Reference: 1806222-01-02-03
Order sheet: 22001110

TEST REPORT Nº 221.I.1807.470.EN.01

ON THE REQUEST OF:

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CONCERNING:

PRODUCT:	**OPEN AND CLOSE PORE FLOORING**
TESTING:	**SEVERAL**

DATE OF THE RECEPTION OF SAMPLES:	**26/06/2018**
STARTING DATE:	**27/06/2018**
FINISHING DATE:	**04/07/2018**

Document digitally signed by legal electronic signature

THIS REPORT CONSISTS OF 6 PAGES NUMBERED ACCORDINGLY.

The test samples will remain at AIDIMME over a period of three months from the date of issuing this report. That period having expired, it will be destroyed, so any claim on it must be made within these limits.

1. DESCRIPTION AND IDENTIFICATION OF THE TESTED OBJECT. EXAMINATION PRIOR TO TESTING.

Wood veneer floor covering elements, identified by the customer as:

- **OPENED PORE PROCESS**
Sample is referenced by AIDIMME as 1806222-01.

- **CLOSED PORE PROCESS / A**
Sample is referenced by AIDIMME as 1806222-02.

- **CLOSED PORE PROCESS / B**
Sample is referenced by AIDIMME as 1806222-03.

2. ORIGIN OF THE SAMPLE

Samples supplied by the client.

3. TEST REQUIRED

- Wear resistance using the falling sand method (in all three types).
- Impact resistance (only in closed pore A)
- Brinell hardness (only in closed pore A)

4. ADAPTATION OF THE TEST, METHOD OR PROCEDURE TO STANDARD

The test methods are carried out according to the standards:

Wear resistance	UNE EN 14354:2017 (annex D)
Brinell hardness	UNE EN 1534 :2011
Impact resistance	UNE EN 14354 :2017 (annex C)

5. DESCRIPTION OF THE TEST METHOD

WEAR RESISTANCE USING THE FALLING SAND METHOD
The 100mm x 100mm specimens drilled by a central hole of 6mm diameter, are placed in a holder of Taber abrasion machine which plane rotates at a frequency of 60 revolutions per minute.

This equipment measures the resistance to wear by a 1 000 grams loaded cylindrical wheel pair fitted with S39 abrasive (leather strips), connected as the wheels turn, to a grit feeder device with a flow of (21 $\pm$ 2) g/min.

The abrasion resistance or resistance to use is the number of cycles at which the support is reached continuously in 12 of 16 sectors and at least in one sector per quadrant of the specimen tested.

The resistance to wear is the average of the wear resistance values obtained, rounded to the nearest 100 revolutions.

The wear requirements of floor covering according to the use intensity are indicated at EN 14354:2017" Wood-based panels - Wood veneer floor coverings" as:

INTENSITY OF USE	**DOMESTIC**			**COMMERCIAL**		
	Moderate	General	Heavy	Moderate	General	Heavy
Wear resistance cycles number (thickness face ≤ 1mm)	1 000 cycles		2 000 cycles		4 000 cycles	6 000 cycles

RESISTANCE TO IDENTATION. BRINELL HARDNESS.

A steel ball of 10mm diameter is placed on the surface sample as a charge. Then a force is applied that increases progressively so that the nominal value of 1kN is reached in a time of 15 seconds. Load force is maintained at this value for 25 seconds.

Two diameters of the residual footprint are measured, perpendicular to each other, one in the direction of the fiber, d1, and another perpendicular to it, d2.

The Brinell hardness number is calculated by dividing the load applied by the surface area of the indentation, using:

$$HB = \frac{2 \cdot F}{g\pi D\left[D - \left(D^2 - d^2\right)^{\frac{1}{2}}\right]}$$

HB Brinell hardness, in N/mm^2
g acceleration of gravity in m/s^2;
π number pi (≈3,14);
F force in newtons;
D Ball diameter, in millimeters
d impression diameter, in millimeters

To express the Brinell hardness in Newton per square millimeter, g is deleted from the formula.

Note: Hardness is expressed in psi, on the request of customer.

The hardness requirements of floor covering according to the use intensity are indicated at EN 14354:2017" Wood-based panels - Wood veneer floor coverings" as:

INTENSITY OF USE	**DOMESTIC**			**COMMERCIAL**		
	Moderate	General	Heavy	Moderate	General	Heavy
Resistance to identation	≥ 10 N/mm^2	≥ 20 N/mm^2		≥ 30 N/mm^2	≥ 40 N/mm^2	

IMPACT RESISTANCE

The test specimen is placed in a clamping frame with polyethylene foam between the specimen and the plate of a free-fall tester. The specimen is covered with a sheet of carbon paper with its coated face in contact and a drop height of 60 cm is adjusted.

The steel ball (324 ± 5) g (42.8 ± 0.2) mm is release avoiding multiple impacts.

If cracking is evident or imprint is greater than 10mm diameter, the drop height is reduced and the test is repeated. If not, the drop height is raised in steps of 5 cm.

The maximum height at which there are no cracks or imprints greater than 10mm diameter is determined, and calculate the average of five elements to the nearest 50mm.

The impact requirements of floor covering according to the use intensity are indicated at EN 14354:2017" Wood-based panels - Wood veneer floor coverings" as:

INTENSITY OF USE	**DOMESTIC**			**COMMERCIAL**		
	Moderate	General	Heavy	Moderate	General	Heavy
Resistance to impact	EC 0	EC1		EC2	EC 3	

Intensity of use class (EN 14354:2017)

Elasticity classification	**Fall height (mm)**			
	≥ 800	≥ 1 000	≥ 1 200	≥ 1 400
	EC0	EC1	EC2	EC3

Note: Fall height is expressed in inches, on the request of customer.

6. OBTAINED RESULTS

OPENED PORE PROCESS AIDIMME reference 1806222-01.

CHARACTERISTIC	RESULT
Wear resistance. Abrasion to the support. (cycles)	1 700

CLOSED PORE PROCESS / A AIDIMME reference 1806222-02.

CHARACTERISTIC	RESULT
Wear resistance. Abrasion to the support. (cycles)	5 500
Identation / Brinell hardness (N/mm^2) * Identation / Brinell hardness (lbf/in^2)	42.7 (3.3) 6 193
Impact resistance Fall height (mm) Fall height (in) Elasticity	 1 000 39.37 EC1

*The average value of the measure is indicated and the standard deviation in brackets.
Note: Hardness is expressed in psi and fall height is expressed in inches, on the request of customer.

CLOSED PORE PROCESS / B AIDIMME reference 1806222-03.

CHARACTERISTIC	RESULT
Wear resistance. Abrasion to the support. (cycles)	1 850

The result of the test/s only concerns to the tested object.

Note: This report is an english version of the report n. 221.I.1807.470.ES.01 issued in date 9th July, 2018, on the request of customer.

Date: 9th July, 2018

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