

Thermally-Modified Nørdic Pine

TEST RESULTS

Dresden, 2008-07-25
PI

Test report order no. 227017-1

Date of Order: 2007-12-17

Service: Test on the biological durability of Thermally Modified Pine

Contractor: Entwicklungs- und Prüflabor Holztechnologie GmbH (EPH)
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Person in charge: Dipl.-Biol. Katharina Plaschkies



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The test report includes 3 pages and an annex with 2 pages. Copies of selected parts of the report have to be permitted in writing by EPH. The test results are only referring to the tested materials.

1 Task

The Entwicklungs- und Prüflabor Holztechnologie GmbH (**EPH**) was ordered to test the durability of thermally modified pine against wood destroying basidiomycetes according to EN 15083-1

2 Test performance

Standard:	EN 15083-1
Delivery date of the samples:	2008-01-04
Kind of the tested material:	thermally modified pine (<i>Pinus sylvestris</i>) 9 timbers from 3 production batches average of the raw density after kiln drying: 465 kg/m ³
Reference wood species:	pine sapwood (<i>Pinus sylvestris</i>) average of the raw density after kiln drying: 513 kg/m ³
Test fungi:	<i>Coniophora puteana</i> BAM Ebw. 15: (mass loss on pine sapwood: 33 %) <i>Poria placenta</i> FPRL 280 (mass loss on pine sapwood: 20 %)
Size of the specimens:	50 mm x 25 mm x 15 mm
Number of replicates per fungus:	30
Ageing:	Leaching over 14 days according to EN 84 2008-01-29 to 2008-02-12
Sterilisation:	ionising irradiation \geq 25 kGy
Duration of biological exposure:	16 weeks
Inoculation date:	2008-01-29
Emplacement/removal date:	2008-02-21/2008-06-12

3 Results -Assessment of the specimens after the fungi test

Table 1: Median mass loss of the specimens

(10 single values per batch, single values see annex, tables A1 to A3)

	Average corrected mass loss [%]	
	<i>Coniophora puteana</i>	<i>Poria placenta</i>
Reference: Scotch Pine sap wood (<i>Pinus sylvestris</i>)		
	33.3	19.8
TMT Pine		
Batch I	0.6	12.4
Batch II	1.6	10.1
Batch III	1.1	12.1
Average of the median mass loss of all batches I bis III		
	1.1	11.5
Durability class²		
	1	3

Description of the durability class

Durability Class	Description	Mass loss [%]
1	very durable	≤ 5
2	durable	> 5 bis ≤ 10
3	moderately durable	> 10 bis ≤ 15
4	slightly durable	> 15 bis ≤ 30
5	no durable	> 30

4 Conclusion

The tested thermally modified pine reached the durability class 3 after test according to EN 15083-1.

Notice: Interpreting this test report and drawing practical conclusions from it requires a fundamental knowledge of wood preservation issues. Therefore, this test report by itself does not state an official approval of the tested material.

Dresden, 2008-07-25



 Dipl.-Biol. Katharina Plaschkies
 Person in charge

Table A1: Mass loss against *Coniophora puteana* BAM Ebw. 15 (Single values)

Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]	Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]
TMT Pine, batch I							
46	91	0,4	21,6	49	97	0,3	21,7
	92	0,3	24,3		98	0,9	21,2
47	93	0,6	20,3	50	99	1,7	21,1
	94	1,1	19,1		100	1,7	20,9
48	95	0,4	19,7				
	96	0,6	19,5				
TMT Pine, batch II							
51	101	1,1	19,6	54	107	2,7	20,6
	102	1,1	21,1		108	2,7	18,5
52	103	0,7	19,0	55	109	2,4	20,2
	104	0,7	18,6		110	2,4	22,6
53	105	1,6	18,4				
	106	1,6	18,1				
TMT Pine, batch III							
56	111	1,2	21,5	59	117	0,6	49,4
	112	1,5	21,0		118	0,6	22,2
57	113	1,2	21,0	60	119	1,3	19,9
	114	1,2	21,8		120	0,9	19,3
58	115	0,9	22,4				
	116	0,8	22,1				

*) correction value = - 0.3

Table A2: Mass loss against *Poria placenta* FPRL 820 (Single values)

Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]	Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]
TMT Pine, batch I							
120	239	4.3	20.1	123	245	15.0	41.2
	240	14.7	31.6		246	11.8	29.5
121	241	11.2	34.2	124	247	20.2	41.2
	242	12.9	31.2		248	7.7	25.1
122	243	12.0	39.2				
	244	14.0	40.9				
TMT Pine, batch II							
125	249	12.5	41.8	128	255	14.3	34.6
	250	6.4	21.7		256	12.5	63.6
126	251	7.8	23.1	129	257	6.5	21.4
	252	13.0	35.6		258	14.5	45.6
127	253	6.3	20.7				
	254	5.6	20.5				
TMT Pine, batch III							
130	259	11.0	37.0	133	265	8.9	29.1
	260	14.5	34.9		266	16.8	35.1
131	261	11.4	31.9	134	267	13.9	46.8
	262	11.7	31.5		268	16.0	33.8
132	263	12.6	30.5				
	264	5.8	26.4				

*) correction value = - 0.3

Table A3: Mass loss of pine sap wood gainst *Coniophora puteana* BAM Ebw. 15 (Single values)

Kolle flask No.	specimen No.	mass loss [%]	moisture [%]
V1	V1	43,4	66,7
	V2	23,7	50,7
V2	V3	26,6	52,1
	V4	35,6	53,1
V3	V5	37,8	63,0
	V6	32,4	56,5

Table A4: Mass loss of pine sap wood against *Poria placenta* FPRL 820 (Single values)

Kolle flask No.	specimen No.	mass loss [%]	moisture [%]
V16	V32	22.1	55.2
	V34	18.7	53.1
V18	V35	22.9	80.3
	V36	16.7	68.0
V19	V37	15.7	55.2
	V38	18.3	63.6
V20	V39	20.0	77.3
	V40	24.6	53.7