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**CUSTOMER NAME:** POLILAM CO.LTD.

ADDRESS: 4845 HOMESTEAD RD., SUITE 516, HOUSTON, TEXAS 77028

Sample Name : FIBER REINFORCED BOARD (FRB)

**Product Specification** 3mm

Material Paper ,resin, Fiberglass

Color White

Other Information Density: 1820Kg/m3

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : SHRT25000128S01

Date of Receipt : 2025-07-07

**Testing Period** : 2025-07-07 ~ 2025-08-04

Test result(s) : For further details, please refer to the following page(s)

(Unless otherwise stated the results shown in this test report refer only

to the sample(s) tested)

Signed for SGS-CSTC Standards Technical

Services (Shanghai) Co., Ltd..

Xander Yang

Authorized signatory

Xander Yang





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### Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Flexural Stress and Modulus of Elasticity	ASTM D790-17 Method A	See Result	N/A
2	Stain Resistance	ANSI NEMA LD3-2005 Section 3.4	See Result	N/A
3	Boiling Water Resistance	ANSI NEMA LD3-2005 Section 3.5	See Result	N/A
4	High Temperature Resistance	ANSI NEMA LD 3-2005 Section 3.6 Hot Oil Method	See Result	N/A
5	Ball Impact Resistance	ANSI NEMA LD 3-2005 Section 3.8	See Result	N/A
6	Wear Resistance	ANSI NEMA LD 3-2005 Section 3.13	See Result	N/A
7	Tensile Test	ASTM D638-22	32.0 MPa	N/A
8	Tensile Modulus	ASTM D638-22	13.1 GPa	N/A
9	Light Resistance*	NEMA LD 3-2005 Section 3.3	See Result	N/A
10	Room Temperature  Dimensional  Stability	With Reference to ANSI NEMA LD3-2005 Section 3.12	See Result	N/A

Note: Pass: Meet the requirements;

Fail: Does not meet the requirements;

N/A: Not Apply to the judgment.



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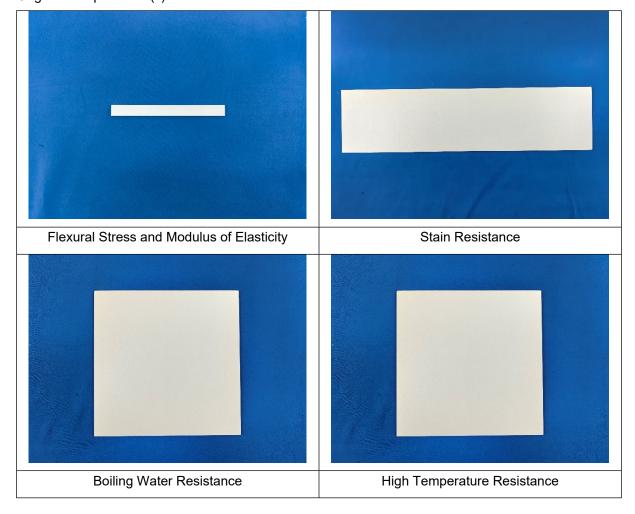


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### Original Sample Photo(s):





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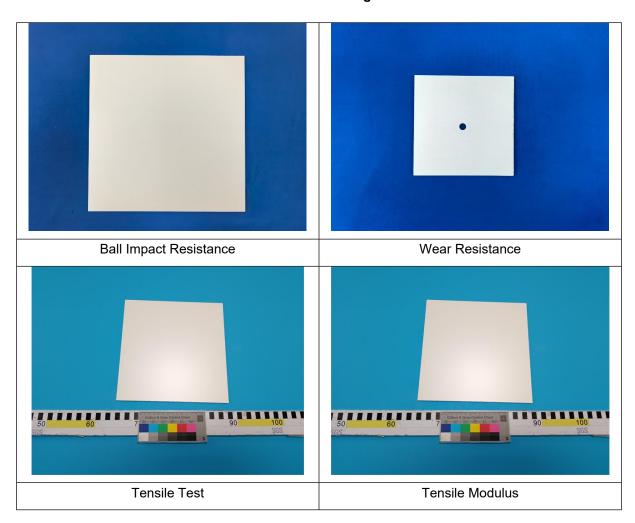
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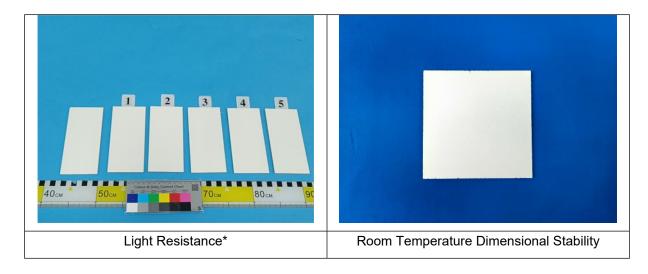
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Test Item: Flexural Stress and Modulus of Elasticity

Test Method: ASTM D790-17 Method A

**Test Condition:** 

Specimen: 127mm×12.7mm×3.0mm,5pcs

Test span: 48mm

Test rate: 1.28mm/min

Lab Environmental Condition: (23±2)°C, (50±5)%RH

#### Test Result:

Test Item	Test Result					
rest item	Individual Value				Average Value	
Flexural Stress (MPa)	67.7	53.6	67.5	75.0	65.5	65.9
Modulus of Elasticity (MPa)	11678	12128	12352	14295	12862	12663



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Test Item: Stain Resistance 2.

