

Classification report

Classification of thermoplastic wood adhesives for non-structural applications

Test report 505 29664/1 R1

Test report No. 505 29664/1 of 4. April 2005 has been revised because of a typing error. The valid test report has the number 505 29664/1 R1.

Client **Kossan Paint (M) Sdn. Bhd.**
Lot 414, 93/4 Batu, Jalan Kelang Kapar
Mukim Kapar

42200 Dearah Klang, Selangor Dural Ehsan
Malaysia

Product	Wood adhesive
Product name	KA-D4581
Hardener	KA-D400H
Portion of hardener	15 parts of weight
Special features	-

Classification according to EN 204



Load group D4

Load group	Storage sequence	Min. value acc. to EN 204 in N/mm ²	Mean value of the adhesive strength in N/mm ²
D4	1	≥ 10	15.8
D4	3	≥ 4	7.5
D4	5	≥ 4	4.8

ift Rosenheim
4 April 2005

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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 standards of DIN EN.

Instructions for use
This test report serves to prove classification to load group D4

Validity
The data and results stated refer exclusively to the test specimen tested and described.
Testing of adhesive strength does not render possible any statement on other properties of the tested adhesive determining performance and quality.

Notes on publication
The ift notice "Conditions and notes for the use of ift test documents" applies.
The cover sheet can be used as a summary.

Contents
The report comprises a total of 4 pages
1 Object
2 Procedure
3 Detailed results

1 Object

1.1 Description of the test specimen

Building material	Wood adhesive
Manufacturer	Kossan Rubber Industries BHD, MAL-42100 Klang
Date of production	February 2005
Product designation	KA-D4561
Number of components	2
Hardener	KA-D400H
Portion of hardener	15 parts of weight

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

Type of wood	Beech, non-damped
Apparent density kg/m^3	700 ± 100
Moisture content in %	12 ± 1
Thickness of the joined parts in mm	5
Amount of adhesive in g/m^2 /type	approx. 150, applied on both sides
Open assembly time in min	approx. 3
Closed assembly time in min	approx. 3
Duration of pressure in h at $(20 \pm 2) ^\circ\text{C}$	approx. 2
Magnitude of pressure in N/mm^2	approx. 0.7

The description is based on inspecting the test specimen at ift. Article designations / numbers as well as details of the material and gluing conditions were given by the client.

2 Procedure

2.1 Sampling

The adhesive was chosen by the client

Delivery	8 March 2005
Registration number	17954

To evaluate the performance of the adhesive, test specimens were produced at ift according to DIN EN 205 : 1991-10 with a thin adhesive joint.

Number of test specimens 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	March 2005
Testing member of staff	Thomas Eder

3 Detailed results

Table 1 Measured values and statistical evaluation to determine the load group D4 for the adhesive KA-D4561 with hardener KA-D400H (15 parts of weight)

	Test no.	D4 – 1	D4 – 3	D4 – 5
	Measuring data	N/mm ²	N/mm ²	N/mm ²
	1	15.37	6.23	4.06
	2	15.35	7.01	4.19
	3	14.71	7.48	4.46
	4	14.27	7.56	4.77
	5	13.87	7.59	4.95
	6	15.25	7.32	4.04
	7	14.84	8.07	4.07
	8	14.48	8.20	4.29
	9	13.38	8.06	4.09
	10	13.79	7.59	4.03
	11	15.89	7.48	4.60
	12	17.94	6.88	5.29
	13	17.65	7.70	5.50
	14	17.50	7.65	5.38
	15	17.59	6.75	5.05
	16	15.91	8.20	4.89
	17	16.78	8.30	5.50
	18	16.91	7.80	5.34
	19	17.12	8.11	5.43
	20	17.15	6.87	5.61
Number		20	20	20
Mean value		15.79 N/mm ²	7.54 N/mm ²	4.78 N/mm ²
Standard deviation		1.46 N/mm ²	0.56 N/mm ²	0.59 N/mm ²
Variation coefficient		9.23 %	7.45 %	12.27 %
Maximum		17.94 N/mm ²	8.30 N/mm ²	5.61 N/mm ²
Minimum		13.38 N/mm ²	6.23 N/mm ²	4.03 N/mm ²
Estimated wood rupture		100	0-70 %	0 %