



HIGH PERFORMANCE WOOD COMPOSITES

CTBA
Centre Technique du Bois et de l'Ameublement
Bordeaux Office
BP 227
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POLE CONSTRUCTION

Mechanical Laboratory PHYSICAL & MECHANICAL TESTS

Test Report No. F-R / 68 / 02 / 132 / 151 / 1

Date: 14.01.2003

Client: Silvadec
2 rue des Charmes
44190 Clisson
Cedex France

Order Date: 21.01.2002

Test Report

Physical and mechanical tests on wood composite material
- To determine the swelling after immersion in cold water
- To determine flexural strength characteristics

This document consists of 4 pages of Test reports and 5 pages of appendix. 1-9. This document can only be reproduced in its entirety. It does not constitute a certificate of quality according to the law No 94-442 of 3.6.94. The samples are available for one month from the date of the test report. After this date they can not be returned

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Test Report

**Physical and mechanical tests
on wood composite material**

1. Description of Samples

Table 1: Characteristics of sample tested

Sample Reference	68/02/132/151
Manufacturer	Silvadec
Factory	Clisson
Sample taken by	The Manufacturer
Samples received	26/07/02 (batch 1) 09/09/02 (batch 2)
Nominal thickness (mm)	15.8
Length (mm)	50 (for the immersion test) 367 (for the flexural strength test)
Width (mm)	50

The samples were cut by the manufacturer

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2. Test Methods

2.1 To determine the swelling in thickness and the retention of water after immersion in water (in accordance with the normal methodology NF EN 317 from June 1993) for periods varying from 1 day to 16 weeks.

2.2 To determine the flexural strength resistance and the modulus of elasticity in accordance with the normal methodology NF EN 310 from June 1993.

2.2.1 In the initial state

2.2.2 After accelerated aging by the said cyclical test method in accordance with the normal methodology NF EN 321 from January 2002 for periods varying from 1 to 8 weeks.

2.2.3 After exposure to temperatures of - 25°C for 70 hours

2.2.4 After exposure to heat +60°C for 70 hours

2.2.5 After 6 weeks of exposure to RDA (weathering).

3. **Results:** The complete detailed results are given in appendix 1 and 2.

3.1 Immersion Tests

Results of Immersion Tests				
Conditions	% Swelling		% Water Recovery	
	Average	Standard deviation	Average	Standard deviation
1 Day	0.4	0.1	1.4	0.1
2 Days	0.7	0.1	1.4	0.1
4 Days	1.0	0.1	2.1	0.1
1 Week	1.1	0.1	2.7	0.1
2 Weeks	1.5	0.0	3.9	0.1
4 Weeks	1.9	0.1	5.4	0.1
8 Weeks	3.0	0.1	8.4	0.2
16 Weeks	4.7	0.3	10.9	0.1

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3.1.1 Flexural Strength Tests

Results of Flexural Strength Tests							
Conditions		Flexural Strength Resistance		Modulus in MPa		Breaking Force in N.mm	
		Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation
Initial state	Longitudinal sense	23.6	0.2	4525	95	4521	222
	Transversal sense	24.0	0.3	4678	50	4336	407
V313 cycles	1 week	23.2	0.4	4183	73	4769	300
Longitudinal sense	2 weeks	23.0	0.1	4138	94	4715	151
	4 weeks	23.0	0.2	3975	163	4902	237
	8 weeks	24.6	0.3	4471	130	4849	158
Freezing -25°C Longitudinal sense	70 hours	31.6	0.3	6637	142	3573	304
Heat +60°C Longitudinal sense	70 hours	15.9	0.2	2458	73	5711	432
RDA Aging Longitudinal sense	6 weeks	24.4	0.4	4684	238	4636	394

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