TECHNICAL REPORT

Maxwell Road, Stevenage,
Hertfordshire SG1 2EW, England
Telephone +44 (0) 1438 777700
Facsimilie +44 (0) 1438 777800
e-mail: info@fira.co.uk
website: www.fira.co.uk

Nippon Gohsei UK Ltd

Soarnol
Saltend
Hull
HU12 8DS

Our Ref: TMCMF28161A
Your Ref:
Date: 1st July 2009 Amendment*
Delivery Date 15th May 2009
Test Dates: 15th May – 19th June 2009

For the attention of Mr Greg White

SAMPLES FOR TEST

Woodworking PVAc adhesive reference: OKS-6202
Sample N°- 09031601
Commercial description: Gohsefimer WR-14

TEST REQUIREMENTS

BSEN 205 2003: Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints.

BSEN 204 2001: Classification of thermoplastic wood adhesives for non-structural applications'. Durability Class D3 - Sequences 1, 3 and 4

PERFORMANCE SUMMARY

Durability Class D3 – Sequence 1: Dry	PASS 15.6 N/mm²
Durability Class D3 – Sequence 3: Wet	PASS 3.4 N/mm²
Durability Class D3 – Sequence 4: Wet /Dry	PASS 15.0 N/mm²

*Amendment – additional commercial product description details

UKAS TESTING
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FIRA International Limited
A member of the TTL Chiltern Group of companies

Registered Office:
Chiltern House, Stocking Lane,
Hughenden Valley, High Wycombe,
Buckinghamshire HP14 4ND, UK.

Registered No 3181481 England

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REPORT DETAILS: BSEN 205:2003 Clause 9

Adhesive reference	OKS-6202
Type	1 part polyvinyl acetate PVAc adhesive.
Origin	Nippon Gohsei UK Ltd
Batch number	Not supplied
Durability class	D3
Wood species	Fagus sylvatica L (European beech)
Moisture content.	Nominal 12 % achieved by conditioning at 65% rh at 20°C.
Bonding procedure	Panel surfaces sanded with P 100 grit abrasive paper prior to adhesive application. Adhesive applied to the two mating surfaces of standard beech panels. Glue spread approximately 250-300 g/m². The test piece length was 100 mm (not 150 mm as stated in EN204) - this does not affect the area of test bond or failing force. The coated surfaces were brought together and the assembly placed in a press at ambient temperature and pressure gradually increased within ≤ 3 minutes to approximately 0.7 MN/sq m (100 psi). The test panels remained under pressure for a period of approximately 24 hours.
Time between bonding and cutting of test pieces	≥5 days
Time between bonding and strength testing.	≥7 days
Glue line	Thin adhesive glue line - nominal 0.1 mm
Test piece loading	The test pieces were inserted into the wedge-type jaws of an Instron Universal Testing Machine, type 1195. The distance between the jaws was approximately 50 mm. The test pieces were tested to failure, using a machine crosshead speed of 50 mm/min.
Number of test pieces	A minimum of 10 test pieces per conditioning sequence are required but additional test pieces may be included. Poor quality test pieces or anomalous low results may be excluded and the 10 highest results selected from the sample lot.
Test Date	15th May - 19th June 2009

REFERENCE STANDARDS

BS EN 205 2003 'Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints.

BSEN 204 2001 Classification of thermoplastic wood adhesives for non-structural applications.

CONDITIONING SEQUENCE & MINIMUM VALUES (From Table 2 BSEN 204:2001)

CONDITIONING SEQUENCE & STRENGTH N/mm²					DURATION AND CONDITIONING TREATMENT
Serial number	D1	D2	D3	D4	
1	≥10	≥10	≥10	≥10	7 days standard atmosphere, 65%rh,20°C
2		≥8			7 days standard atmosphere, 65%rh,20°C 3h in water at 20°C, 7 days in standard atmosphere 65%rh,20°C
3			≥2	≥4	7 days standard atmosphere, 65%rh,20°C 4 days in water at 20°C
4			≥8		7 days standard atmosphere, 65%rh,20°C 4 days in water at 20°C, 7 days in standard atmosphere 65%rh,20°C
5				≥4	7 days standard atmosphere,65%rh,20°C 6 hours in boiling water, 2 hours in water at 20°C

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RESULTS

The individual, mean failing force, standard deviation and coefficient of variation and mean nominal strength values were calculated for each conditioning sequence and tabulated below.

TEST PIECE	Adhesive reference: OKS-6202					
	Sequence 1 Dry		Sequence 3 Wet		Sequence 4 Wet /Dry	
	Failing Force (N)	Estimated wood fail %	Failing Force (N)	Estimated wood fail %	Failing Force (N)	Estimated wood fail %
1	3150	100% - wood failure	625	0% in wood primarily adhesive failure	3550	Variable partial wood and adhesive failure. Approx 50% but some test pieces full wood failure
2	2875		780		3100	
3	3775		770		2900	
4	3225		635		3200	
5	3650		785		2325	
6	3375		590		2900	
7	2850		660		2700	
8	2800		735		2750	
9	2750		760		3550	
10	2825		490		2950	
Mean Failing Force (N)	3128		683		2993	
Standard Deviation (N)	372.0		98.9		377.9	
Coefficient of Variation (%)	11.89		14.49		12.63	
Mean Shear Strength (N/mm²)	15.6		3.4		15.0	
Requirement BSEN 204 D3 N/mm²	≥10		≥ 2		≥8	
Status	PASS		PASS		PASS	

REPORT BY: V TAYLOR

V. Taylor

APPROVED BY: V TAYLOR (SECTION HEAD - MATERIALS TECHNOLOGY)