Test Method: ANSI NEMA LD3-2005 Section 3.4

**Test Condition:** 

Specimen: 400mm×100mm×3.0mm, 1pc

Lab Environmental Condition: (23±2)℃, (50±5)%RH

#### Test Result:

Test Item	Test Result		
Stain Resistance	Stain Resistance	Stain agent	
Stall 1 (Solidarios	Moderate effect	Black permanent marker	

### Original Data:

Test Item	Stain agent	Contact time	Test Result		
restitem	Test item Stain agent		Individual Value	Total Value	
	Distilled water		0		
	Ethyl alcohol solution		0	2	
	Acetone		0		
	Household ammonia		0		
	10% Citric acid		0		
Stain Resistance	Vegetable oil	24h	0		
Stalli Nesistalice	Fresh coffee	2411	0		
	Fresh tea		0		
	Catsup		0		
	Yellow mustard		0		
	10% Povidone iodine		0		
	Black permanent marker		2		



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	#2 pencil	0	
	Wax crayon	0	
Blac	ck paste shoe polish	0	

#### Note:

- 1) No effect—all stain reagents removed with no impairment to surface appearance. Any change in gloss due to the cleaning procedure is permitted.
- 2) Moderate effect—a difficult to perceive stain visible from all angles and directions. Any change in gloss due to the cleaning procedure is permitted.
- 3) Severe effect—any easy to perceive stain or disturbed surface visible from all angles and directions.



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3. Test Item: Boiling Water Resistance

Test Method: ANSI NEMA LD3-2005 Section 3.5

**Test Condition:** 

Specimen: 200mm×200mm×3.0mm, 1pc

Test time: 20min

Lab Environmental Condition: (23±2)°C, (50±5)%RH

#### Test Result:

Test Item	Test Result
Boiling Water Resistance	No effect

#### Note:

- a. No effect-no change in color or surface finish.
- b. Slight effect-a change in color or surface finish only visible at certain angles or directions.
- c. Moderate effect-a change in color or surface finish visible from all angles and directions, but does not appreciably alter the original condition of the specimen.
- d. Severe effect-a change in color or surface finish which obviously and markedly alters the original condition of the specimen.





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Test Item: High Temperature Resistance

Test Method: ANSI NEMA LD 3-2005 Section 3.6 Hot Oil Method

**Test Condition:** 

Specimen: 200mm×200mm×3.0mm, 1pc

Test temperature: 180°C

Contact time: 20min Cooling time: 24h

Lab Environmental Condition: (23±2)°C, (50±5)%RH

#### Test Result:

Test Item	Test Result
High Temperature Resistance	No effect

#### Note:

- a. No effect-no change in color or surface finish.
- b. Slight effect-a change in color or surface finish only visible at certain angles or directions.
- c. Moderate effect-a change in color or surface finish visible from all angles and directions, but does not appreciably alter the original condition of the specimen.
- d. Severe effect-a change in color or surface finish which obviously and markedly alters the original condition of the specimen.





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Test Item: Ball Impact Resistance

Test Method: ANSI NEMA LD 3-2005 Section 3.8

**Test Condition:** 

Specimen: 300mm×300mm×3.0mm, 5pcs

Steel ball: Ф38.1mm, 224g

Lab Environment Condition: (23±2)℃, (50±5)%RH

#### Test Result:

Test Item	Test Result
Ball Impact Resistance	675mm



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Test Item: Wear Resistance 6.

Test Method: ANSI NEMA LD 3-2005 Section 3.13

**Test Condition:** 

Specimen: 103mm×103mm×3.0mm, 3pcs

Test wheel: CS-0 Load: 500g/Wheel

Lab Environment Condition: (23±2)℃, (50±5)%RH

#### Test Result:

Test Item	Test Result			
Tool hom		Individual Value		Average Value
Wear Resistance (r)	esistance (r) 5150		5750	5350



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Test Item: Tensile Test 7.

Sample Description: A-White plastic sheet

Test Method: ASTM D638-22

**Test Condition:** 

Specimen Type: Type I

Specimen Thickness: 3.183 mm

Testing Speed: 5 mm/min

Gauge length: 50 mm

Initial Grip distance:115 mm

Lab Environmental Condition: (23 ± 2) °C, (50 ± 5) %RH

Test Result: Sample A

Test Item	Test Result
Tensile Strength	32.0 MPa

Note: Test specimens were cut from the sample.



