

# SUMMARY OF THE TESTS RESULTS

No. 0004/14/1801/S



**LIGNOTESTING, a.s.**

Technická 5  
821 04 Bratislava

Manufacturer: 2 MAX, s.r.o.  
Luční 432, 796 04 Prostějov, Czech republic

Manufacturing plant: 2 MAX, s.r.o.  
798 03 Mostkovice 529, Czech republic

Customer: VIS Export – Import s. r. o.  
P. Jilemnického 17, 960 01 Zvolen, Slovak republic

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Product: Wood-based panels  
Type: **Solid wood panels (SWP/1 NS)**

Dimensions (t x w x l) (14-51 x max. 1 050 x max. 6 000) mm

#### Technical Specification:

EN 13986: 2004  
(STN EN 13986: 2005)  
Wood-based panels for use in construction.  
Characteristics, evaluation of conformity and marking

Product values and classes:			Classification standards:
	Bending strength	EN 13986, Annex A (according to EN 13353 +A1, SWP/1 NS)	
		<b>31,50 N/mm<sup>2</sup></b>	EN 13353: 2008 + A1:2011
	Modulus of elasticity (EN 310)	EN 13986, Annex A (according to EN 13353 +A1, SWP/1 NS)	(STN EN 13353 +A1: 2011) Solid wood panels (SWP). Requirements.
		<b>8 837 N/mm<sup>2</sup></b>	
	Reaction to fire	CWFT, according to EN 13986, Table 8	EN 13017-2: 2000 (STN EN 13017-2: 2002) Solid wood panels. Classification by surface appearance. Part 2: Hardwood.
		<b>D-s2, d0</b>	
	Formaldehyde release	according to EN 13986, Annex B	
		<b>Class E1</b>	EN 335-2: 2006 Durability of wood and wood-based products. Definition of use classes. Part 2: Application to solid wood
	Content of pentachlorophenol	according to EN 13986	
		<b>&lt; 5 ppm</b>	
	Durability - Bonding strength	EN 13986, Art.. 5.4 (according to EN 13353 +A1, SWP/1 NS)	
		<b>6,90 N/mm<sup>2</sup></b>	
	Biological durability	according to EN 335-2	
		<b>Use class 1</b>	

#### Purpose of tests

The assesment of the performance the product on the basis application No. O 004/14of 24 November 2014 as per contract No. Z-20/045/14

Bratislava, 12 December 2014

Prepared by:

Authorized by:

Mr. Ignac Somorovsky, MSc.  
Product Specialist

Mr. Tomas Trebula, MSc., PhD.  
Head of the Testing Laboratory

The assesment of the performance the product -type shall be repeated, if the construction product was modified and this modification can influence to its characteristics and cause its non-conformity with the technical specifications, mainly if major change took place in production technology, or technology equipment was replaced or used raw materials/semi-manufactured goods were changed in manufacturing of the construction product.

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**LIGNOTESTING, a.s.**  
Technická 5  
821 04 Bratislava  
Slovak Republic

Approved body No. SK02  
Notified body No. 1478  
Testing laboratory  
accredited by SNAS  
Reg.No. 104/S-331

Entry in Commercial Register of the District  
Court Bratislava I, Section Sa, Insert  
number 1737/B  
Registered number: 35745924  
VAT registration number: SK2020220180

Tel.: ++421/2/43632957  
Fax: ++421/2/43632958  
e-mail: lti@lignotesting.sk  
http://www.lignotesting.sk

Tatra banka, a.s.  
Account number: 2621010841/1100  
BIC/Swift code: TATR SK BX  
IBAN: SK64 1100 0000 0026 2101 0841

## 1. Based on

1. Test report No. 800/20/0111/14, 12 December 2014, LIGNOTESTING, a.s., Technická 5, SK-821 04 Bratislava, Slovak Republic
2. The assesment of for performance of the product - type No. O 004/14, 24 November 2014
3. Agreement No. Z-20/045/14

## 2. Product

### 2.1 Dimensions

Overall dimensions (14 - 51 x max 1 050 x max 6 000) mm  
(thickness x width x lenght)

### 2.2 Technical characterization of the product

Solid wood panel  
(SWP/1 non-structural)

single-layer, manufactured of hard wood slats (oak - 90%, beech, ash, cherry, nut, maple) a width 40-45 mm. Continuous bonding in length by mini clic 10/11 mm and accros the width of the butt or with edge panels with solid staves. The slats glued together with use of glue on the base of PVAC the durability of the D4 according to EN 204 type GXL4 produced produced by H. B. Fuller Austria GmbH, Kaplanstrasse 30, A-4600 Wels, Austria.

