IRG/WP/DDB 14-00057

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

Section 2 Testing Methodology and Assessment

Wax treated Scots pine

Water repellent treated timber – Field 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	22.04.2014

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TESTED TIMBER

Trade name	Wax treated Scots pine
Botanical name	*Pinus sylvestris* L.
Origin	Germany
Treatment process	Rüping process
Water repellent	Wax, dripping point 111 °C

Dimension and shape of specimens for impregnation	25 x 50 x 500 mm³
Sealing	none
Process parameters	45 min pre-pressure at 300 kPa, pressure for 120 min in pre-heated wax (20 K above melting point of wax) at 800 kPa, afterwards 45 min conditioning at same temperature without pressure
Number of replicates	42
Sampling	Exclusively sapwood

REFERENCE TIMBER

Trade name	Scots pine sapwood
Botanical name	*Pinus sylvestris* L.
Origin	Germany
Number of replicates	42

TEST METHODS

Non-standard method	Horizontal double layer (Rapp and Augusta 2004)
Reference	Rapp A.O., Augusta U. (2004) The full guideline for the “double layer test method” – A field test method for determining the durability of wood out of ground. Stockholm: The International Research Group on Wood Protection, IRG/WP/04-20190.
Specimen dimension and shape	25 x 50 x 500 mm³
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)	53°50’37,36’’N, 10°20’49,03’’E
Start of test	August 2005
Last evaluation	September 2010
Status of test	Terminated

RESULTS

Assessment

Material	**Wax treated Scots pine sapwood**					
Date	**19.07.2006**	**10.07.2007**	**08.10.2008**	**20.08.2009**	**21.09.2010**	
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
1	0	0	1	0	1	
2	0	0	0	0	0	
3	0	0	3	3	3	
4	0	0	1	1	1	
5	0	0	0	1	1	
6	0	0	0	3	3	
7	0	0	1	3	3	
8	0	0	1	1	1	
9	0	0	0	1	1	
10	0	1	2	3	3	
11	0	1	1	1	1	
12	0	0	0	0	0	
13	0	0	1	1	1	
14	0	0	1	1	1	
15	0	0	0	0	0	
16	0	0	0	0	0	
17	0	0	1	2	2	
18	0	0	1	1	1	
19	0	0	0	0	0	
20	0	0	0	0	0	
21	0	0	0	0	0	
22	0	0	0	2	2	
23	0	0	0	1	2	
24	0	0	0	1	2	
25	0	0	0	1	2	
26	0	0	0	1	1	
27	0	0	0	2	2	
28	0	0	0	1	2	
29	0	0	1	1	3	
30	0	0	0	1	3	

Material	**Wax treated Scots pine sapwood**					
Date	**19.07.2006**	**10.07.2007**	**08.10.2008**	**20.08.2009**	**21.09.2010**	
Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
31	0	0	0	1	2	
32	0	0	0	1	2	
33	0	0	0	0	0	
34	0	0	0	0	0	
35	0	0	0	0	0	
36	0	0	0	0	1	
37	0	0	0	0	0	
38	0	0	0	0	0	
39	0	0	0	0	0	
40	0	0	0	0	0	
41	0	0	0	0	0	
42	0	0	0	0	0	

Assessment Reference

Material	***Pinus sylvestris* L.**					
Date	**19.07.2006**	**10.07.2007**	**08.10.2008**	**20.08.2009**	**21.09.2010**	
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	0	0	
2	0	0	0	0	0	
3	0	0	1	2	2	
4	0	0	1	1	1	
5	0	0	1	2	3	
6	0	0	2	2	3	
7	0	0	2	2	2	
8	0	1	2	3	3	
9	0	0	1	3	3	
10	1	1	1	3	3	

Material	***Pinus sylvestris* L.**					
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Assessment	1	2	3	4	5	6
Replicate ID	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]	[0-4]
11	0	0	0	2	3	
12	0	0	0	1	3	
13	0	0	0	1	2	
14	0	0	1	2	3	
15	0	0	0	0	1	
16	0	0	1	1	1	
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18	0	1	1	1	1	
19	0	0	0	1	1	
20	0	0	1	0	2	
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22	0	0	0	1	3	
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24	1	1	1	2	4	
25	0	0	1	2	3	
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35	0	0	0	1	3	
36	0	0	1	0	1	
37	0	0	0	0	1	
38	0	0	0	0	1	
39	0	0	0	1	1	
40	0	1	1	1	3	
41	0	0	1	1	2	
42	0	0	0	1	1	

REFERENCES

Brischke C., Melcher E. (2014) Field performance of wax impregnated wood. Stockholm: The International Research Group on Wood Protection, IRG/WP/14-30649.