

TEST REPORT

No. : SHIN2507001648CM01_EN

Date : 2025-07-25

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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: 18200Kg/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 ~ 2025-07-25
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

Xander Yang
Authorized signatory



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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

Note: Pass : Meet the requirements;
Fail : Does not meet the requirements;
N/A : Not Apply to the judgment.



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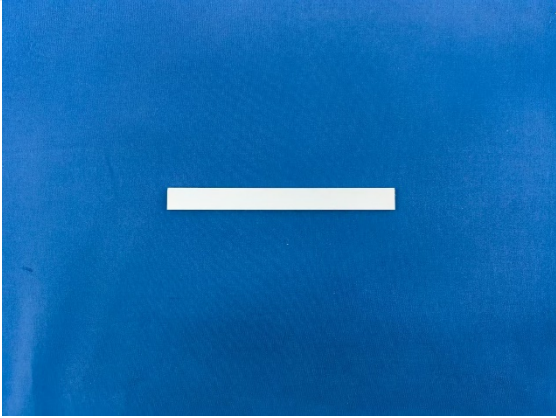

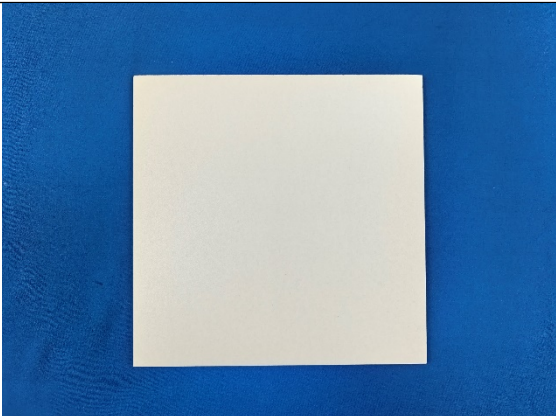
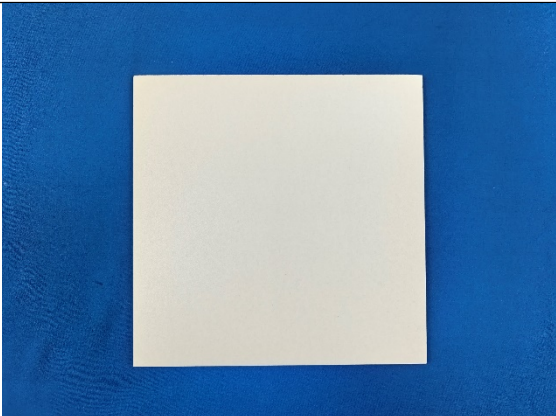
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Original Sample Photo(s):

