IRG/WP/DDB 14-00012

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2 Testing Methodology and Assessment

White cedar

Natural durable timber – Laboratory test results
IRG/WP Durability Database

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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

Submission Date	26.03.2014

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TESTED TIMBER

Trade name	White cedar
Botanical name	*Thuja occidentalis* L.
Origin	Canada Beauce Chaudière-Applaches
Number of replicates	40
Sampling (optional)	20 planks
Timber quality (optional)	Pale brown heartwood, straight grain, sparse knots, growth rings visible: 6-10 cm^{-1}, 90 % earlywood in growth rings

REFERENCE TIMBER

Trade name	Scots pine sapwood
Botanical name	*Pinus sylvestris* L.
Origin	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 mm³
Start of test	October 11 2013
Last evaluation	January 31 2014

RESULTS

Assessment

Material	***Thuja occidentalis* L.**					
Test fungus	***Coniophora puteana***		***Poria placenta***			
Measure	**Relative mass loss**	**Final moisture content**	**Relative mass loss**	**Final moisture content**		
Replicate ID	[%]	[%]	[%]	[%]	[-]	[-]
1	4.0	29.0	-1.7	91.1		
2	2.0	32.3	-0.6	93.3		
3	24.4	69.4	0.3	77.9		
4	0.6	30.5	1.8	57.0		
5	0.1	28.3	-2.2	87.4		
6	-0.1	30.1	-1.8	95.2		
7	-0.3	41.7	0.2	58.3		
8	-0.7	45.4	-0.4	65.3		
9	0.6	29.3	-2.2	88.2		
10	-0.1	28.1	3.8	32.5		
11	0.6	69.1	2.3	45.6		
12	2.6	79.6	3.2	41.1		
13	0.3	29.5	-1.8	76.4		
14	0.1	30.2	1.0	55.6		
15	0.3	26.4	-2.1	80.0		
16	0.0	32.0	3.4	31.6		
17	0.8	29.7	4.0	33.5		
18	0.5	30.3	-0.1	92.0		
19	1.8	32.6	1.2	91.1		
20	0.9	30.8	0.6	93.4		

Material	***Thuja occidentalis* L.**					
Test fungus	***Coniophora puteana***		***Poria placenta***			
Measure	**Relative mass loss**	**Final moisture content**	**Relative mass loss**	**Final moisture content**		
Replicate ID	[%]	[%]	[%]	[%]	[-]	[-]
21	0.3	28.9	-0.2	90.9		
22	0.2	31.2	-1.8	91.0		
23	0.7	32.6	-0.1	52.3		
24	1.0	32.0	3.0	38.1		
25	0.1	35.1	-0.2	88.3		
26	0.4	29.2	0.2	87.5		
27	0.4	31.7	-1.6	84.4		
28	0.3	29.7	2.3	40.8		
29	0.2	29.4	1.4	44.8		
30	0.5	28.3	2.8	35.1		
31	0.4	31.6	1.7	45.7		
32	0.7	31.0	0.7	57.9		
33	0.1	49.9	-0.3	73.2		
34	0.6	37.4	3.8	34.8		
35	0.2	30.7	3.0	35.5		
36	0.1	30.8	-0.2	52.4		
37	0.7	30.6	3.2	36.7		
38	0.8	35.7	3.6	33.5		
39	-0.5	42.1	-0.9	95.6		
40	0.2	29.9	-1.1	89.8		

Assessment Reference

Material	***Pinus sylvestris* L.**					
Test fungus	***Coniophora puteana***		***Poria placenta***			
Measure	**Relative mass loss**	**Final moisture content**	**Relative mass loss**	**Final moisture content**		
Replicate ID	[%]	[%]	[%]	[%]	[-]	[-]
1	32.1	56.9	31.6	95.8		
2	27.9	52.2	23.0	111.4		
3	28.7	73.0	27.9	70.0		
4	32.3	73.7	38.3	70.1		
5	33.9	65.0	35.1	69.5		
6	30.5	101.5	36.2	80.4		
7	34.6	76.5	38.9	68.6		
8	30.1	78.0	32.2	88.3		
9	36.0	78.5	38.2	79.3		
10	43.0	110.3	39.1	76.4		