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CIBT-TCHN
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Braunschweig,
06.08.2009

Test report QA-2009-2061

Client: CIBT-TCHN
Hof ter Vleestdreef, 3, 1070 Brüssel


Object of the testing: Determination of water vapour transmission properties according to DIN EN ISO 12572:2001

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<p>EC Notified 0765</p>	<p>Testing, Supervising and Certifying Body authorised by the Principal Authority for Supervision of Construction</p>
 <p>DAP-PL-2071.00</p>	<p>Testing laboratory authorised by DAP Deutsches Akkreditierungssystem Prüfwesen GmbH according to DIN EN ISO/EC 17025. The authorisation covers the test methods listed in the certificate.</p>

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1. Task

The firm CIBT-TCHN, Hof ter Vleestdreef, 3, 1070 Brüssel, authorised Fraunhofer Institute for Wood Research, Wilhelm-Klauditz-Institute (WKI), 38108 Braunschweig, with the determination of water vapour transmission properties (dry cup and wet cup) on 2 specimens according to DIN EN ISO 12572:2001.

2. Material to be tested and data of receipt

The material to be tested was delivered at WKI on 17.07.2009

The sampling and marking were carried out without participation of WKI.

The material included 12 specimens (0,5m x 0,5m):

1. Ref. B 90705 Plattendicke 12,5mm
2. Ref. B 90706 Plattendicke 10,5mm

The material was used up.



3. Test methods

Determination of water vapour transmission properties according to DIN EN ISO 12572:2001

5 test pieces were taken from each sample (\varnothing 90 mm) and put in vessels in a vapour proof position in the direction of the vapour flow.

The vessels were provided with a desiccant, which allowed internal moisture amounting to 2 % to be set (dry cup method). All the vessels were kept in constant boundary conditions in the conditioning cabinet under 23°C / 50 % r.F. during the whole testing period and were weighted every 24 hours for the determination of water mass diffusing from the samples.

The vessel was provided with a saturated saline solution (Natriumcarbonat), which allowed internal moisture amounting to 92 % to be set (wet cup method). Conditioning and weighting procedures were the same as in the dry cup method. The weighting was continued until the mass change per time unit exhibited no further changes concerning the uncertainty of measurement (steady diffusion current).

4. Test results

Test results are compiled in the following tables 1-3.

Table 1a: Dry cup of sample: B 90705 (12,5mm)

Dry cup		Dry cup	
single value	average value	single value	average value
sd (m)	sd (m)	μ	μ
0,274	0,29	21,756	22,6
0,306		24,572	
0,308		24,437	
0,252		19,805	
0,289		22,401	

sd = water vapour diffusion-equivalent air-layer thickness
 μ = resistance number of water vapour diffusion

Table 1b: Wet cup of sample: B 90705 (12,5mm)

Wet cup		Wet cup	
single value	average value	single value	average value
sd (m)	sd (m)	μ	μ
0,090	0,10	7,194	8,2
0,099		7,881	
0,116		9,157	
0,100		7,883	
0,113		8,909	

sd = water vapour diffusion-equivalent air-layer thickness
 μ = resistance number of water vapour diffusion



Table 2a: Dry cup of sample: B 90706 (10,5mm)

Dry cup		Dry cup	
single value	average value	single value	average value
sd (m)	sd (m)	μ	μ
0,243	0,25	23,274	24,0
0,218		21,094	
0,265		25,898	
0,263		25,741	
0,249		24,210	

sd = water vapour diffusion-equivalent air-layer thickness
 μ = resistance number of water vapour diffusion

Table 2b: Wet cup of sample: B 90706 (10,5mm)

Wet cup		Wet cup	
single value	average value	single value	average value
sd (m)	sd (m)	μ	μ
0,088	0,09	8,516	8,4
0,075		7,347	
0,093		9,103	
0,092		8,954	
0,084		8,108	

sd = water vapour diffusion-equivalent air-layer thickness
 μ = resistance number of water vapour diffusion

Table 3: Summary of test results

Average value from 5 samples

	Dry Cup		Wet cup	
	sd (m)	μ	sd (m)	μ
B 90705	0,29	22,6	0,10	8,2
B 90706	0,25	24,0	0,09	8,4

Explanation:

sd = water vapour diffusion-equivalent air-layer thickness

Thickness of a steady air-layer having permeability resistance of water vapour diffusion, which is equal to that of a test piece.

μ = resistance number of water vapour diffusion

Quotient from water vapour diffusion coefficient of the air and the examined substance.

Notice: Resistance number of water vapour diffusion specifies how much more the resistance of a substance is in comparison with a steady air-layer of the equal thickness at the same temperature.

The testing results exclusively relate to the objects of the tests.

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