	
Flexural Stress and Modulus of Elasticity	Stain Resistance
	
Boiling Water Resistance	High Temperature Resistance



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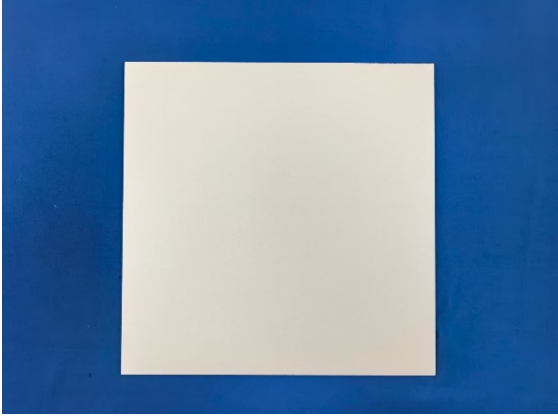
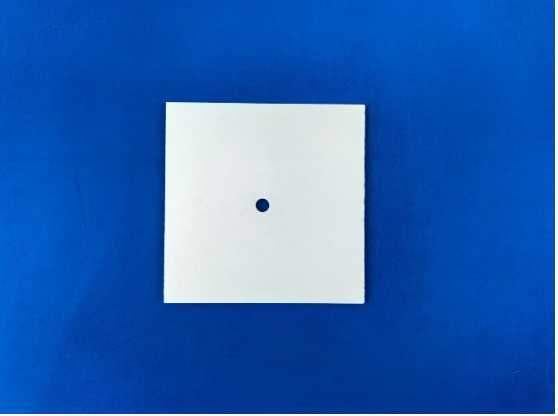
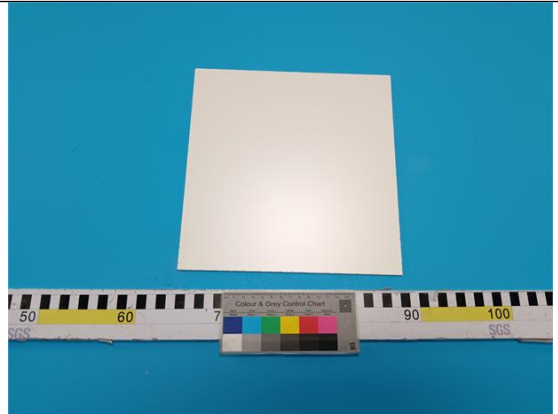
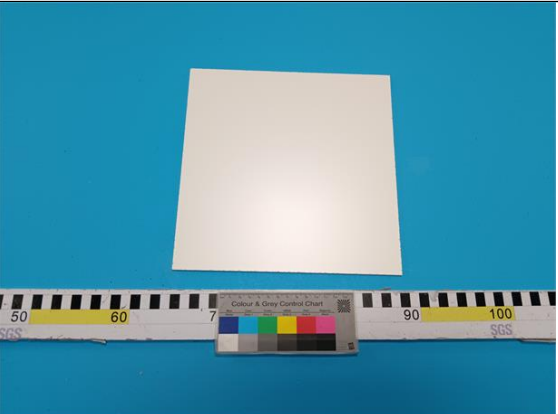
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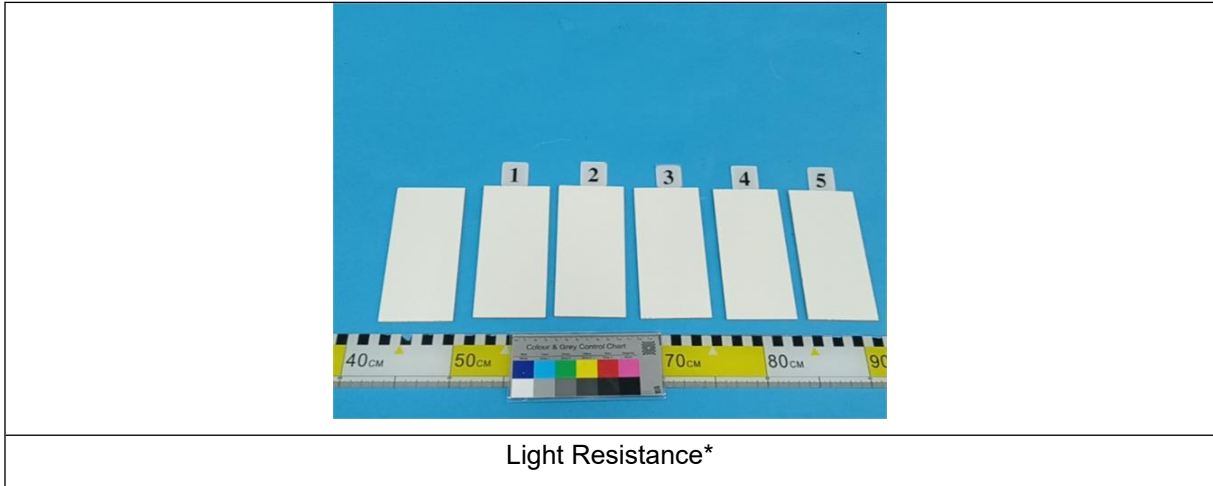
	
Ball Impact Resistance	Wear Resistance
	
Tensile Test	Tensile Modulus

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1. 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					
	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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2. Test Item: Stain Resistance

Test Method: ANSI NEMA LD3-2005 Section 3.4

Test Condition:

Specimen: 400mm×100mm×3.0mm, 1pc

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

Test Result:

Test Item	Test Result	
Stain Resistance	Stain Resistance	Stain agent
	Moderate effect	Black permanent marker

Original Data:

Test Item	Stain agent	Contact time	Test Result	
			Individual Value	Total Value
Stain Resistance	Distilled water	24h	0	2
	Ethyl alcohol solution		0	
	Acetone		0	
	Household ammonia		0	
	10% Citric acid		0	
	Vegetable oil		0	
	Fresh coffee		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	
	Black 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:

- No effect-no change in color or surface finish.
- Slight effect-a change in color or surface finish only visible at certain angles or directions.
- 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.
- Severe effect-a change in color or surface finish which obviously and markedly alters the original condition of the specimen.



