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Dresden, 21.05.2019

Test Report Order no. 2219044/pos.2

Client: Zhejiang Xinhaiye Bamboo Technology Co., Ltd.
Xikou Industrial Zone, Longyou County,
Zhejiang, China

Date of order: 04/12/2018

Order position EN 113/ EN 350 (fungal resistance: basidiomycetes) - Laboratory test of durability against wood decay basidiomycete fungi according to EN 350 and EN 113 (specifications in CEN/TS 15083-1) with three test fungi after accelerated leaching according to EN 84

Contractor: Entwicklungs- und Prüflabor Holztechnologie GmbH
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The test report contains 3 pages and 3 pages in the appendix. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.

Task

Determination of the durability against wood decay basidiomycete fungi according to EN 350 and EN 113 (specifications in CEN/TS 15083-1 and ENV 12038) with three test fungi after accelerated leaching according to EN 84

Test material

Product name:  **DASSO** DassoXTR exterior strand woven bamboo decking
 Producer: Jiangxi Zhushang Bamboo Industry Co., Ltd.
 Gaofu modern Bamboo Industrial Park, Zixi County, Jiangxi Province
 Delivery date: 04/12/2018

Test performance

Test standard: Durability test according to CEN/TS 15083-1:2005; evaluation according to EN 350:2016
 Test fungi: *Coniophora puteana* DSM 3085 (BAM Ebw. 15)
Trametes (Coriolus) versicolor CTB 863A
Pleurotus ostreatus FPRL 40C (partly special test approach according to ENV 12038:2002)
 Specimens' dimensions: approx. (50 × 25 × 15) mm³
 Reference wood: beech (*Fagus sylvatica* L.)
 Replicates: 30 specimens of test material and 10 specimens of reference wood for each test fungus
 Ageing procedure: water leaching according to EN 84:1997 (13/03/2018-27/03/2018)
 Sterilization: hot steam
 Fungal attack period: 16 weeks (23/01/2019-15/05/2019)

Validity of test results

The test was valid, because the required values of mean mass losses with reference wood were exceeded by all three test fungi. Summarized validity data are given in table 1.

Table 1: Mass loss of reference wood

test fungus	mean dry mass loss [%]	
	determined value (10 replicates)	required minimum value according to CEN/TC 15083-1
<i>Coniophora puteana</i>	31.24	30.0
<i>Trametes (Coriolus) versicolor</i>	24.35	20.0
<i>Pleurotus ostreatus</i>	21.17	20.0

Results

The mean raw density of the test specimens after water leaching and kiln drying was (1185 ± 55) kg/m³. Summarized results of dry mass losses and assigned durability classes are given in table 2. Single values are given in the appendix, table A1-A3.

Table 1: Results of the durability test

test fungus	median dry mass loss (30 replicates)	durability classification (see scheme table 3)
<i>Coniophora puteana</i>	1.16 %	1
<i>Trametes (Coriolus) versicolor</i>	1.03 %	1
<i>Pleurotus ostreatus</i>	1.37 %	1

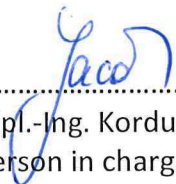
Table 2: Scheme for classification of durability (acc. to EN 350:2016, table 5)

Durability class	Description	Median mass loss
1	very durable	≤ 5 %
2	durable	> 5 % up to ≤ 10 %
3	moderately durable	> 10 % up to ≤ 15 %
4	slightly durable	> 15 % up to ≤ 30 %
5	not durable	> 30 %

Evaluation

Durability classification is based on the result of the fungus, which caused the highest median mass loss. The highest median dry mass loss was 1.37 %, achieved with the test fungus *P. ostreatus*. This assigns the test material to durability class 1 (very durable) according to EN 350 classification for wood decay basidiomycete fungi.

Dresden, 21.05.2019



 Dipl.-Ing. Kordula Jacobs
 Person in charge

Appendix: Single values of the durability test against basidiomycete fungi (Appendix to test report 2218044/pos.2)

Single values of the durability test against basidiomycete fungi (Appendix to test report 2218044/pos.2)

Table A1: Mass loss of the test product with *Coniophora puteana* (test period 23/01/2019-15/05/2019)

No. of specimen	Dry mass loss [%]	Wood moisture content after removal [%]
1	1.26	22.3
2	1.45	21.6
3	1.66	20.8
4	1.62	15.7
5	1.33	16.4
6	1.24	24.3
7	1.02	25.4
8	1.21	22.0
9	1.29	19.6
10	1.29	22.0
11	1.61	18.1
12	0.78	27.5
13	1.42	26.4
14	1.20	24.2
15	1.38	21.2
16	1.70	20.1
17	1.30	23.4
18	1.22	19.5
19	1.55	19.7
20	0.82	22.7
21	1.03	27.4
22	1.39	21.8
23	0.72	26.2
24	0.66	18.8
25	0.33	23.9
26	0.95	25.1
27	1.19	18.1
28	1.25	20.5
29	1.40	24.3
30	0.74	18.9
Mean values	1.20	21.9
Median values	1.25	21.9

Table A2: Mass loss of the test product with *Trametes versicolor* (test period 23/01/2019-15/05/2019)

No. of specimen	Dry mass loss [%]	Wood moisture content after removal [%]
31	1.28	19.8
32	0.92	23.9
33	1.04	22.1
34	0.67	20.3
35	1.30	14.2
36	1.01	27.0
37	0.85	17.6
38	0.76	21.8
39	1.03	20.8
40	1.17	25.6
41	1.06	23.6
42	0.98	21.3
43	1.10	20.2
44	0.87	18.0
45	1.07	24.3
46	1.13	22.9
47	1.20	24.8
48	0.94	25.2
49	1.38	16.5
50	1.01	26.3
51	0.92	23.4
52	0.78	22.7
53	1.41	13.9
54	0.79	23.9
55	0.86	22.1
56	1.29	21.1
57	1.28	21.3
58	1.86	17.8
59	1.05	23.3
60	0.00	22.1
Mean values	1.03	21.6
Median values	1.03	22.1

Table A3: Mass loss of the test product with *Pleurotus ostreatus* (test period 23/01/2019-15/05/2019)

No. of specimen	Dry mass loss [%]	Wood moisture content after removal [%]
61	1.79	24.7
62	1.68	21.5
63	1.59	24.3
64	1.34	21.5
65	0.37	24.0
66	0.67	25.8
67	1.35	22.6
68	1.50	23.9
69	1.16	25.3
70	1.01	23.8
71	1.69	22.3
72	1.77	22.3
73	0.57	24.2
74	1.44	28.1
75	1.87	21.8
76	1.20	21.2
77	1.89	13.7
78	1.58	23.9
79	0.74	21.9
80	1.97	21.1
81	1.83	29.0
82	0.78	23.1
83	1.41	28.0
84	1.39	15.7
85	0.67	20.7
86	1.27	23.8
87	1.32	32.1
88	1.50	23.2
89	2.00	18.4
90	1.87	25.6
Mean values	1.37	23.3
Median values	1.42	23.5