

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2

Testing Methodology and Assessment

English oak

**Natural durability – Field 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	English oak
Botanical name	<i>Quercus robur</i> L.
Origin	Germany (3 origins)
Dimension and shape of specimens	Specimens according to EN 252 (1989)
Number of replicates	30 (10 per origin)
Sampling	Exclusively heartwood

REFERENCE TIMBER

Trade name	Scots pine sapwood
Botanical name	<i>Pinus sylvestris</i> L.
Origin	Germany
Number of replicates	30 (10 per origin)

TEST METHODS

Standard method	EN 252 (1989) Wood preservatives. Field test method for determining the relative protective effectiveness of a wood preservative in ground contact.
Reference	EN 252 (1989) Wood preservatives. Field test method for determining the relative protective effectiveness of a wood preservative in ground contact. European Committee for Standardization
Specimen dimension and shape	50 x 25 x 500 mm ³
Rating scheme	0 (sound), 1 (slight decay), 2 (moderate decay), 3 (severe decay), 4 (failure) after EN 252 (1989)
Address of test site	Leuschnerstraße 91, 21031 Hamburg-Lohbrügge,
Geographic coordinates (optional)	Latitude: 53.505050 Altitude: 10.201255

Start of test	May 2000
Last evaluation	September 2011
Status of test	Terminated

RESULTS

Assessment tested timber

Material	<i>Quercus robur</i> L.					
Date	06.12.2000	08.10.2001	02.09.2002	28.08.2003	07.09.2004	03.10.2005
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	1	1	1	2	2	2
2	1	1	2	2	2	3
3	1	1	2	2	3	3
4	0	2	2	4	4	4
5	1	1	2	4	4	4
6	0	1	1	3	3	3
7	0	1	1	2	2	2
8	0	1	1	2	2	3
9	1	1	1	2	2	3
10	0	1	1	2	2	2
11	0	1	2	3	3	4
12	1	1	1	3	2	4
13	0	1	1	2	2	3
14	1	1	1	2	2	2
15	1	1	1	2	2	3
16	0	1	1	3	2	3
17	0	1	0	2	2	2
18	1	1	1	2	3	3
19	0	1	1	1	2	3
20	1	1	1	2	1	2
21	1	1	1	2	2	3
22	0	1	1	2	2	2
23	1	1	1	2	2	3
24	1	1	1	2	2	2
25	0	1	1	2	2	3
26	1	0	1	2	2	2
27	1	2	3	4	4	4
28	0	0	1	2	3	3
29	1	1	1	2	2	3
30	1	1	1	2	2	3

Material	<i>Quercus robur</i> L.					
Date	05.10.2006	06.09.2007	01.10.2008	08.10.2009	21.09.2010	14.09.2011
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	3	4	4	4	4	4
2	3	4	4	4	4	4
3	3	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	3	4	4	4	4	4
8	4	4	4	4	4	4
9	4	4	4	4	4	4
10	3	4	4	4	4	4
11	4	4	4	4	4	4
12	4	4	4	4	4	4
13	3	4	4	4	4	4
14	3	3	3	3	3	4
15	4	4	4	4	4	4
16	3	3	3	4	4	4
17	3	4	4	4	4	4
18	4	4	4	4	4	4
19	3	4	4	4	4	4
20	2	3	3	3	3	4
21	4	4	4	4	4	4
22	4	4	4	4	4	4
23	4	4	4	4	4	4
24	4	4	4	4	4	4
25	4	4	4	4	4	4
26	3	4	4	4	4	4
27	4	4	4	4	4	4
28	4	4	4	4	4	4
29	4	4	4	4	4	4
30	4	4	4	4	4	4

Assessment reference

Material	<i>Pinus sylvestris</i> L.					
Date	06.12.2000	08.10.2001	02.09.2002	28.08.2003	07.09.2004	03.10.2005
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	0	1	2	3	4	4
2	0	2	4	4	4	4
3	0	3	4	4	4	4
4	0	1	1	3	4	4
5	1	3	3	4	4	4
6	4	4	4	4	4	4
7	0	1	2	3	3	4
8	1	1	2	3	4	4
9	0	1	2	3	4	4
10	0	2	3	4	4	4
11	0	2	2	4	4	4
12	1	1	1	3	4	4
13	2	2	2	3	3	4
14	1	2	1	3	3	4
15	2	2	3	3	4	4
16	0	0	1	3	3	4
17	1	1	1	3	4	4
18	1	2	2	3	3	4
19	3	3	2	3	3	4
20	1	1	1	3	3	4
21	1	2	2	2	2	4
22	1	1	0	2	3	3
23	0	1	1	3	3	4
24	2	2	1	2	3	4
25	1	1	2	3	3	4
26	1	1	1	3	3	4
27	0	1	1	2	3	4
28	1	2	3	4	4	4
29	0	1	1	3	3	4
30	1	1	3	4	4	4

Material	<i>Pinus sylvestris</i> L.					
Date	05.10.2006	06.09.2007	01.10.2008	08.10.2009	21.09.2010	14.09.2011
Assessment	1	2	3	4	5	6
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
11	4	4	4	4	4	4
12	4	4	4	4	4	4
13	4	4	4	4	4	4
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17	4	4	4	4	4	4
18	4	4	4	4	4	4
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21	4	4	4	4	4	4
22	4	4	4	4	4	4
23	4	4	4	4	4	4
24	4	4	4	4	4	4
25	4	4	4	4	4	4
26	4	4	4	4	4	4
27	4	4	4	4	4	4
28	4	4	4	4	4	4
29	4	4	4	4	4	4
30	4	4	4	4	4	4

REFERENCES

Augusta, U. (2007) Untersuchung der natürlichen Dauerhaftigkeit wirtschaftlich bedeutender Holzarten bei verschiedener Beanspruchung im Außenbereich. Dissertation. Universität Hamburg.

http://ediss.sub.uni-hamburg.de/volltexte/2007/3344/pdf/Diss_U.Augusta.pdf

- Brischke C., Welzbacher, C.R., Rapp, A.O., Augusta U., Brandt K. (2009) Comparative studies on the in-ground and above-ground durability of European oak heartwood (*Quercus petraea* Liebl. and *Quercus robur* L.). Eur. J. Wood Prod. 67, 329-338
- Rapp A.O., Augusta U., Brandt K., Melcher E. (2010) Natürliche Dauerhaftigkeit verschiedener Holzarten. Ergebnisse aus acht Jahren Feldversuch. Wiener Holzschutztage 2010. S. 43-49. ISBN 978-3-9503036-1-2