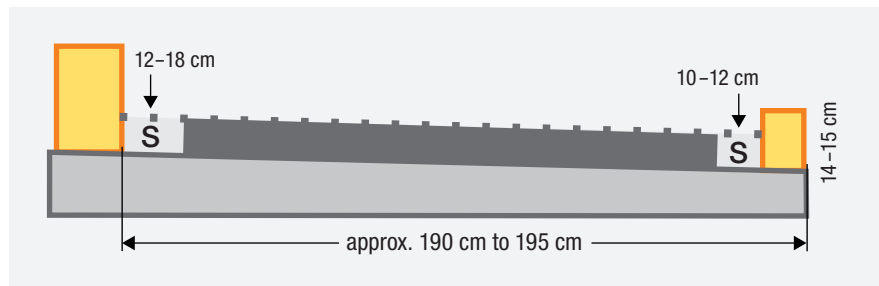


Figure 2:
Drawing of the sandbedmat



Figure 3:
Blister Sandbedmat with sand and straw litter



Figure 4:
Blister Sandbedmat (litter removed to see the mat)

The Method

Acid resistance

A permanent dipping test in accordance to DIN EN ISO 175:2000 (performance of synthetic material against liquid chemicals) was carried out. Test samples (size 30 mm x 30 mm) were completely dipped into different test liquids for 24 hours and 28 days (room temperature 20° Celsius). In the 28 days test the liquids were changed weekly. After the 28 days the samples were washed with distillate water and dried for 24 hours. Before and after the dipping the weight, the dimensions and the shore hardness (shore A) of the test samples were measured.

Additional visual evaluation was done for alterations like colour changing, swelling, destruction or crystallisation. All samples were evaluated in comparison to the standard water.

Joint evaluation

On three farms which had installed only the tested sandbed-mat, cows were examined for externally visible damage in the joint area as of the second third of lactation (joint evaluation).

Evaluation comprised the left and right half of the body and focused on the 10 spots exposed during resting (cf. figure 6). Joint evaluation was always carried out by the same person at the end of the winter feeding period.

The results were classified according to the following scheme (table 2).



Figure 5:
Joint evaluation

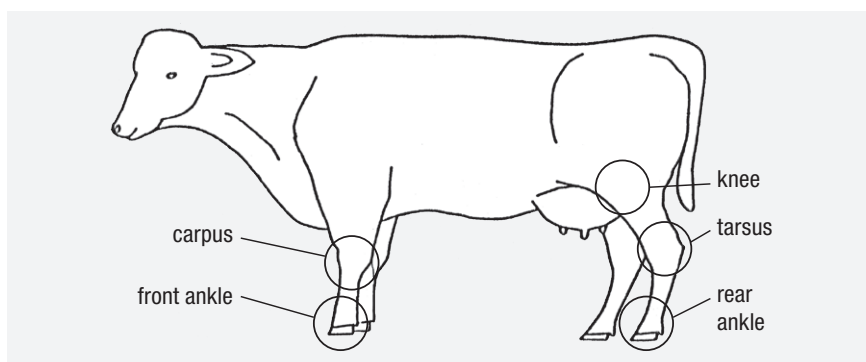


Figure 6:
The areas shown were examined

Table 2:
Classification of the joint evaluation

Result	Classification
without any particular result	no alterations
hairless spots < 2 cm	small alterations
hairless spots > 2 cm	small alterations
skin abrasions < 2 cm	medium alterations
skin abrasions > 2 cm	medium alterations
increased circumference in the bursal area, covered	medium alterations
increased circumference in the bursal area, open	great alterations
joint participation	great alterations

The Test Results in Detail

Acid resistance

The material of the sandbedmat was resistant to the tested media. The sandbedmat mat appears to be suitable for the described purpose as it exhibits material resistance to the tested media.

Joint evaluation

On three farms which had installed only the tested cow mattress, a total of 105 cows were examined for externally visible damage in the joint area as of the second third of lactation (joint evaluation). Evaluation comprised the left and right half of the body and focused on the 10 spots exposed during resting. Joint evaluation was always carried out by the same person. In two farms straw litter was used on the Blister sandbedmat. On one farm pellets made of husk were used as litter.

