

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2

Testing Methodology and Assessment

American red oak

**Natural durable timber – Laboratory 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 American red oak
Botanical name *Quercus rubra* L.
Origin North America
Number of replicates 30

REFERENCE TIMBER

Trade name European beech & Scots pine sapwood
Botanical name *Fagus sylvatica* L. & *Pinus sylvestris* L.
Origin Eastern Europe & Northern Europe
Number of replicates 10

TEST METHODS

Standard method Basidiomycetes test – CEN/TS 15083-1 (2005)

Leaching/Ageing procedure	none
Sterilisation	Gamma treatment
Specimen dimension and shape	50 x 25 x 15 mm ³
Start of test	April 5 2013
Last evaluation	July 26 2013

RESULTS

Assessment

Material	<i>Quercus rubra</i> L.					
Test fungus	<i>Coniophora puteana</i>		<i>Coriolus versicolor</i>			
Measure	Relative mass loss	Final moisture content	Relative mass loss	Final moisture content		
Replicate ID	[%]	[%]	[%]	[%]	[-]	[-]
1	13.7	77.7	13.9	64.2		
2	13.9	74.3	13.9	65.2		
3	13.9	74.5	13.9	73.6		
4	14.4	75.4	13.9	73.1		
5	13.6	75.2	13.7	75.5		
6	14.0	75.9	13.5	73.8		
7	14.8	67.8	14.0	73.2		
8	14.3	71.1	13.4	73.6		
9	14.2	71.8	13.9	78.7		
10	13.3	70.5	13.8	76.7		
11	19.5	63.1	14.1	67.1		
12	19.4	68.1	14.1	65.6		
13	14.2	73.2	13.6	73.7		
14	14.0	70.7	13.4	75.1		
15	21.5	55.1	13.9	60.9		
16	19.9	56.6	13.6	62.8		
17	18.0	63.3	13.8	71.5		
18	17.0	66.7	13.7	72.4		
19	14.5	68.4	13.9	73.9		
20	20.6	63.5	13.9	72.2		
21	14.0	73.1	12.9	77.4		
22	13.6	74.4	13.8	77.7		
23	14.0	69.4	13.9	74.3		
24	14.6	71.0	12.8	75.1		
25	16.8	56.9	13.7	78.6		

Material	<i>Quercus rubra</i> L.					
Test fungus	<i>Coniophora puteana</i>		<i>Coniophora puteana</i>			
Measure	Relative mass loss	Final moisture content	Relative mass loss	Final moisture content		
Replicate ID	[%]	[%]	[%]	[%]	[-]	[-]
26	14.2	55.3	13.8	78.1		
27	17.7	64.5	13.5	72.1		
28	16.3	63.2	13.4	73.6		
29	13.9	72.9	13.4	76.4		
30	13.6	72.8	13.8	78.5		

Assessment Reference

Material	<i>Pinus sylvestris</i> L.					
Test fungus	<i>Coniophora puteana</i>					
Measure	Relative mass loss	Final moisture content				
Replicate ID	[%]	[%]	[-]	[-]	[-]	[-]
1	29.5	89.7				
2	34.7	70.5				
3	26.3	63.4				
4	34.8	98.9				
5	46.9	76.9				
6	31.3	88.0				
7	27.0	64.4				
8	43.0	73.5				
9	26.1	92.0				
10	39.4	86.5				

Material	<i>Fagus sylvatica</i> L.					
Test fungus	<i>Coriolus versicolor</i>					
Measure	Relative mass loss	Relative mass loss				
Replicate ID	[%]	[%]	[-]	[-]	[-]	[-]
1	21.8	21.8				
2	21.8	21.8				
3	21.5	21.5				
4	21.5	21.5				
5	21.8	21.8				
6	21.7	21.7				
7	21.4	21.4				
8	21.8	21.8				
9	21.7	21.7				
10	21.9	21.9				