

# Evidence of Performance

## Classification of thermoplastic wood adhesives for non-structural applications

Test Report 505 33444/1e



Client **H.B. Fuller Deutschland GmbH**  
**Niederlassung**  
 Henriettenstr. 32

31582 Nienburg/Weser  
 Germany

### Basis

EN 205 : 1991-05  
 Test methods for wood adhesives for non-structural applications; determination of tensile shear strength of lap joints

EN 204 : 2001-05  
 Classification of thermoplastic wood adhesives for non-structural applications.

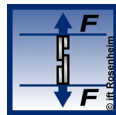
Corresponds to the national standard DIN EN.

Product	Wood adhesive
System designation	RAKOLL ECO 3
Hardener	-
Portion of hardener	-
Special features	-/-

### Instructions for use

The present test report serves to demonstrate the classification to load group D3

Classification according to EN 204



Load group D3

### Validity

The data and results given relate solely to the tested and described specimen.

Testing of adhesive strength does not allow any statement to be made on further characteristics of the tested adhesive regarding performance and quality.

Load group	Storage sequence	Min. value acc. to EN 204 in N/mm <sup>2</sup>	Mean value of the adhesive strength in N/mm <sup>2</sup>
D3	1	≥ 10	12.1
D3	3	≥ 2	2.8
D3	4	≥ 8	14.1

### Notes on publication

The ift-Guidance Sheet "Conditions and Guidance for the Use of ift Test Documents" applies.

The cover sheet can be used as abstract.

ift Rosenheim  
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### Contents

The report contains a total of 4 page/s

- 1 Object
- 2 Procedure
- 3 Detailed results



## 1 Object

### 1.1 Description of the test specimen

Building material	Wood adhesive
Manufacturer	H.B. Fuller Deutschland GmbH, D-31582 Nienburg/Weser
Date of production	February 2007
Product designation	RAKOLL ECO 3
Number of components	-
Hardener	-
Portion of hardener	-

To evaluate the performance of the adhesive, test specimen were made to DIN EN 205 with a thin adhesive joint.

Type of wood	Beech, non-damped
Apparent density kg/m <sup>3</sup>	700 ± 100
Moisture content in %	12 ± 1
Thickness of the joined parts in mm	5
Amount of adhesive in g/m <sup>2</sup> /type	approx. 150, applied on both sides
Open assembly time in min	none
Closed assembly time in min	approx. 3
Duration of pressure in h at (20 ± 2) °C	approx. 2
Magnitude of pressure in N/mm <sup>2</sup>	approx. 0.7

The description is based on inspecting of the test specimen at **ift**. Article designations/numbers as well as details of the material and gluing conditions were given by the client. (Additional data provided by the client are marked with \*).

## 2 Procedure

### 2.1 Sampling

The adhesive was chosen by the client

Delivery	12 March 2007
Registration number	21580/1

To evaluate the performance of the adhesive, test specimens were produced at **ift** according to DIN EN 205 : 1997-07 with a thin adhesive joint.

Number of test specimen per storage sequence 20 samples

## 2.2 Process

### Technical basics

EN 205 : 1991-05 Test methods for wood adhesives for non-structural applications; determination of tensile strength of lap joints

EN 204 : 2001-05 Classification of thermoplastic wood adhesives for non-structural application.

### Corresponds to the national standards:

DIN EN 205 : 1991-10 Test methods for wood adhesives for non-structural applications; determination of tensile strength of lap joints

DIN EN 204 : 2001-09 Classification of thermoplastic wood adhesives for non-structural application

Boundary conditions Correspond to the demands of the standard

Load speed 50 mm/min

Deviation There were the following deviations from the test procedure or test conditions:

Evaluation of 20 samples instead of 10 samples for each of the storage sequences.

## 2.3 Test equipment

Press: Equipment number: 21447  
Material testing machine corresponds to DIN EN ISO 7500-1 : 1999-11  
Equipment number: 22561  
Hot water container Equipment number: 22447  
Normal climate room: Equipment number: 22040  
Measuring device for  
Cut width: Equipment number: 22900

## 2.4 Testing

Test period 07 May 2007  
Testing member of staff Thomas Eder

### 3 Detailed results

**Table 1** Measured values and statistical evaluation to determine the load group D3 for the adhesive RAKOLL ECO 3

	Prüfung Nr.	D3 – 1		D3 – 3		D3 – 4	
	Messdaten	N/mm <sup>2</sup>		N/mm <sup>2</sup>		N/mm <sup>2</sup>	
	1	11.20	100	2.88	0	13.61	100
	2	11.48	100	3.17	0	13.99	100
	3	11.89	100	2.50	0	13.79	95
	4	12.40	100	2.94	0	13.66	100
	5	12.97	100	3.00	0	14.97	100
	6	12.25	100	2.61	0	15.32	100
	7	11.07	100	3.03	0	13.89	100
	8	11.19	100	2.43	0	14.22	97
	9	10.69	100	2.82	0	14.17	100
	10	12.08	100	2.95	0	14.91	97
	11	12.57	100	3.22	0	12.75	100
	12	12.08	100	2.72	0	15.22	100
	13	11.28	100	2.90	0	14.91	100
	14	11.93	100	2.13	0	13.28	100
	15	12.03	100	2.95	0	12.92	100
	16	13.72	100	3.02	0	14.38	100
	17	13.05	100	2.32	0	14.56	100
	18	12.81	100	2.75	0	14.71	100
	19	12.98	100	2.68	0	14.22	100
	20	12.43	100	3.10	0	12.25	100
Number		20		20		20	
Mean value		12.11	N/mm <sup>2</sup>	2.81	N/mm <sup>2</sup>	14.09	N/mm <sup>2</sup>
Standard deviation		0.79	N/mm <sup>2</sup>	0.29	N/mm <sup>2</sup>	0.84	N/mm <sup>2</sup>
Variation coefficient		6.52	%	10.31	%	5.96	%
Maximum		13.72	N/mm <sup>2</sup>	3.22	N/mm <sup>2</sup>	15.32	N/mm <sup>2</sup>
Minimum		10.69	N/mm <sup>2</sup>	2.13	N/mm <sup>2</sup>	12.25	N/mm <sup>2</sup>
Estimated wood rupture		100	%	0	%	95-100	%