

## DLG Test Report 6381

Huber Technik Vertriebs GmbH

Cubicle 8GS

*Deformability/Elasticity, Permanent Tread Load, Abrasion Resistance, Slip Resistance*

### OVERVIEW

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A quality mark “**DLG-APPROVED for single value-determining criteria**” is awarded to agricultural products which have 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 for single value-determining criteria “**Deformability/Elasticity, Abrasion Resistance, Slip Resistance and Permanent Tread Load**” includes technical measurements on test stands and in the laboratories of the DLG Test Center. Abrasion Resistance, Slip Resistance, Deformability and Elasticity were measured and a Permanent Tread Load was applied. The test was based on the DLG Testing Framework for elastic stable flooring, as at April 2010. Other criteria were not investigated.

### EVALUATION – SUMMARY

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The Huber 8GS Cubicle Roll tested here is an elastic flooring in the resting area of raised stalls was investigated regarding durability and comfort properties on test stands in the DLG Approved Test. The deformability and elasticity of the mattress, abrasion resistance and slip resistance were measured and a permanent tread load was applied.

Test Characteristic	Test Result	Valuation*
<b>Deformability and Elasticity</b>		
New condition	25.3 mm	++
Endurance Test	27.1 mm	++
<b>Permanent Tread Load</b>		
	No permanent deformation	++
	No appreciable abrasion	+
<b>Abrasion Resistance</b>		
	Good wear resistance	+
<b>Slip Resistance</b>		
	Good on dry and wet surface	+

\* Evaluation range: + = resistant; 0 = limited resistant; – = not resistant

## THE PRODUCT

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### **Manufacturer and Applicant**

Huber Technik Vertriebs GmbH  
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85435 Erding, Germany

Product:  
Cubicle 8GS

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### **Description and Technical Data**

The tested cubicle 8GS is an elastic flooring

- For raised stalls
- Thickness approx. 49 mm
- Surface black rubber mat
  - Top coat with hammer top surface
  - Bottom with red fabric
  - Thickness approx. 9 mm
- Hardness Shore A: approx. 75
- Base of mattress consists of approx. 40 mm thick yellow foam panel
- Installed as rolls

## METHOD

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### **Deformability and Elasticity**

The deformability is measured when the product is new and the permanent tread load is reproduced through a continuous beating with a calotte ( $r = 120\text{mm}$ ) and a penetration force of 2000 N (appropriate 200 kg).

### **Permanent Tread Load**

The permanent tread load is measured on a test stand with a round steel foot in the standard test programme with 100,000 alternating loads at 10,000 N (corresponding to approx. 1,000 kg). The steel foot is adapted to the natural conditions as an “artificial cow foot”. The foot has a diameter of 105 mm and therefore a contact area of  $75\text{ cm}^2$ ; the carrying edge of the hoof is simulated by a 5 mm wide ring

### **Abrasion Resistance**

In a standardized abrasion test with 10.000 cycles the top cover was grinded with an emery cloth (granulation 280) and a grinding pressure of 500 N (=  $8.1\text{ N/cm}^2$  surface pressure). The friction element was cooled continuously with water to prevent an influence of the generated heat during the abrasion test. The size of the grinded area was  $61,5\text{ cm}^2$ .

## Slip Resistance

The measurements were carried out with the ComfortControl test rig of the DLG test center. A loaded (10 kg) round plastic foot (97 mm diameter, with a contact area of 74 cm<sup>2</sup>, 3 mm wide ring at the periphery of the ground) was pulled with a velocity of 20 mm/s across the mat.

## TEST RESULTS IN DETAIL

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### Deformability and Elasticity

In the ball penetration tests in new condition with a calotte (r = 120 mm), penetration depth was 25.3 mm. The resulting calculated bearing pressure of 10.5 N/cm<sup>2</sup> indicates a very low load on the carpal joints when lying down and getting up. Elasticity was measured following a permanent tread load exerted by a steel foot (contact area: 75 cm<sup>2</sup>) with 100,000 alternating loads at 10,000 N. Following the endurance test, the penetration depth of the calotte increased from 25.3 mm to 27.1 mm. The bearing pressure decreased from 10.5 N/cm<sup>2</sup> to 9.8 N/cm<sup>2</sup>. This means that deformability and elasticity slightly increase.

### Permanent Tread Load

After the Permanent Tread Load at the test stand with 100,000 alternating loads at 10,000 N, no appreciable wear could be observed. No lasting deformation was determined.

### Abrasion Resistance

The depth of abrasion after 10,000 double cycles is 1.0 mm, which amounts 11% of the total surface level. 1.6 g of the material was rubbed off.

### Slip Resistance

The measurement by the mobile Comfort Control Slip Resistance Test Stand lead to a good slip resistance on dry and wet surfaces. The coefficient of friction ( $\mu$ ) is above the minimum value of  $\mu = 0.45$ .

## RESULT

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The "DLG APPROVED test for single value-determining criteria" measures comfort and durability characteristics of Huber's cubicle 8GS for usage in the resting area of raised stalls. The mat has met the requirements of all criteria.

## FURTHER INFORMATION

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Please go to [www.dlg-test.de/stalleinrichtungen](http://www.dlg-test.de/stalleinrichtungen) to download more reports on animal welfare and cattle farming.

## ABOUT DLG

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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. There are over 80 committees, working groups and committees who create the base of expertise for 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. DLG organizes the world's leading professional exhibitions for the agriculture and food sector. This contributes to the transparent presentation of modern products, processes and services to the public. Further information can be obtained under [www.dlg.org/mitgliedschaft](http://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 testing 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 experience. As an accredited and EU registered testing laboratory the DLG Test Center Technology and Farm Inputs offers farmers and practitioners vital information and decision-making support for the investment planning of agricultural technology and farm inputs through recognized technology tests and DLG testing.

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*Please find all pictures, graphs, charts and seals in the official German version of the DLG test.*