



HIGH PERFORMANCE WOOD COMPOSITES

CTBA, Centre Technique du Bois et de l'Ameublement

Material: Strandex Wood Composite
(Forexia® made by Silvadec)

Tests	Values
Breaking constraint Norm EN310 Nominal After accelerated aging (RDA) After exposure to cold (-25°C) After exposure to heat (+60°C)	4521 N.mm 4636 N.mm 3573 N.mm 5711 N.mm
Modulus of Elasticity EN310	4525 Mpa (resistance equivalent to the best particle boards, superior rigidity and isotropy in the 2 directions of the plane)
Compressive strength ASTM D 143	17 Mpa
Tension resistance ASTM D 638	8.3 Mpa
Moisture resistance EN317 - 24 hours Swelling Resumption of mass	0.4% (10% for a panel CTB-H) 1.4%
Density	1217 kg/m ³
Resistance to perforation (Brinell hardness)	59.6 Mpa (material very resistant)
Resistance to Termites	No attack in the initial state and also over time (RDA and EN321)
Resistance to Fungus N34/EN318	Material very durable, the aging tests (RDA and EN321) do not affect the durability
Dimensional variations under variations of relative humidity 35%-65% -85% (EN318)	
Length mm/m 65 to 30% in the length	-1.34
Length mm/m 65 to 85% in the length	1.03
Thickness in 65% to 30%	-0.18
Thickness in 65 to 85%	0.32
Dimensional variations under variations of temperature ASTM D 696	2.88*10 ⁻⁵ mm/m/°K
Mycology Tests N34 (adapted)/EN321	Class 1 (very Durable)

The following test reports from the CTBA are available upon request

F-R/68/02/132/151/1

F-R/68/02/132/151/2

PC/66/138/02Z/a/1

PC/66/138/02Z/b/2

PC.37.269-MFD/FD - N°2002.3701211

CTBA
Silvadec France
PC.37.269 – MD/FD/2003.3700125
Bordeaux, 3 June 2003
Confidential Report

6 OVERALL CONCLUSION OF THE REPORTS F-R 68/02/132/151/1, F-R 68/02/132/151/2 and PC/66/138/02Z/a/1

STRANDEX material has excellent merits concerning its performance in outside conditions and its resistance to termites in all conditions. For a complete understanding of the material, resistance to biological agents (insects and fungus) needs to be confirmed (tests are in the course of being completed).

If the mechanical tests undertaken give an indication of the flexural strength performance, they are above all intended to give a base for control of the manufacturing process.

The high density of the material leads us to believe there is good resistance to screws and other inserts (as long as they are inserted appropriately.)

For structural use, better suited tests, using test tubes of a bigger size (NF EN 789) even on models of a normal size (in accordance with NF EN 1195 for use with planks) would be necessary in order to evaluate performance with instantaneous loads.

However, for this type of use, the reaction of STRANDEX material to temperature (a slight embrittlement due to the cold but moreover an important loss of rigidity and resistance due to heat) must be taken into account.

Finally if use under load over a long period is envisaged, a specific evaluation of creep in accordance with XP ENV 1156 will be required. Indeed, for a wood composite material the experiment demonstrates that the finer its particles the greater the creep. Under these conditions and in the absence of more knowledge, STRANDEX must for the moment be excluded from this use

Marcel DENANCÉ



CTBA
Centre Technique du Bois et de l'Ameublement
Bordeaux Office
BP 227
33028 Bordeaux Cedex

Silvadec
2 rue des Charmes
44 190 Clisson

Bordeaux 17 March 2003

Dear Mr Crez,

According to the classification given by the European Norm NF EN 350-1, only wood submitted for testing in accordance with NF EN 118 which has a reference of 0 or 1 is considered as durable (hard).

By extrapolating this interpretation to composite wood, we can consider that the Strandex sample is termite resistant, as the termites die during our tests because they are unable to feed themselves.

Yours sincerely,

Ivan Paulmier
Technical Manager
Biology Laboratory

CTBA

SILVADEC

Bordeaux 04/07/03

Test Report No. PC/66/138/02Z/b/2

Mycology Test adapted from N34 on Wood Composite

Advice and Interpretations

Whatever fungus the wood composite material is exposed to, it is extremely durable (values of homogeneous median mass losses lower than 5%).

Moreover aging tests (RDA and EN 321) do not affect the durability of the material with respect to the basidiomycetes fungus.

Finally, this material has a hydrophobic capacity (humidity results in appendices 2, 3 and 4), which limits the development of fungi.

Mycology Laboratory
Technician

Nathalie MORNET

Mycology Laboratory
Technical Manager

Isabelle LE BAYON

This report can only be reproduced in its entirety.