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4. 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℃

Contact time: 20min

Cooling time: 24h

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

Test Result:

Test Item	Test Result
High Temperature Resistance	No effect

Note:

- No effect-no change in color or surface finish.
- Slight effect-a change in color or surface finish only visible at certain angles or directions.
- 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.
- Severe effect-a change in color or surface finish which obviously and markedly alters the original condition of the specimen.



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5. 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: Φ38.1mm, 224g

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

Test Result:

Test Item	Test Result
Ball Impact Resistance	675mm



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6. Test Item: Wear Resistance

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)°C, (50±5)%RH

Test Result:

Test Item	Test Result			
	Individual Value			Average Value
Wear Resistance (r)	5150	5200	5750	5350



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7. Test Item: Tensile Test

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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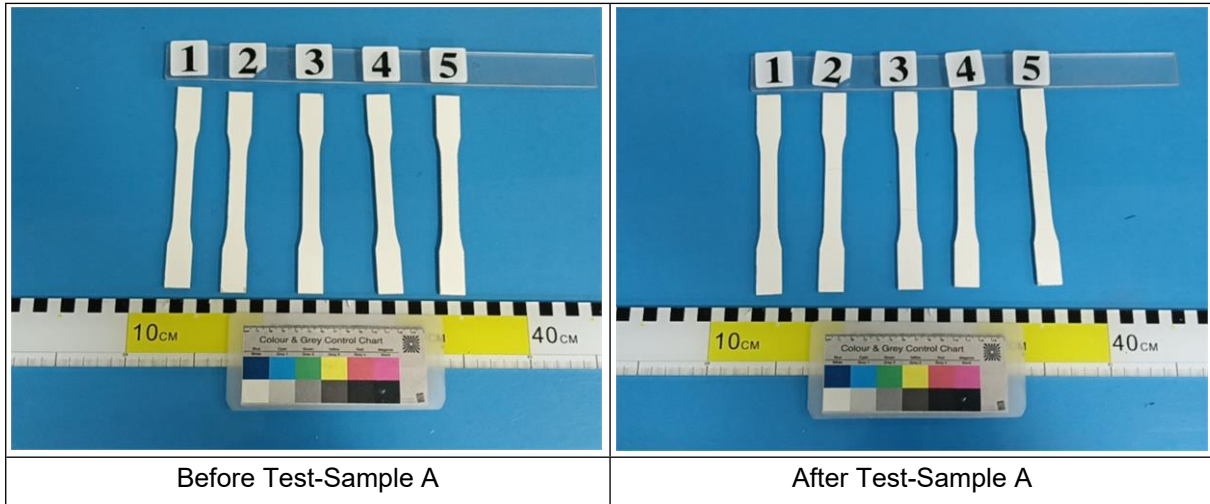
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Test Photo:



Equipment Information:

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



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8. Test Item: Tensile Modulus

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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t(86-21) 61196300 sgs.china@sgs.com

