

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2

Testing Methodology and Assessment

English oak

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

Brischke, C.; Meyer, L.

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 English oak
Botanical name *Quercus robur* L.
Origin Germany
Number of replicates 10
Sampling (optional)

Timber quality (optional)

REFERENCE TIMBER

Trade name Scots pine sapwood

Botanical name *Pinus sylvestris* L.

Origin Sweden

Number of replicates 10

Sampling (optional)

Timber quality (optional)

TEST METHODS

Standard method Graveyard test - EN252 (1989)

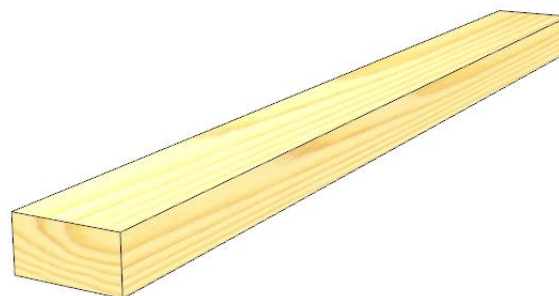
Alteration of standard (optional) Field soil was fertilized; 40-60 g/m² added three times per year. Fertilizer contained 5.5 % nitrate nitrogen, 6.5 % ammoniac nitrogen, 18 % phosphate, 17 % potassium oxide, 2 % magnesium oxide, 0.02 % boron, 0.01 % zinc

Non-standard method

Reference EN 252 (1989) Field test method for determining the relative protective effectiveness of a wood preservative in ground contact. European Committee for Standardization

Specimen dimension and shape 25 x 50 x 500 mm³

Sketch of specimen (optional)



Rating scheme	0 (sound), 1 (slight decay), 2 (moderate decay), 3 (severe decay), 4 (failure) after EN 252 (1989)
Address of test site	Herrenhäuser Straße 2, 30419 Hannover
Geographic coordinates (optional)	52°39'51,34"N, 9°70'19,17"E
Start of test	June 15 2008
Last evaluation	January 31 2013
Status of test	terminated

RESULTS

Assessment

Material	<i>Quercus robur</i> L.					
Date	15.09.2008	18.12.2008	16.03.2009	15.06.2009	15.09.2009	16.12.2009
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	0	0	0	1	1	2
2	1	1	1	1	2	2
3	0	0	0	1	1	1
4	0	0	0	1	1	2
5	1	1	1	1	3	2
6	0	0	1	1	1	1
7	0	0	0	1	1	1
8	1	1	1	2	3	3
9	0	0	0	1	1	1
10	1	1	1	1	2	3

Material	<i>Quercus robur</i> L.					
Date	17.03.2010	17.06.2010	22.09.2010	16.03.2011	15.06.2011	15.12.2011
Assessment	7	8	9	10	11	12
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	2	2	2	3	3	4
2	2	2	2	3	3	3
3	1	2	2	2	3	4
4	3	3	3	3	3	4
5	2	2	3	3	3	4
6	1	1	2	3	3	3
7	2	2	3	3	3	4
8	4	4	4	4	4	4
9	2	2	3	3	3	3
10	3	3	lost	lost	lost	lost

Material	<i>Quercus robur</i> L.					
Date	15.06.2012	31.01.13				
Assessment	13	14	15	16	17	18
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	4	4				
2	3	4				
3	4	4				
4	4	4				
5	4	4				
6	4	4				
7	4	4				
8	4	4				
9	3	4				
10	lost	lost				

Decay types

Material	<i>Quercus robur</i> L.					
Date	15.09.2008	18.12.2008	16.03.2009	15.06.2009	15.09.2009	16.12.2009
Assessment	1	2	3	4	5	6
Replicate ID						
1				W	W	SW
2	W	W	W	SW	S	SW
3				SW	S	SW
4				S	SW	SW
5	W	W	W	SW	W	SW
6				S	S	S
7				SW	SW	SW
8	W	S	S	SW	SW	W
9				S	S	S
10	W	W	W	SW	W	S

