

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2

Testing Methodology and Assessment

European beech

**Natural durable timber – Basidiomycete test results
IRG/WP Durability Database**

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Disclaimer

The responsibility for the data presented in this paper falls to the authors exclusively. The data presented are raw test data and intended to get used for scientific purposes only.

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AIMS AND SCOPE OF THE IRG-WP DURABILITY DATABASE

The overall aim of the IRG-WP durability data base is the allocation of wood durability test results for comparative studies and re-analyses. The data base shall serve as pool for service life prediction and modelling and shall contribute to an enhanced understanding of wood durability. It is an open web-based platform for scientific exchange in the field of wood durability and wood protection.

It is NOT the aim of the data base to promote or denigrate any product or material. The data base will contain raw data only; no statistical evaluation will be included. Thus it will be the exclusive responsibility of the user to interpret the test results published in the data base.

For each data set, the full range of information about the test method, the test material, and other relevant parameters, is required to guarantee reliability of the data. For this reason every data set submitted is reviewed and checked for completeness of all relevant data.

The database allows submission of assessment data from all kinds of standardized and non-standardized wood durability tests.

Records of the IRG/WP Durability data base shall be cited as in the following example:

Brischke C., Meyer L. (2013) Douglas fir. Natural durable timber - Field test results. IRG/WP Durability Database. Stockholm: The International Research Group on Wood Protection, IRG/WP/DDB 13-00001.

INFORMATION

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TESTED TIMBER

Trade name	European beech
Botanical name	<i>Fagus sylvatica</i> L.
Origin	Germany
Number of replicates	30

TEST METHODS

Standard method	EN 113 (1996)
Alteration of standard	16 weeks exposure
Leaching/Ageing procedure	EN 84 (1997)
Specimen dimension and shape	50 x 25 x 15 mm ³

RESULTS

Assessment

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Postia placenta</i> (<i>Rhodonina placenta</i>)			<i>Trametes versicolor</i>		
Measure	Relative mass loss	Final moisture content	Oven-dry density	Relative mass loss	Final moisture content	Oven-dry density
Replicate ID	[%]	[%]	[kg/m ³]	[%]	[%]	[kg/m ³]
1	1.7	74.9	640	23.0	50.4	730
2	1.1	68.9	690	26.1	53.0	680
3	19.1	48.0	740	26.1	49.9	660
4	0.8	64.7	640	24.7	50.8	700
5	7.8	54.7	650	27.1	50.2	670
6	0.6	67.8	610	27.0	51.9	650
7	4.0	59.4	670	21.9	44.7	650
8	28.7	75.6	690	21.2	46.5	710
9	21.4	49.3	660	22.2	47.7	690
10	0.8	68.4	710	24.9	53.2	640
11	27.0	56.9	630	20.9	51.2	730
12	1.1	59.7	680	23.7	42.3	680
13	0.2	71.8	620	31.5	55.7	660
14	12.2	46.5	710	30.2	72.8	690
15	28.4	64.4	750	37.6	115.2	640
16	26.9	66.9	640	34.4	59.4	660
17	5.2	55.9	630	33.2	84.8	650
18	1.6	59.6	730	31.3	51.2	660
19	0.6	66.2	640	32.3	71.3	710
20	0.7	66.5	650	36.4	94.8	630
21	0.6	67.1	690	26.6	52.2	680
22	8.4	55.6	650	29.2	56.4	690
23	0.3	66.9	650	32.7	57.0	650
24	1.0	60.3	730	33.8	74.9	640
25	1.0	59.2	690	24.9	47.6	730
26	1.3	63.1	680	26.5	54.0	730
27	0.5	67.6	660	40.4	121.9	660
28	13.3	44.2	720	37.6	62.0	660
29	0.7	61.0	670	28.5	55.2	680
30	1.0	61.8	640	24.8	48.3	700
31	0.8	65.5	670	31.5	61.0	640
32	0.5	64.1	730	26.5	48.2	750
33	1.3	66.2	670	26.7	46.0	730
34	0.9	65.8	630	38.2	100.3	640
35	0.6	62.1	640	32.8	100.3	670
36	0.5	67.0	670	29.6	51.8	680

