

TEST REPORT

No. : SHIN1602006866PS

Date : Apr 18, 2016

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CUSTOMER NAME: TOLI CORPORATION
ADDRESS: 5-125 HIGASHI ARIOKA, ITAMI-SHI, HYOGO, JAPAN

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name : PVC SHEET
Product Specification : W1820mmx9m/roll
Product or Lot No. : 20FL11
Manufacturer : TOLI CORPORATION
Material and Mark : FLOORLEUM PLAIN
Date of Receipt : Feb 22, 2016
Testing Start Date : Feb 22, 2016
Testing End Date : Apr 14, 2016
Test result(s) : For further details, please refer to the following page(s)

Signed for
SGS-CSTC Standards Technical
Services (Shanghai) Co., Ltd.

Zano Lai

Zano Lai
Authorized signatory



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Lab environmental condition: 23±2°C, 50±5%RH

1. Overall thickness

Test item	Test method	Test result	
Overall thickness	EN ISO 24346:2012	Overall thickness (mm)	2.00

Note: Test specimens were cut from the sample.

2. Thickness of wear layer

Test item	Test method	Test result	
Thickness of wear layer	EN ISO 24340:2012	Thickness of wear layer (mm)	0.30

Note: Test specimens were cut from the sample.

3. Mass per unit area

Test item	Test method	Test result	
Mass per unit area	EN ISO 23997:2012	Mass per unit area (g/m ²)	3250

Note: Test specimens were cut from the sample.

4. Length and width

Test item	Test method	Test result	
Length and width	EN ISO 24341:2012	Length (m)	9.05
		Width (mm)	1835

5. Residual indentation

Test item	Test method	Test result	
Residual indentation	EN ISO 24343-1:2012	Residual indentation (mm)	0.03

Note: Test specimens were cut from the sample.



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6. Staining and resistance to chemicals

Test item	Test method	Test result	
Staining and resistance to chemicals	EN ISO 26987:2012	Index ^{Note (2)} (tested by synthetic detergent)	0

Notes:

(1) Test specimens were cut from the sample.

(2) Interpretation and presentation of results:

Index	Effect of test after cleaning/abrasion
0	Not affected
1	Slight
2	Moderate
3	Severe

7. Dimensional stability and curling after exposure to heat

Test item	Test method	Test result	
Dimensional stability and curling after exposure to heat	EN ISO 23999:2012	Dimensional change (%)	Manufacturing direction: 0.04 Across-manufacturing direction: 0.44
		Curling (mm)	8.5

Note: Test specimens were cut from the sample.

8. Colour Fastness To Light

(ISO 105-B02:2014; use Xenon arc lamp, exposure cycle A1, no flip-flop mode was used)

Comparison upto blue wool

reference 6

Grade (Bluewool Std)

6



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9. Dynamic coefficient of friction

Test method: EN 13893:2002

Test condition:

Specimen thickness: 1.98mm

Total mass of slider assembly: 9.5kg

Testing speed: 0.26m/s

Test result: 0.57

10. Wear resistance

Test method: EN 660-2:1999+ A1:2003 and EN 649:2011

Test condition: Weigh the specimens to an accuracy of $\pm 0.1\text{mg}$ after conditioning. Load each wheel with a weight of $(1 \pm 0.01)\text{ kg}$. The flow of abrasive is $(21 \pm 3)\text{g/min}$. Abrade one specimen during 5000 revolutions, with a break for weighing after each cycle of 1000 revolutions, and then test the two remaining specimens. If, however, the first specimen is abraded through before 5000 revolutions, discard it and test the two remaining specimen in cycles of 200 revolutions stopping the test after 2000 revolutions or when the specimen is abraded through.

Calculate the average mass loss. F_m , in milligrams per 100 revolutions for each specimen as follows:

$$F_m = \frac{F_{tot}}{n} \times 100$$

Calculate the loss of volume for each specimen for 100 revolutions as follows:

$$F_v = \frac{F_m}{\rho}$$

Requirement of EN 649:2011:

Characteristic	Requirements for wear group			
	T	P	M	F
Volume loss $F_v(\text{mm}^3)/100$ revolutions	$F_v \leq 2.0$	$2.0 < F_v \leq 4.0$	$4.0 < F_v \leq 7.5$	$7.5 < F_v \leq 15.0$



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Test result:

Test result	Wear group
Fv=1.3mm ³ /100 revolutions	T

Note: All test specimens were cut from the sample.

Statement: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Sample photo:



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11. Test for Resistance to Bacteria

Test Method: ISO 846-1997 Plastics-Evaluation of the action of microorganisms

Method C: Resistance to bacteria

Test Organisms: *Pseudomonas aeruginosa* ATCC 19429

Test Condition: The dimensions of the specimens: 40×40mm

Incubation temperature: 29±1 °C

Microbicidal solution: Dip specimens into an ethanol-water mixture for 1 min and dry at 45 °C for 4 h.

Disinfect Batch S sample by dipping into o-Phenylphenol solution.

Test Result:

1) Assessment of bacteria growth

Test organism	Concentration of bacteria cell suspension (cfu/mL)	Level of growth on the specimens (after 28 days)	
		Inoculated specimens for incubation (Batch I)	Sterile controls (Batch S)
<i>Pseudomonas aeruginosa</i> ATCC19429	1.0X10 ⁶	0	0

Assessment of bacteria growth:

0: No growth apparent under the microscope.

1: No growth visible to the naked eye, but clearly visible under the microscope.

2: Growth visible to the naked eye, covering up to 25% of the test surface.

3: Growth visible to the naked eye, covering up to 50% of the test surface.

4: Considerable growth, covering more than 50% of the test surface.

5: Heavy growth, covering the entire test surface.

2) Change in mass: #1:Δm=-0.1%,#2:Δm=-0.1%,#3:Δm=0.0%,#4:Δm=-0.1%,#5:Δm=-0.1%,#6:Δm=0.0%



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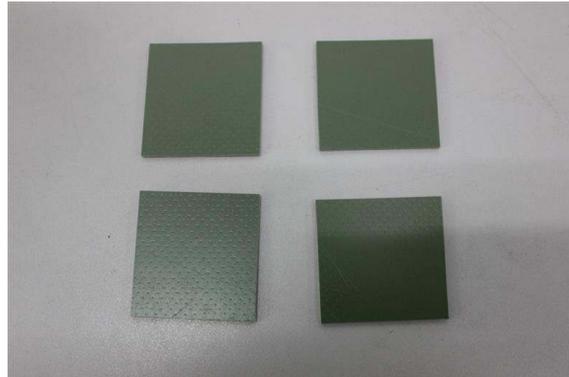
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Sample Photo:



***** End of report*****



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