

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 *Fagus sylvatica*
Origin Germany
Number of replicates Depends on test fungus

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>Coniophora puteana</i>			<i>Gloeophyllum trabeum</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	34.5	57.2	602	26.2	90.3	593
2	36.9	56.3	650	27.8	86.4	592
3	21.4	46.5	574	27.6	81.7	590
4	42.0	59.3	669	25.3	89.9	646
5	39.9	50.9	721	31.9	58.7	566
6	40.2	58.6	708	27.1	45.2	598
7	42.1	60.9	626	20.2	47.9	593
8	42.1	52.3	557	35.5	45.2	600
9	41.8	54.7	630	25.3	42.4	574
10	34.4	51.7	570	22.9	64.0	632
11	36.9	60.8	678	32.5	92.1	622
12	45.0	59.3	628	34.7	99.5	653
13	33.2	60.0	609	26.5	68.0	617
14	35.2	57.7	615	31.6	45.1	588
15	40.7	61.3	639	32.0	44.7	688
16	31.7	67.2	661	32.9	70.0	628
17	43.3	70.4	687	28.3	93.1	653
18	33.2	60.4	636	33.9	77.9	580

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Postia placenta</i> (<i>Rhodonía placenta</i>)			<i>Serpula lacrymans</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]
1	11.6	50.8	659	-1.2	39.0	567
2	13.2	48.4	639	1.4	38.3	629
3	11.8	49.0	566	-1.5	40.3	593
4	5.3	36.1	584	-0.5	47.7	587
5	20.2	54.8	681	-0.7	54.5	653
6	19.5	46.8	582	26.3	41.2	636
7	19.1	54.9	611	13.3	48.5	617
8	19.7	51.6	641	37.7	46.1	625
9	22.0	60.3	613	5.1	44.2	610
10	21.7	59.8	629	8.7	42.2	675

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Postia placenta</i> (<i>Rhodonía placenta</i>)			<i>Serpula lacrymans</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]
11	16.5	71.3	661	10.9	39.1	618
12	21.8	53.0	639	23.5	40.8	656
13	15.5	56.1	628	-1.1	46.0	567
14	14.7	75.1	620	19.4	39.8	633
15	18.8	54.9	686	0.0	44.4	205
16	21.5	58.1	667	-1.1	46.8	599
17	18.0	48.6	567	10.7	37.4	569
18	16.0	43.4	616	-1.1	41.6	573

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Trametes versicolor</i>			<i>Donkioporia expansa</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	9.7	34.3	606	29.4	69.9	611
2	13.5	49.1	593	28.5	60.1	639
3	11.0	33.8	609	28.3	66.8	654
4	20.1	47.4	646	25.2	63.7	646
5	17.2	50.8	657	28.9	71.0	622
6	16.5	57.8	593	27.4	62.4	621
7	27.0	65.4	655	36.9	105.5	659
8	23.4	45.2	668	32.5	93.0	672
9	19.0	66.0	600	29.4	123.0	624
10	23.4	57.7	615	34.7	122.1	616
11	19.3	59.8	611	33.7	119.1	653
12	23.1	61.6	596	40.1	103.5	699
13	15.8	57.4	574	30.6	109.1	653
14	23.3	70.6	599	28.4	94.5	617
15	22.4	58.1	640	29.8	79.8	676
16	24.5	74.0	661	28.7	96.8	572
17	23.9	70.8	615	29.7	96.7	606
18	21.8	62.9	605	30.6	110.6	576
19	19.4	42.9	554	31.7	129.6	575
20	18.5	64.1	569	31.6	124.7	632
21	26.7	62.7	616	25.8	119.5	595