

Entwicklungs- und Prueflabor Holztechnologie GmbH · Zellescher Weg 24 · 01217 Dresden · Germany

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

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Dresden, 28 January, 2019

Test Report Order no. 2218044, Pos. 8

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

Date of order: 4 December, 2018

Order position: Resistance to indentation (Brinell hardness)

Contractor: EPH – Entwicklungs- und Prueflabor Holztechnologie GmbH
Laboratory Unit Material and Product Testing

Engineer in charge: Dipl.-Ing. J. Gecks



Dipl.-Ing. J. Gecks
Head of Laboratory Material and Product Testing

The test report contains 3 pages. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.

1 Terms of Reference

The Entwicklungs- und Prueflabor Holztechnologie GmbH (EPH) was ordered by Zhejiang Xinhaiye Bamboo Technology Co., Ltd. to carry out the test below:

- Determination of resistance to indentation (Brinell hardness) acc. to DIN EN 1534.

2 Test Material

The test material was sent to the Contractor by the Client and got to the laboratory on 4 December, 2018.

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, China

Cross-section: 145 mm x 20 mm

The test material was conditioned at a temperature of 23 °C and a relative humidity of 50 % after cutting of the test pieces.

3 Realisation of Test

The test for determination of resistance to indentation (Brinell hardness) was carried out according to DIN EN 1534 at 50 measuring points.

A buffed steel sphere ($D = 10$ mm, diameter) was impressed into the surface of test specimens with a force F of 1000 N within 15 seconds. After 25 seconds of load holding, the sphere was got off. After 3 minutes waiting, the diameter (d) of impression was measured with a measuring magnifier (0.1 mm scale gradations).

The calculation of the resistance of indentation was carried out according to the following formula:

$$HB = \frac{2 F}{g \pi D (D - \sqrt{D^2 - d^2})} [\text{N/mm}^2]$$

The test was carried out on 17 December, 2018.

4 Results

Table 1: Brinell hardness

No. of test specimen	Brinell hardness in N/mm ²
1	100.7
2	117.3
3	103.7
4	97.7
5	97.7
6	117.3
7	100.7
8	80.4
9	113.6
10	89.7
11	84.9
12	117.3
13	97.7
14	117.3
15	89.7
16	117.3
17	117.3
18	113.6
19	113.6
20	103.7
21	113.6
22	95.0
23	82.6
24	113.6
25	106.9
26	92.3
27	97.7
28	92.3
29	100.7
30	121.1
31	103.7
32	110.2
33	106.9
34	103.7
35	113.6
36	121.1
37	129.2
38	106.9
39	103.7
40	106.9
41	110.2
42	117.3
43	133.6
44	117.3
45	97.7
46	103.7
47	110.2
48	121.1
49	103.7
50	113.6
Mean value of Brinell hardness	106.8
Standard deviation	11.6
<i>Coefficient of variation (COV)</i>	11 %



Dipl.-Ing. J. Gecks
 engineer in charge