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Postia placenta</i> (<i>Rhodonía placenta</i>)			<i>Trametes versicolor</i>		
Measure	Relative mass loss	Final moisture content	Oven-dry density	Relative mass loss	Final moisture content	Oven-dry density
Replicate ID	[%]	[%]	[kg/m³]	[%]	[%]	[kg/m³]
37	19.0	53.5	680	26.3	52.4	760
38	1.5	65.4	650	30.8	47.4	640
39	9.6	48.3	730	35.8	64.5	680
40	28.7	72.4	660	30.1	55.0	750
41	25.7	60.2	650	29.7	53.5	650
42	18.5	49.8	660	31.4	55.9	650
43	0.9	64.0	760	27.1	48.6	700
44	0.8	58.2	670	30.0	46.8	650
45	5.8	55.1	680	28.3	65.0	680
46	0.8	57.6	700	25.9	52.9	680
47	7.1	52.5	640	28.4	56.1	650
48	27.5	89.8	660	31.6	58.3	640
49	0.7	67.9	650	29.1	55.8	630
50	1.1	59.8	610	29.6	55.4	650
51	1.4	61.3	610	29.6	54.1	730
52	27.1	77.6	650	28.9	52.7	680
53	2.1	59.2	670	33.5	85.1	600
54	7.5	54.8	680	25.3	53.0	720
55	1.9	54.5	660	37.0	82.5	600
56	19.8	48.3	640	31.9	47.7	690
57	1.1	64.1	620	28.0	49.8	670
58	1.2	56.9	710	27.3	47.4	730
59	30.5	94.0	650	27.0	48.6	660
60	27.2	96.2	690	24.2	50.7	690
61				27.4	48.0	650
62				32.3	74.5	670
63				25.6	46.9	650
64				28.0	51.8	690
65				28.0	46.4	640
66				25.5	43.6	700
67				25.4	47.0	710
68				26.5	48.8	620
69				25.5	45.5	710
70				26.9	47.7	670
71				24.9	45.3	730
72				25.0	44.5	650

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Coniophora puteana</i>					
Measure	Relative mass loss	Final moisture content	Oven-dry density			
Replicate ID	[%]	[%]	[kg/m ³]			
1	49.9	68.3	660			
2	53.1	60.1	610			
3	56.3	63.9	600			
4	52.3	64.2	670			
5	51.1	57.8	680			
6	45.9	61.4	650			
7	43.2	61.6	670			
8	41.0	61.2	710			
9	48.1	64.1	690			
10	44.2	67.3	720			
11	49.4	61.8	660			
12	47.2	73.9	650			
13	39.6	61.1	680			
14	48.8	69.3	630			
15	35.9	64.1	750			
16	51.4	61.8	660			
17	52.1	59.4	710			
18	43.8	63.8	760			
19	55.7	55.9	640			
20	44.9	60.1	640			
21	53.8	62.0	690			
22	49.4	58.1	670			
23	47.8	58.8	700			
24	47.1	64.3	650			
25	41.0	57.1	720			
26	47.8	64.7	660			
27	50.9	65.1	660			
28	53.2	66.4	650			
29	47.6	60.6	740			
30	51.4	60.0	680			
31	46.8	61.0	660			
32	52.7	61.4	640			
33	49.1	59.4	660			
34	41.2	72.2	700			
35	49.5	63.8	700			
36	52.6	62.1	670			
37	42.6	68.5	720			
38	52.8	66.3	650			
39	54.9	54.2	670			

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Coniophora puteana</i>					
Measure	Relative mass loss	Final moisture content	Oven-dry density			
Replicate ID	[%]	[%]	[kg/m ³]			
40	58.8	67.6	660			
41	53.0	58.5	620			
42	56.2	65.3	640			
43	44.2	63.1	650			
44	47.0	62.5	650			
45	43.9	55.1	750			
46	47.0	63.1	660			
47	46.2	65.1	640			
48	40.5	72.3	660			
49	44.2	65.3	650			
50	36.5	63.5	680			
51	37.4	62.3	650			
52	37.4	66.2	650			
53	47.5	60.6	670			
54	37.5	62.9	670			
55	44.6	66.9	630			
56	45.2	75.3	660			
57	35.6	65.7	690			
58	40.3	75.7	680			
59	47.5	67.0	610			
60	42.3	72.6	680			