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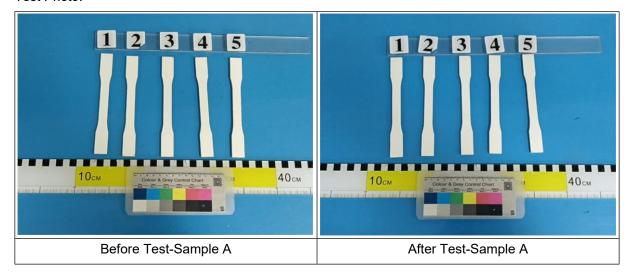


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#### Test Photo:



### **Equipment Information:**

Equipment Name	Model	Model Equipment No.	Calibration date	Next Calibration
Equipment Name	Model Equipment No.		Calibration date	date
Microcomputer controlled				
electronic universal testing	LE5255	P-816	2025-01-06	2026-01-05
machine				



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Test Item: Tensile Modulus 8.

Sample Description: A-White plastic sheet

Test Method: ASTM D638-22

**Test Condition:** 

Specimen: Type I

Specimen Thickness: 3.183 mm

Testing Speed: 5 mm/min Gauge Length: 50 mm

Initial Distance between Grips: 115 mm

Lab Environmental Condition: (23 ± 2) °C, (50 ± 5) %RH

Test Result: Sample A

Test Item	Test Result
Tensile Modulus	13.1 GPa

Note: Test specimens were cut from the sample.



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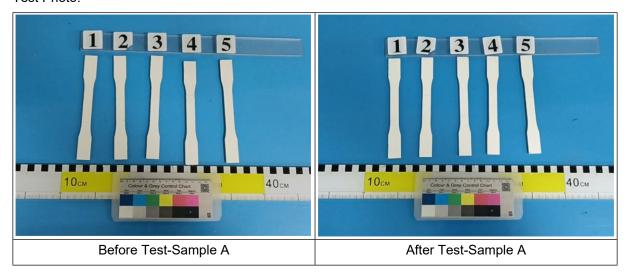
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#### Test Photo:



### **Equipment Information:**

Equipment Name	Model	Equipment No.	Calibration date	Next Calibration
Equipment Name				date
Microcomputer controlled				
electronic universal	LE5255	P-816	2025-01-06	2026-01-05
testing machine				



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9. Test Item: Light Resistance\* Sample Description: A-White panel

Test Method: NEMA LD 3-2005 Section 3.3

**Test Condition:** 

Pretreatment: (23±3)°C, (50±5)%RH, 48h

**Exposure Cycle:** 

Irradiance: (1.10±0.03)W/(m2·nm)@420nm

Continuous light at (70±3)°C BPT, (50±3)°C CT, (50±5)% RH

Filter: Window-Q Exposure Period: 72h

Lab Environmental Condition: (23 ± 2) °C, (50 ± 5) %RH

Test Result: Sample A

Test Item	Test Result
Light Resistance	No effect

#### Note:

According to ANSI NEMA LD 3-2005 section 3.3.6, grade as follow:

No effect - no noticeable change in color or surface finish.

Slight effect - a change in color or surface finish visible only at certain angles and directions.

Moderate effect - a change in color or surface finish visible at all angles and directions but does not notably alter the original condition of the specimen.

Severe effect - a change in color or surface finish which markedly alters the original condition of the specimen.

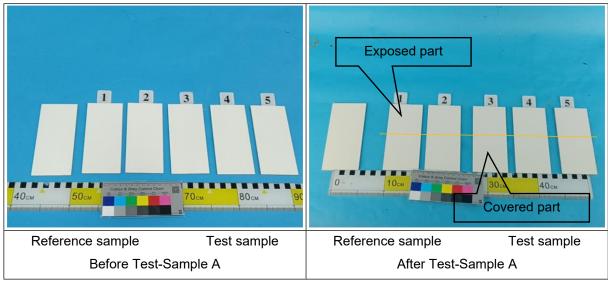




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#### Test Photo:



### **Equipment Information:**

Equipment Name	Model	Equipment No.	Calibration date	Next Calibration date
Q-sun Xenon	Q-SUN	SUZMR-146	2024-09-03	2025-09-02
Test Chamber	XE-3-HBS	302IVIN-140		

<sup>\*</sup>test project was carried out SGS-CSTC Standards Technical Services Co., Ltd. Suzhou Branch Testing Center.





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10. Test Item: Room Temperature Dimensional Stability

Test Method: With Reference to ANSI NEMA LD3-2005 Section 3.12

**Test Condition:** 

Specimen: 120mm×120mm×3.0mm, 3pcs

Test Condition: 23°C, 90%RH, 96h→5°C, 6h→The initial measurement→23°C, 15%RH,

96h→The final measurement

Lab Environmental Condition: (23±2)°C, (50±5)%RH

#### Test Result:

Test Item	Test Result				
	Individu	Average Value			
Room Temperature  Dimensional Stability	0.00	0.15			
(%)	0.23	0.19	0.12		
	0.05	0.10			

This test report updates Room Temperature Dimensional Stability, supersedes the test report No.

SHIN2507001648CM01\_EN dated Jul 25th, 2025, original report will be invalid from today.

The test report shall only be used for clients' scientific research, teaching, internal quality control, product research and development, etc... and just for internal reference.

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



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