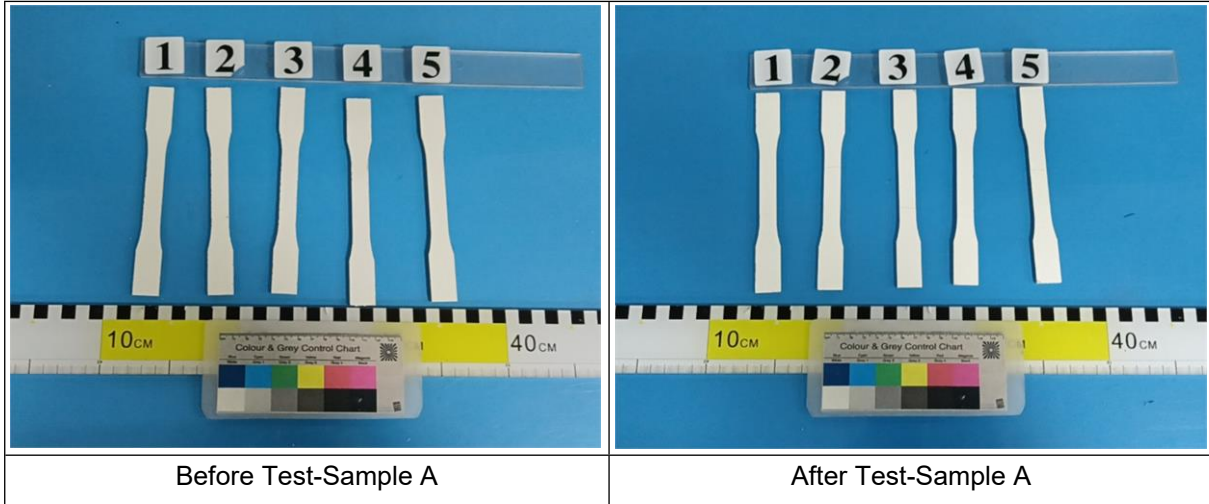
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Test Photo:



Equipment Information:

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



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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: $(23 \pm 3)^{\circ}\text{C}$, $(50 \pm 5)\% \text{RH}$, 48h

Exposure Cycle:

Irradiance: $(1.10 \pm 0.03) \text{W}/(\text{m}^2 \cdot \text{nm}) @ 420 \text{nm}$

Continuous light at $(70 \pm 3)^{\circ}\text{C}$ BPT, $(50 \pm 3)^{\circ}\text{C}$ CT, $(50 \pm 5)\% \text{RH}$

Filter: Window-Q

Exposure Period: 72h

Lab Environmental Condition: $(23 \pm 2)^{\circ}\text{C}$, $(50 \pm 5)\% \text{RH}$

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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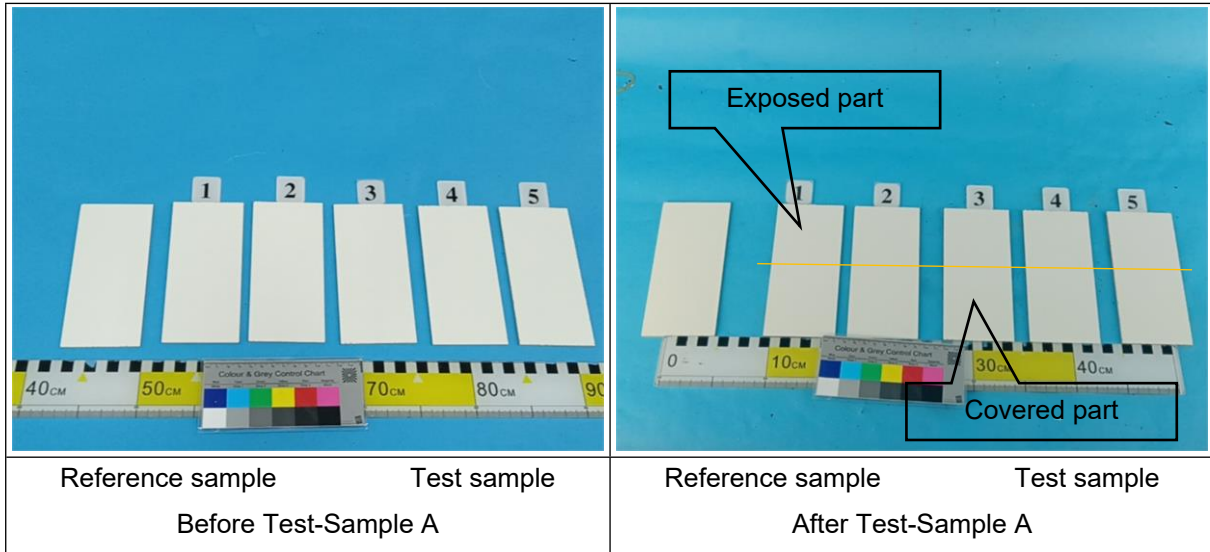
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Test Photo:



Equipment Information:

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

*Test project was carried out SGS-CSTC Standards Technical Services Co., Ltd. Suzhou Branch Testing Center.

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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