

Test report

QMBLH 939 5149e

Customer: EFTEX Zubehörtechnik GmbH & Co. KG
Landwehrstr. 73
49393 Lohne

Test object: Fastenings for wave springs
(4 test sample submitted by the customer)

Task: Testing of fitness for use according to RAL-GZ 430/4

Conclusion:

The fastenings for wave springs were submitted to a test of fitness for use according to the guidelines of the "Deutsche Gütegemeinschaft Möbel e.V."

The fastening was carried out by two bridge bars each.

The General requirements for furniture RAL-GZ 430/4, edition 2008 were used.

The requirements concerning fitness for use are **fulfilled**.

During the tests no noise was detected.

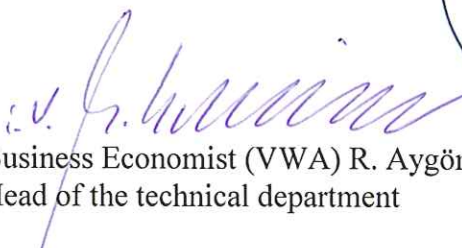
For details on technical features as well as detailed test conditions and requirements please refer to the following pages.

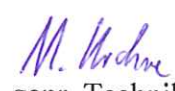
Herford, 14th Dec. 2009, translated 03rd Feb. 2010

QMBLH/ay/kr/an

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TEST RESULTS

Test object

Article:	Plastics spring clips for the fastening of wave springs	
Type/ Modell:	Type A Rapid Clip FG	spring initial tension 45 kg (manufacturer information)
	Type B Rapid Clip F	initial tension 22 kg (manufacturer information)
	Type C Rapid Clip FW8	initial tension 26 kg (manufacturer information)
	Type D Rapid Clip HA	initial tension 45 kg (manufacturer information)
Number of samples:	8 frames with springs and 4 different types of plastic clips	
Record-no.:	638-H9/ 10027213-1 654-H9/ 10027572-1	
Delivered on:	21 th Oct. 2009, 28 th Oct. 2009	
Delivered by:	orderer	

Scope of the tests

General tests

Test Standards

Testing according to DGM-requirements

- cold storage
- fatigue stress
- creep rupture tests

Area of application and test results

The test results only refer to the testing done on the test item which has been submitted. The assigned digital photographs in the test report are only used for explanatory purposes and are not part of the test report.

Accuracy of measurements

Unless otherwise stated, the measurement accuracy for longitudinal dimensions is in accordance with DIN 7168-g for old constructions and DIN ISO 2768 Part 1 "c" for new constructions. Measurement inaccuracy is < 5 % for all other physical measurement sizes. Testing is done under the usual room climate conditions.

