

DLG Test Report 7015

DeLaval

Cubicle Frame for deep bedding cubicles

Acid resistance



DELAVAL
CUBICLE FRAME
✓ Acid resistance
DLG Test Report 7015



Überblick

A test mark „DLG-APPROVED for individual criteria“ is awarded for agricultural products which have successfully fulfilled a scope-reduced usability testing conducted by DLG according to independent and recognized evaluation criteria. The test is intended to highlight particular innovations and key criteria of the test object. The test may contain criteria from the DLG test scope for overall tests, or focus on other value-determining characteristics and properties of the test subject. The minimum requirements, test conditions and procedures as well as the evaluation bases of the test results will be specified in consultation with an expert group of DLG. They correspond to the recognized rules of technology, as well as scientific and agricultural knowledge and requirements. The successful testing is concluded with the publication of a test report, as well as the awarding of the test mark which is valid for five years from the date of awarding.



The DLG-APPROVED test for single value-determining criteria “Acid resistance” includes technical measurements in the lab of the DLG Test Center. The acid resistance was measured. The test was based on the DLG Testing Framework for stall facilities for cattle, as of September 2001. Other criteria were not investigated.

Assessment in brief

The DeLaval cubicle frame for deep bedding cubicles, was investigated with regard to durability properties in the DLG-APPROVED test for single value-determining criteria. The acid resistance was measured.

*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	limited resistant	o

* Evaluation range: + = resistant / o = limited resistant / - = not resistant

The Product

Manufacturer and Applicant

DeLaval International AB site Glinde, P.O. Box 1136, DE-21509 Glinde/Germany

Product:

DeLaval Cubicle Frame for deep bedding cubicles

Contact:

Phone +49 (0)4030 3344-308

Fax +49 (0)4030 3344-349

Mathias.Reichert@delaval.com

www.delaval.com

Description and Technical Data

The DeLaval cubicle frame is for deep bedding cubicles and supposed to be the boundary for the rear and front part of the cubicle.

DeLaval recommends to use the cubicle frame in combination with the DeLaval flexible cubicle divider, FCD only.

The profiles are made of recycled plastic.

Table 2:

Dimensions

Description	Weight (kg)	Dimensions (mm)
DeLaval cubicle frame, front	38.6	3000 x 100 x 140
DeLaval cubicle frame, front	60.9	3000 x 100 x 220
DeLaval cubicle frame, front	84.0	3000 x 100 x 300
DeLaval cubicle frame, front	24.4	1220 x 100 x 220
DeLaval cubicle frame, front	15.4	1220 x 100 x 140
DeLaval cubicle frame, front	33.6	1200 x 100 x 300
DeLaval cubicle frame, front	32.2	1150 x 100 x 300
DeLaval cubicle frame, front	30.9	1100 x 100 x 300
DeLaval cubicle frame, front	28.1	1000 x 100 x 300
DeLaval cubicle frame, rear	28.7	2620 x 100 x 200
DeLaval cubicle frame, rear	32.7	2620 x 100 x 240
DeLaval cubicle frame, rear	38.1	2620 x 100 x 280

Fixation

Rear: All elements have groove and tongue and are installed with 4pcs of anchor bolts onto the concrete floor. The elements have a length of 262 cm, which is equivalent to the dimension between center of two cubicles.

Front: The front elements are being placed into the post brackets for cubicle frame between the cubicle dividers.

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.

Detailed account of the test results

Acid resistance

The material of the cubicle frame was limited resistant against the Peracetic acid and resistant against the other used test liquids. The differences in weight, thickness and Shore A hardness between the acid treated and not acid treated samples were minor and lay in the range of water as standard.

Table 2:

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 glyoxylic acid	no changing	no changing	resistant
Peracetic acid	3000 ppm	colour change	colour change	limited resistant

Summary

Based on lab investigations, the criteria tested in this DLG-APPROVED test for single value-determining criteria evaluate the durability properties of the DeLaval cubicle frame for deep bedding cubicles.

The tested DeLaval cubicle frame met the requirements of the Testing Framework with respect to the investigated criteria.

Further information

Testing agency

DLG TestService GmbH, Gross-Umstadt location
The tests are conducted on behalf of DLG e.V.

DLG test framework

DLG-APPROVED test for single value-determining criteria “stall facilities for cattle” (as at 09/2001)

Department

Agriculture

Head of Department

Dr. Ulrich Rubenschuh

Test engineer(s)

Dr. Harald Reubold*

* Author

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Internal test code DLG: 2018-669

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DLG TestService GmbH
Groß-Umstadt location

Max-Eyth-Weg 1 • 64823 Groß-Umstadt • Germany
Phone: +49 69 24788-600 • Fax: +49 69 24788-690
Tech@DLG.org • www.DLG.org

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