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Dresden, 2008-10-16  
PI

## Test report order no. 227017-2

**Date of Order:** 2007-12-17

**Service:** Test on the biological durability of Thermally Modified Ash

**Contractor:** Entwicklungs- und Prüflabor Holztechnologie GmbH (EPH)  
Zellescher Weg 24  
01217 Dresden, Germany

**Person in charge:** Dipl.-Biol. Katharina Plaschkies

Dr. Wolfram Scheiding  
Head of Laboratory Biological Testing

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 ash against wood destroying basidiomycetes according to EN 15083-1

## 2 Test performance

Standard:	EN 15083-1
Kind of the tested material:	thermally modified ash 9 timbers from 3 production batches average of the raw density after kiln drying: 517 kg/m <sup>3</sup>
Reference wood species:	beech ( <i>Fagus sylvatica</i> ) average of the raw density after kiln drying: 623 kg/m <sup>3</sup>
Test fungi:	<i>Coniophora puteana</i> BAM Ebw. 15: (mass loss on beech: 35 %) <i>Trametes versicolor</i> CTB 863A (mass loss on beech wood: 32 %)
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:** Mass loss of the specimens  
(Median from each 10 single ones per batch)  
single values see annex, tables A1 to A2

		<i>Coniophora puteana</i>	<i>Trametes versicolor</i>
Mass loss on reference Beech, average [%]		35.0	32.1
Mass loss on TMT Ash, median [%]	Batch I	0.2	0.6
	Batch II	0.1	0.7
	Batch III	0.3	0.6
	<b>Batches I bis III</b>	<b>0.2</b>	<b>0.6</b>
<b>Durability class<sup>2</sup></b>		<b>1</b>	<b>1</b>

<sup>2)</sup> 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 ash reached the durability class 1 after test according to EN 15083-1 after leaching according to EN 84.

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, 2008-10-16

.....*Kla. Plaschki*.....  
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 [%]
<b>TMT Ash batch I</b>							
31	61	0.3	24.5	34	67	0.2	16.9
	62	0.4	25.6		68	0.4	18.6
32	63	0.1	24.5	35	69	0.2	21.3
	64	0.0	22.8		70	0.1	21.8
33	65	0.3	18.8				
	66	0.3	17.8				
<b>TMT Ash batch II</b>							
36	71	0.3	21.4	39	77	0.3	20.2
	72	0.2	20.1		78	0.0	20.2
37	73	0.1	21.6	40	79	0.0	19.2
	74	0.1	22.4		80	0.0	18.4
38	75	0.2	21.3				
	76	0.1	18.5				
<b>TMT Ash batch III</b>							
41	81	0.4	30.1	44	87	0.4	24.4
	82	0.1	32.9		88	0.4	36.6
42	83	0.2	27.7	45	89	0.4	28.8
	84	0.3	29.5		90	0.4	31.2
43	85	0.2	27.1				
	86	0.2	24.3				

\*) correction value = - 0.3

**Table A2: Mass loss against *Trametes versicolor* CTB 863A (Single values)**

Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]	Kolle flask No.	specimen No.	corrected* mass loss [%]	moisture [%]
<b>TMT Ash. batch I</b>							
115	229	0.5	25.4	118	235	0.5	22.4
	230	0.7	25.3		236	0.3	22.2
116	231	0.8	24.2	119	237	0.4	20.4
	232	0.7	21.8		238	0.7	21.8
117	233	1.0	23.9				
	234	0.6	22.0				
<b>TMT Ash. batch II</b>							
105	209	0.6	31.5	108	215	0.8	27.8
	210	1.3	25.4		216	0.7	32.4
106	211	0.5	22.2	109	217	0.4	30.7
	212	0.2	24.5		218	0.4	33.9
107	213	0.7	36.6				
	214	0.7	26.2				
<b>TMT Ash. batch III</b>							
110	219	0.5	30.7	113	225	0.6	25.4
	220	0.5	26.8		226	0.5	32.5
111	221	0.8	29.8	114	227	0.1	26.1
	222	0.6	28.8		228	0.6	29.5
112	223	0.6	24.2				
	224	0.7	31.1				

\*) correction value = - 0.3

**Table A3: Virulence: mass loss of beech wood gainst *Coniophora puteana* BAM Ebw. 15 (Single values)**

Kolle flask No.	specimen No.	mass loss [%]	moisture [%]
V6	V11	37.6	58.3
	V12	40.5	58.6
V7	V13	40.2	59.7
	V14	37.0	56.3
V8	V15	34.1	60.9
	V16	36.3	61.7
V9	V18	30.3	63.4
	V19	30.8	72.6
V10	V20	28.9	66.7
Average		35.0	62.0

**Table A4: Virulence: mass loss of beech wood against *Trametes versicolor* CTB 863A (Single values)**

Kolle flask No.	specimen No.	mass loss [%]	moisture [%]
V1	V1	30.4	44.8
	V2	30.3	41.8
V2	V3	33.3	48.2
	V4	32.2	41.7
V3	V5	32.3	44.9
	V6	32.1	50.2
V4	V7	31.4	45.5
	V8	32.8	49.4
V5	V9	33.3	44.9
	V10	32.6	36.4
Average		32.1	41.1