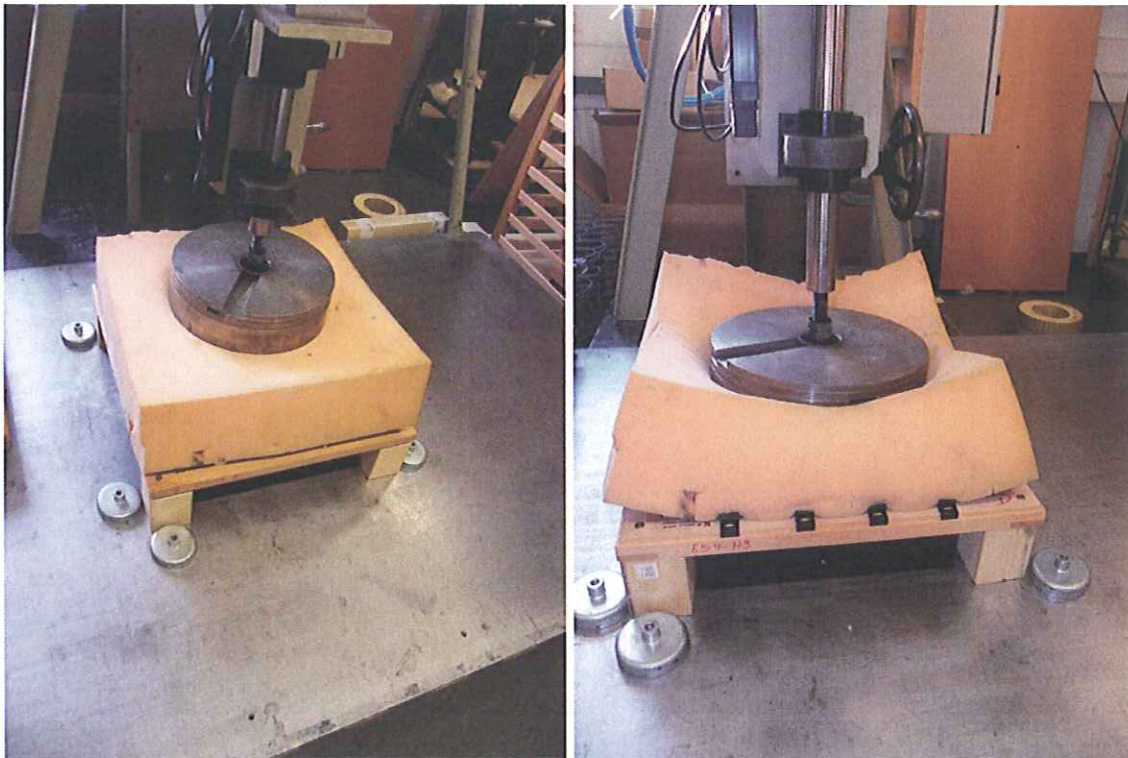
General examination

- Dimensions in "mm" -

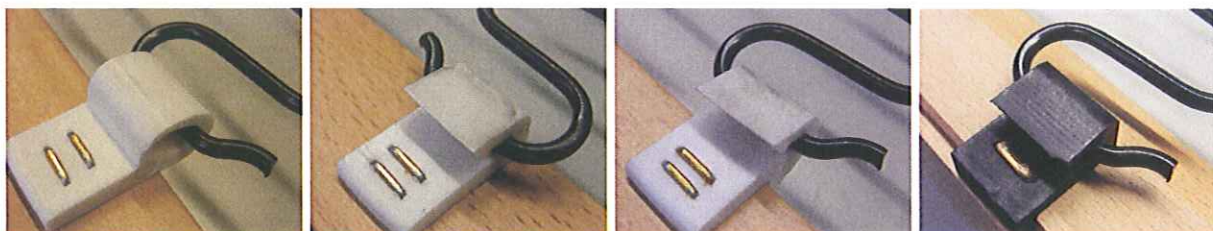
Frame:
Width: 500 x 500, 500 x 570
Height: 27.30

Brief description of the sample

Fastening of wave springs, strenght of the wire ~ 4.0 mm, 4 springs, spacing ~ 85 mm.



Test setup



Type A Rapid Clip FG


Type B Rapid Clip F

Type C Rapid Clip FW8

Type D Rapid Clip HA

Requirements	Results	+ positive - negative . / n.a.																		
<p>Technical examination</p> <p>Festigkeitsprüfung</p> <p>Test conditions:</p> <p>Drop weight 75 kg, 300 mm diameter, curved bottom side R = 400 mm, free fall of the testing weight side, fall height and points of impact variable in concern of the kind of stressing</p> <p>Testing a centre and edge of the seat plate</p> <table border="1" data-bbox="204 869 769 1028"><tr><td>Stress</td><td>Load alternation</td></tr><tr><td>Reaction force</td><td>Centre of the seat plate</td></tr><tr><td>1 500 N</td><td>15 000</td></tr><tr><td>2 000 N</td><td>10 000</td></tr></table> <p>Requirements:</p> <table border="1" data-bbox="185 1182 873 1559"><thead><tr><th>Testing criteria</th><th>Requirement</th></tr></thead><tbody><tr><td>Stress</td><td>normal</td></tr><tr><td>Reaction force</td><td>1500 N und 2000 N</td></tr><tr><td>Load alternation total</td><td>25 000</td></tr><tr><td>Function</td><td>no damages, cracks, fractures, no objectionable noises</td></tr></tbody></table>	Stress	Load alternation	Reaction force	Centre of the seat plate	1 500 N	15 000	2 000 N	10 000	Testing criteria	Requirement	Stress	normal	Reaction force	1500 N und 2000 N	Load alternation total	25 000	Function	no damages, cracks, fractures, no objectionable noises	<p>Requirements fulfilled</p> <p>Type A Rapid Clip FG Type B Rapid Clip F Type C Rapid Clip FW8 Type D Rapid Clip HA</p> <p>Annotation¹</p>	<p>+</p>
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¹ During the higher load with 2000 N reaction force, several wave springs in the middle part broke. These were replaced and the tests were continued. Foam material 500 x 500 x 140 mm, 35 kg/m³

Requirements	Results	+ positive - negative . / . n.a.
<p>Creep rupture test</p> <p>Test conditions: The seat plate is loaded with a sack of lead and gravel of 85 kg for one week</p> <p>Requirements: No damages, cracks or fractures</p>	<p>Requirements fulfilled</p>	<p>+</p>
<p>Cold storage</p> <p>Test conditions: Storage in a conditioning cabinet for 24 hours at -20 °C; directly afterwards 10-times loading with 850 N in the centre of the surface</p> <p>Requirements: No damages, cracks or fractures, no permanent deformations</p>	<p>Requirements fulfilled</p>	<p>+</p>
 <p>Conditioning cabinet</p>		



Conditioning cabinet