Panels are manufactured with dimensions: thickness (14 - 51) mm, width max 1 050 mm, length max 6 000 mm in the sense of EN 13353 +A1. Panels are according to EN 13017-2 sorted into visual classes A/B, B/B, B/C and C/D by upside and underside appearances. The moisture content shall be (8 ± 2) % at the time of delivery.

Solid wood panels (SWP/1) are intended for use in dry conditions as non-structural elements in internal applications.

## 3. Tests results

Characteristic	Test method	Technical specification / criteria	Results	Evaluation
Bending strength	EN 310	<b>EN 13986, Annex A, Table A.1</b> Technical classes: SWP/1, SWP/2, SWP/3 EN 13353+A1, Article 4.3.2	EN 13986, Annex A, Table A.1 SWP/1 non structural, i.e. for use in dry conditions as non-structural elements The lower 5-percentile: 31,50 N/mm <sup>2</sup>	<b>SWP/1 NS (non- structural)</b>
Modulus of elasticity in bending	EN 310	<b>EN 13986, Annex A, Table A.1</b> Technical classes: SWP/1, SWP/2, SWP/3 EN 13353 +A1, Article 4.3.2	EN 13986, Annex A, Table A.1 SWP/1 non structural, i.e. for use in dry conditions as non-structural elements The lower 5-percentile: 8 837 N/mm <sup>2</sup>	<b>SWP/1 NS (non- structural)</b>
Bonding quality	EN 13354	<b>EN 13986, Annex A, Table A.1</b> Technical classes: SWP/1, SWP/2, SWP/3 EN 13353 +A1, Article 4.3.2 The lower 5-percentile: ≥ 2,5 N/mm <sup>2</sup>  The average cohesive wood failure percentage value: > 40 %	The lower 5-percentile of the shear strength: 6,90 N/mm <sup>2</sup>  The average cohesive wood failure percentage value: 92 %	<b>SWP/1 NS (non- structural)</b>
Reaction to fire	EN 13986, Table 8	<b>EN 13986, Table 8</b> Classes of reaction to fire (according to EN 13501-1)  <u>Solid wood panel</u> (EN 13353+A1, minimum density 400 kg/m <sup>3</sup> , minimum thickness 12 mm) Class D-s2, d0	EN 13986, Table 8 (CWFT) Class of reaction to fire for solid wood panel (EN 13353+A1, min. density 400 kg/m <sup>3</sup> , minimum thickness 12 mm)  Class D-s2, d0	<b>Class D-s2, d0</b>

Characteristic	Test method	Technical specification / criteria	Results	Evaluation
<b>Emission of formaldehyde</b>	EN 13986, Annex B	<b>EN 13986, Annex B</b> Class E1 $\leq 0,124 \text{ mg/m}^3$	EN 13986, Annex B (manufacturer didn't use materials containing formaldehyde during manufacturing) Class E1	<b>Class E1</b>
<b>Content of pentachlorophenol</b>	CEN/TR 14823	EN 13986, Article 5.18  < 5 ppm	(manufacturer didn't use materials containing pentachlorophenol during manufacturing) < 5 ppm	<b>&lt; 5 ppm</b>
<b>Biological durability</b>	EN 335-2	EN 13986, Article 5.17 EN 335-2 Use classes 1,2,3,4,5	EN 335-2 Use class 1 i. e., the risk of attack by surface moulds or by staining or wood-destroying fungi is insignificant (that is the wood shall have a moisture content of maximum 20 %).	<b>Use class 1</b>

#### List of Annexes

1 Test report No. 800/20/0111/14, 12 December 2014, LIGNOTESTING, a.s., Technická 5, SK-821 04 Bratislava

#### Distribution List

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