The percentage of the results found in the 105 animals examined is shown in figure 7. 96.4 % of the spots evaluated did not show any pathological result. Great alterations, like increased circumference in the

bursal area, open joint participation were not found. Small alterations, such as hairless spots were found at 2.6 % of the spots evaluated. At 1.0 % of the spots evaluated medium alterations, such as skin abrasions and increased circumference in the bursal area (covered) at the joints were found. The pathological results determined were mainly found in the tarsal joint. Only in a few cases were pathological results found in the ankles or the carpal joint.

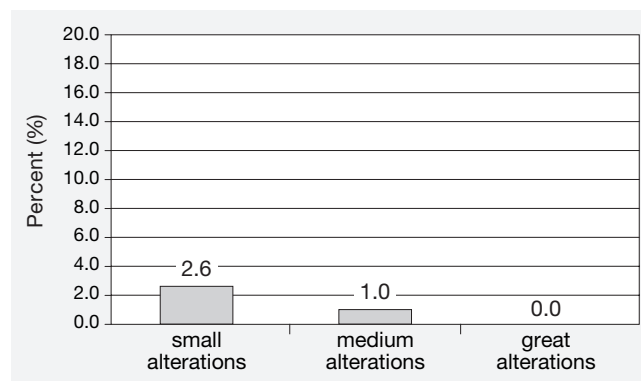


Figure 7:
Percentage of the results found

Table 3:

Test liquids and results – acid resistance

Test liquid	Concentration	Result after 24 hours residence time	Result after 28 days residence time	Evaluation
Feed acid mixture				
	concentrate, pH 2	no changing	no changing	resistant
Excrement acids				
Uric acid	saturated urea solution (0,4 %)	no changing	no changing	resistant
Sulfurous acid	5-6 % SO ₂	no changing	no changing	resistant
Ammonia solution	32 % solution	no changing	no changing	resistant
Disinfection liquid				
Barn Disinfection liquid	2 %-solution of a product with formic acid and glyoxyl acid	no changing	no changing	resistant
Peracetic acid	3000 ppm	no changing	no changing	resistant

Summary

Based on test-stand investigations, the criteria tested in this DLG Approved Test evaluate the comfort and durability properties of the Blister sandbedmat for use in the resting area of high cubicles in cubicle houses.

The tested Blister sandbedmat met the requirements of the testing framework with respect to the investigated criteria.

More information

Further test results for cubicle flooring are available to download at www.dlg-test.de/stalleinrichtungen. The relevant DLG committees have published various instruction leaflets on the topics of animal welfare and cattle farming. These are available free of charge in PDF format at: www.dlg.org/merkblaetter.html

Test performed by

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Germany

DLG test scope

DLG Approved Test “Elastic Stable Flooring”
(as at 04/2010)

Area of expertise

Indoor operations

Project director

Graduate engineer. agr. Susanne Gäckler

Test engineer(s)

Dr. Harald Reubold*

* Author

The DLG

In addition to being the executing body of well-known tests for agricultural engineering, farm inputs and foods, the DLG is also an open forum for the exchange of knowledge and opinions in the agricultural and food industry.

Some 180 full-time employees and more than 3,000 volunteer experts are developing solutions to current problems. The more than 80 committees, working groups and committees thereby form the basis of expertise and continuity for the professional work. At the DLG, a great deal of specialist information for agriculture is created in the form of information leaflets and working papers, as well as articles in journals and books.

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fits, and contribute to the expert knowledge base of the agricultural industry. Further information can be obtained under www.dlg.org/mitgliedschaft.

The DLG Test Center Technology and Farm Inputs

The DLG Test Centre Technology and Farm Inputs in Groß-Umstadt is the benchmark for tested agricultural products and farm inputs, as well as a leading testing and certification service provider for independent technology tests. The DLG test engineers precisely examine product developments and innovations by utilizing state-of-the-art measurement technology and testing methods gained from practice.

As an accredited and EU registered testing laboratory the DLG Test Center Technology and Farm Inputs offers farmers and practitioners vital information and decision support for the investment planning for agricultural technology and farm inputs through recognized technology tests and DLG testing.

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