Material	<i>Quercus robur</i> L.					
Date	17.03.2010	17.06.2010	22.09.2010	16.03.2011	15.06.2011	15.12.2011
Assessment	7	8	9	10	11	12
Replicate ID						
1	W	S	SW	SW	SW	SW
2	SW	SW	SW	SW	SW	SW
3	SW	S	S	S	S	S
4	SW	SW	SW	SW	SW	SW
5	SW	S	W	W	W	W
6	W	S	SW	SW	SW	SW
7	SW	SW	SW	SW	SW	SW
8	SW	SW	SW	SW	SW	SW
9	SW	SW	SW	SW	SW	SW
10	W	SW	W	W	W	W

Material	<i>Quercus robur</i> L.					
Date	15.06.2012	31.01.13				
Assessment	13	14	15	16	17	18
Replicate ID						
1	SW	SW				
2	SW	SW				
3	S	S				
4	SW	SW				
5	W	W				
6	SW	SW				
7	SW	SW				
8	SW	SW				
9	SW	SW				
10	W	W				

W = White rot, B = Brown rot, S = Soft rot

Assessment Reference

Material	<i>Pinus sylvestris</i> L.					
Date	15.09.2008	18.12.2008	16.03.2009	15.06.2009	15.09.2009	16.12.2009
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	0	0	0	2	4	4
2	0	0	0	1	4	4
3	0	1	1	1	4	4
4	1	1	1	2	4	4
5	1	1	2	4	4	4
6	0	0	0	1	4	4
7	0	0	0	4	4	4
8	0	0	0	2	4	4
9	1	1	1	4	4	4
10	2	3	3	4	4	4

Material	<i>Pinus sylvestris</i> L.					
Date	17.03.2010	17.06.2010	22.09.2010	16.03.2011	15.06.2011	15.12.2011
Assessment	7	8	9	10	11	12
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	4	4	4	4	4	4
2	4	4	4	4	4	4
3	4	4	4	4	4	4
4	4	4	4	4	4	4
5	4	4	4	4	4	4
6	4	4	4	4	4	4
7	4	4	4	4	4	4
8	4	4	4	4	4	4
9	4	4	4	4	4	4
10	4	4	4	4	4	4

Material	<i>Pinus sylvestris</i> L.					
Date	15.06.2012	31.01.13				
Assessment	13	14	15	16	17	18
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	4	4				
2	4	4				
3	4	4				
4	4	4				
5	4	4				
6	4	4				
7	4	4				
8	4	4				
9	4	4				
10	4	4				

Decay types reference

Material	<i>Pinus sylvestris</i> L.					
Date	15.09.2008	18.12.2008	16.03.2009	15.06.2009	15.09.2009	16.12.2009
Assessment	1	2	3	4	5	6
Replicate ID						
1				SW	SW	SW
2				S	S	S
3				S	SW	SW
4	S	W	S	S	S	S
5	W	SW	SW	W	W	W
6		W		W	SW	SW
7				W	SW	SW
8				W	SW	SW
9	S	S	S	W	W	W
10	W	W	W	W	W	W

Material	<i>Pinus sylvestris</i> L.					
Date	17.03.2010	17.06.2010	22.09.2010	16.03.2011	15.06.2011	15.12.2011
Assessment	7	8	9	10	11	12
Replicate ID						
1	SW	SW	SW	SW	SW	SW
2	S	S	S	S	S	S
3	SW	SW	SW	SW	SW	SW
4	S	S	S	S	S	S
5	W	W	W	W	W	W
6	SW	SW	SW	SW	SW	SW
7	SW	SW	SW	SW	SW	SW
8	SW	SW	SW	SW	SW	SW
9	W	W	W	W	W	W
10	W	W	W	W	W	W

Material	<i>Pinus sylvestris</i> L.					
Date	15.06.2012	31.01.13				
Assessment	13	14	15	16	17	18
Replicate ID						
1	SW	SW				
2	S	S				
3	SW	SW				
4	S	S				
5	W	W				
6	SW	SW				
7	SW	SW				
8	SW	SW				
9	W	W				
10	W	W				

W = White rot, B = Brown rot, S = Soft rot

REFERENCES

- Brischke C, Meyer L, Olberding S (2013) Durability of wood exposed in ground–Comparative field trials with different soil substrates. International Biodeterioration & Biodegradation. <http://dx.doi.org/10.1016/j.ibiod.2013.06.022>
- Olberding S (2010) Untersuchung verschiedener Standortparameter auf die Gebrauchsdauer von Holz im Erdkontakt. Master thesis, Leibniz University Hannover, Faculty of Architecture and Landscape Science, Hannover