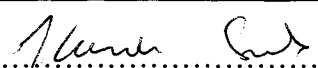
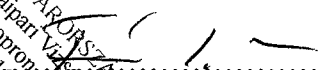


EFVL	UNIVERSITY OF WEST-HUNGARY FORESTRY AND WOOD TESTING LABORATORY <i>Industrial Basic Material and Product Laboratory (C)</i> Accreditation number: NAT-1-1521/2007	INSPECTION REPORT	Number of report: C-J-2010/08-1 Page/side: 1/4
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UNIVERSITY OF WEST-HUNGARY FORESTRY AND WOOD TESTING LABORATORY <i>Director of Laboratory: Dr. VARGA Mihály</i>
<i>Register number of Hungarian Accreditation Board: NAT-1-1521/2007</i>
H-9400 Sopron, Bajcsy-Zs. E. Str. 4. (PO.: 132) Phone: +36 (99) 518-100 Fax: +36 (99) 518-103

<i>Inspection number:</i>	C-J-2010/08-1
<i>Principal:</i>	SZOLVEGY Ltd.
<i>Number and Date of commission:</i>	2010/8 October 25. 2010.
<i>Number of inspection data sheet:</i>	C-V-2010/08-1
<i>Naming of inspection:</i>	Testing according to MSZ EN 204 of D3 glue
<i>Examiner person(s):</i>	Dr. FEHÉR Sándor KOMÁN Szabolcs
<i>Effect of Inspection results:</i>	The results can be applied only for the examined samples
<i>Date of taking the report:</i>	Sopron, December 22. 2010.

Only the whole report must be copied

<i>Principal:</i>	SZOLVEGY Ltd. H-5000 Szolnok, Téglagyári Str. 8.	
<i>Number and Date of commission:</i>	2010/8 October 25. 2010.	
<i>Naming of inspection:</i>	Testing according to MSZ EN 204 of D3 glue	
<i>Applied standard:</i>	MSZ EN 204:2001	
<i>Sampling method:</i>	Random sampling	
<i>Description and identification of examined sample:</i>	Technobond D3 Glue	
<i>Wood species:</i>	Beech (<i>Fagus sylvatica</i>)	
<i>Average moisture of examined sample [%]:</i>	12%	
<i>Place of inspection:</i>	University of West-Hungary, Forestry and Wood Testing Laboratory H-9400 Sopron, Bajcsy Zs Str. 4.	
<i>Date of inspection:</i>	October 30 – December 22. 2010.	
<i>Conditions of inspection:</i>	<i>Temperature:</i> 20°C <i>Humidity:</i>65%	
<i>Examiner person(s):</i>	Dr. FEHÉR Sándor KOMÁN Szabolcs	
<i>Appendices:</i>	<i>Identification number:</i>	<i>Page number:</i> 4
<i>Examining tools:</i> 1. Instron 4208 2. Moisture measure (Gann Hydromette HT 95) 3. Vernier caliper (Helios)	<i>Comment:</i>	
..... Examiner EFVL C <i>Be present:</i>	P. H.	<div style="text-align: right;">  KOMÁN Szabolcs Examiner EFVL C  Dr. FEHÉR Sándor Assigned examiner EFVL C </div> <div style="text-align: center; font-size: small;"> NYUGAT-MAGYARORSZÁGI Erdészeti és Faipari Vállalatok H-9400 Sopron, Vitézság közterület Adószám: 15329781-2-08 Bank: 10033001-00282864-00000000 4. </div>

1. History

The Forestry and Wood Testing Laboratory of University of West-Hungary (NyME EFVL) was charged by SZOLVEGY Ltd. (Principal) (H-5000 Szolnok, Téglagyári Str. 8.), with the testing of the D3 glue, on the grounds of requirements of MSZ EN 204:2001 standard.

2. Testing material and methods

The SZOLVEGY Ltd. ensured the testing material for the Testing Laboratory. The code of sample:

Technobond D3

The quality of adhesive may determine detachedly with the bond strength. The testes came to pass on the grounds of currently available standards, MSZ EN 204 and MSZ EN 205. To testing send documentation of wood glue shows the Table 1.

Table 1 The tested glue

Code	Producer	Name of product	Manufacturing time	Packing
D3	SZOLVEGY Ltd	Technobond D3	September 15. 2010.	0,75kg

The samples prepared by the technical documentation of wood glue:

Amount of glue: 180g/m²

Pressure: 0,8 N/mm²

Pressing time: 2 hours

Glue temperature: 20°C

The test of bond strength: 10-10 specimens by measure series.

3. Results and evaluation

The bond strength of D3 glues have to be used with three different condition program on the ground of standardized testing (Table 2).

Table 2 The conditioning program

Serial number	Conditioning	Conditioning time	Measure	Adhesive strength
1.	Standard atmosphere	7 days	1. measure	≥ 10 MPa
2.	Standard atmosphere	7 days		
	Dipping in cold water	4 days	2. measure	≥ 2 MPa
3.	Standard atmosphere	7 days		
	Dipping in cold water	4 days		
	Standard atmosphere	7 days	3. measure	≥ 8 MPa

After the each measure period the quality of glue is suitable, if the adhesive strength is bigger or equal to minimal strength value of Table 2. If these measured values are lower than minimal strength, the quality of glue is not suitable.

The results of testing bond strength is according to requirement of standard after each three conditioning period (Table 3). The specimens broke out the adhesive flat in wood.

Table 3 The results of bond strength testing MPa)

Code Number	Technobond D3		
	1. period	2. period	3. period
1.	11,48	2,23	11,13
2.	14,06	2,07	9,96
3.	11,44	3,06	10,52
4.	10,49	2,46	11,18
5.	13,71	2,19	9,52
6.	10,71	3,03	10,51
7.	12,21	2,07	11,12
8.	10,31	2,37	14,12
9.	10,89	2,49	11,34
10.	11,69	2,39	10,98
Min.	10,31	2,07	9,52
Max.	14,06	3,06	14,12
Average	11,70	2,44	11,04
Std. dev.	1,29	0,35	1,23
Var %	11,04	14,50	11,15

The average result of strength testing after the first period is more than 11MPa, where the limit value is 10MPa. At the second period the testing gave results are higher than minimal limit (2MPa) too, the average bond strength is 2,44MPa. The pull results of follower third period are higher than the requirement limit (8MPa) too. The average bond strength is 11,04MPa.

4. Summary

To summarize the results of testing can declare unambiguously, that the bond strength of testing glue is higher than minimal value of standard by every one testing period. **On the ground of results the adhesive Technobond D3 have to classify in durability class D3 according to MSZ EN 204.**

Hungary, Sopron, December 22. 2010.

NYUGAT-MAGYARORSZÁGI ÉRDEZETI ÉS FAIPARI VIZSGÁLÓ ÉS KUTATÓ INTÉZET
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