

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2

Testing Methodology and Assessment

European beech

**Natural durable timber – Soil box test
IRG/WP Durability Database**

Bongers, F.; Gellerich, A.; Bollmus, S.

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.

**IRG SECRETARIAT
Box 5609
SE-114 86 Stockholm
Sweden
www.irg-wp.org**

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

Submission Date 08.01.2016

AUTHORS

Corresponding author

Ferry Bongers

Email ferry.bongers@accsysplc.com

Institution Accsys Technologies

Street/PO Box PO Box 2147

City Arnhem

Zip Code 6802 CC

Country Netherlands

Author 2

Antje Gellerich

Email Antje.Gellerich@forst.uni-goettingen.de

Institution Georg-August-Universität Göttingen

Street/PO Box Büsgenweg 4

City Göttingen

Zip Code D-37077

Country Germany

Author 3

Susanne Bollmus

Email sbollmu@gwdg.de

Institution Georg-August-Universität Göttingen

Street/PO Box Büsgenweg 4

City Göttingen

Zip Code D-37077

Country Germany

TESTED TIMBER

Trade name	European beech
Botanical name	<i>Fagus sylvatica</i> L.
Origin	Germany
Number of replicates	60

TEST METHODS

Standard method	ENV 807 (2001)
Specimen dimension and shape	100 x 10 x 5 mm ³

RESULTS

Assessment

Exposure time	16 weeks			32 weeks		
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	27.3	125.5	700	49.7	148.8	658
2	32.1	139.3	663	52.7	127.2	685
3	35.6	145.0	660	59.0	155.4	615
4	33.5	139.3	654	30.4	134.8	641
5	31.4	146.8	629	58.7	160.1	695
6	34.4	143.1	663	35.8	128.8	700
7	39.2	170.7	676	53.9	147.5	644
8	31.2	140.8	650	39.0	126.2	709
9	24.6	112.4	629	54.5	128.6	680
10	30.0	120.6	698	55.3	125.1	706
11	28.8	138.5	665	47.7	142.6	682
12	27.8	122.0	717	35.6	124.7	717
13	26.3	122.4	692	46.3	141.4	671
14	36.5	140.5	656	62.9	140.1	661
15	30.2	140.4	676	49.6	138.9	687
16	41.0	147.7	657	39.1	150.0	679
17	36.4	140.0	647	51.2	137.9	657
18	29.6	132.6	671	38.8	142.1	645
19	28.9	132.7	671	41.5	153.1	660
20	31.3	143.8	638	36.8	148.3	664
21	36.1	133.3	679	35.2	128.8	723
22	31.8	159.0	626	33.6	126.7	709
23	27.7	120.9	683	43.2	112.8	718
24	21.9	127.8	713	48.5	125.2	646
25	21.5	132.7	699	37.7	119.0	709
26	25.2	117.3	711	53.8	140.7	652
27	36.0	117.8	682	40.9	132.5	704
28	32.7	119.4	658	60.5	151.5	654
29	41.6	143.8	634	54.4	143.1	648
30	30.2	153.6	623	57.0	160.3	646
31	25.6	127.0	680	43.9	151.3	658
32	29.4	118.5	721	39.7	140.2	690
33	25.0	143.9	630	47.3	147.8	658
34	28.1	132.4	664	38.7	153.5	666
35	38.4	132.5	679	47.3	140.7	673
36	37.2	138.9	661	49.8	158.0	671
37	36.9	135.3	668	40.7	128.8	689

Exposure time	16 weeks			32 weeks		
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]
38	34.2	140.7	674	69.1	202.8	722
39	28.6	147.7	636	28.7	130.8	692
40	33.3	135.0	676	39.3	136.1	728
41	36.5	141.7	635	31.9	131.0	712
42	22.7	124.4	704	45.8	162.7	637
43	23.8	121.0	694	43.4	152.2	659
44	32.9	126.9	683	33.5	131.2	722
45	27.5	129.8	675	46.9	150.5	663
46	36.0	127.5	661	40.4	162.7	629
47	24.3	137.1	622	56.1	145.9	654
48	28.8	132.4	664	47.0	166.0	655
49	28.6	144.2	639	39.5	143.1	674
50	21.0	117.1	740	34.7	134.9	694
51	33.8	140.3	650	49.2	150.7	663
52	31.7	122.6	670	46.5	140.3	698
53	36.7	141.2	642	58.1	131.2	666
54	29.9	120.7	689	53.4	152.8	661
55	24.3	144.6	626	54.8	124.8	706
56	39.4	143.6	641	34.9	130.9	710
57	30.2	132.1	653	51.1	165.2	636
58	26.5	122.1	701	67.4	180.8	620
59	26.6	138.1	666	38.9	137.4	691
60	34.8	139.2	684	40.6	151.0	652