

## TEST REPORT

No. : GZIN2001000538PS

Date : Jan 14, 2020

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scan to see the report



GZIN2001000538PS

CUSTOMER NAME: WALER PRECISION MANUFACTURING SDN. BHD.  
ADDRESS: NO. 2 & 4, JALAN CANGGIH 1, TAMAN PERINDUSTRIAN  
CEMERLANG,81800 ULU TIRAM,JOHOR, MALAYSIA

Sample Name : RESYSTA FIBER POLYMER COMPOSITES

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. : SGS/2019-12-30-018/CA29505, GZIN2001000548CM  
Date of Receipt : Jan 03, 2020  
Testing Start Date : Jan 03, 2020  
Testing End Date : Jan 14, 2020  
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 Co., Ltd. GZ Branch Testing  
Center



Elean Fan  
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center Materials Laboratory

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## Summary of Results:

No.	Test Item	Test Method	Result		Conclusion
1	Deflection Temperature under Load	ISO 75-1:2013 & ISO 75-2:2013 Method A	67°C		/
2	Flexural Test	ISO 178:2019 Method A	See result		/
3	Flexural strength	ASTM D790-17 Procedure A	41.4MPa		/
4	Mean Coefficient of Linear Thermal Expansion	ISO 11359-1:2014 & ISO 11359-2:1999 Method A	-20°C	50×10-	/
			~20°C	6 K-1	
			30°C	57×10-	
			~60°C	6 K-1	
5	Direct Screw Withdrawal	ASTM D1037-12 Section 16	5511N		/

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



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1. Test Item: Deflection Temperature under Load

Sample Description: Bar

Test Method: ISO 75-1:2013 & ISO 75-2:2013 Method A

Test Condition:

Specimen: 80mm×10.63mm×4.26mm

Heat-transfer media: Silicone oil

T<sub>f</sub>1.8

Rate of temperature:120°C/h

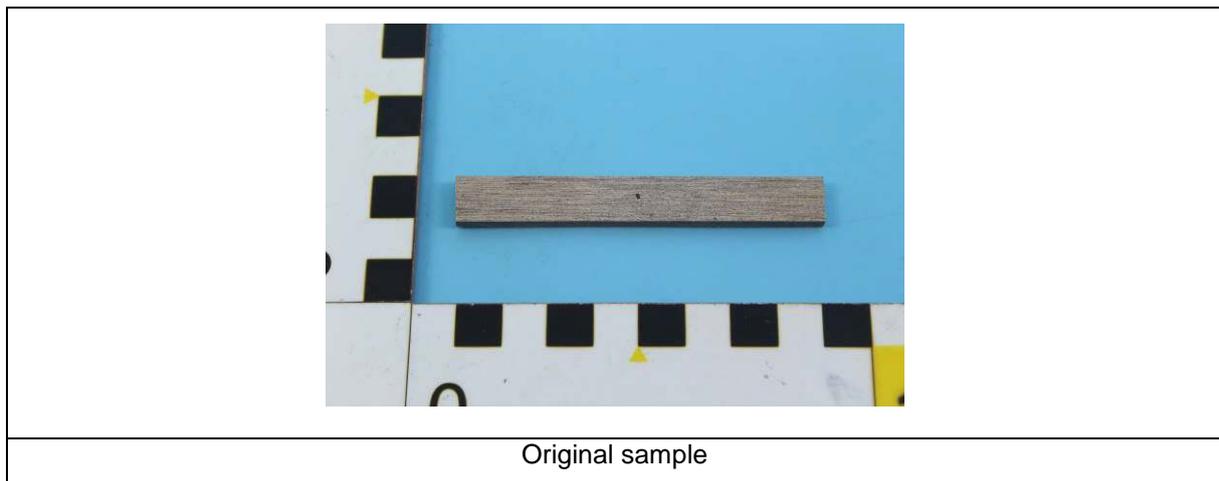
Span: 64mm

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

Test Result:

Test Item	Test Result
Deflection Temperature under Load	67°C

Test Photo:



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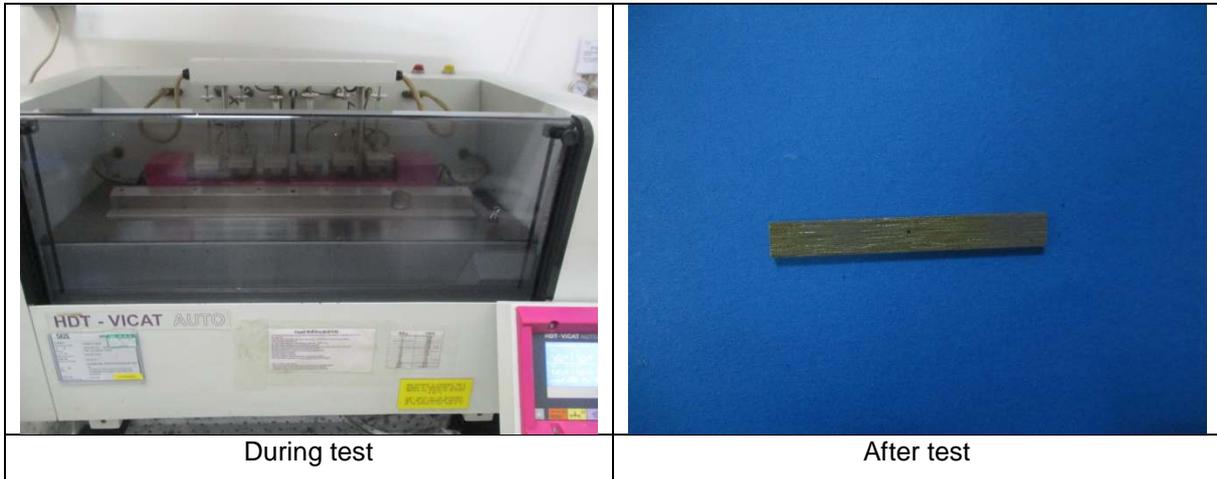
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
HDT and VICAT Tester	6970.000	GZMR-PL-E091	2019-03-13	2020-03-12

2. Test Item: Flexural Test

Sample Description: Bar

Test Method: ISO 178:2019 Method A

Test Condition:

Specimen: 83mm×10.61mm×4.17mm

Testing speed: 2mm/min

Span: 64mm

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



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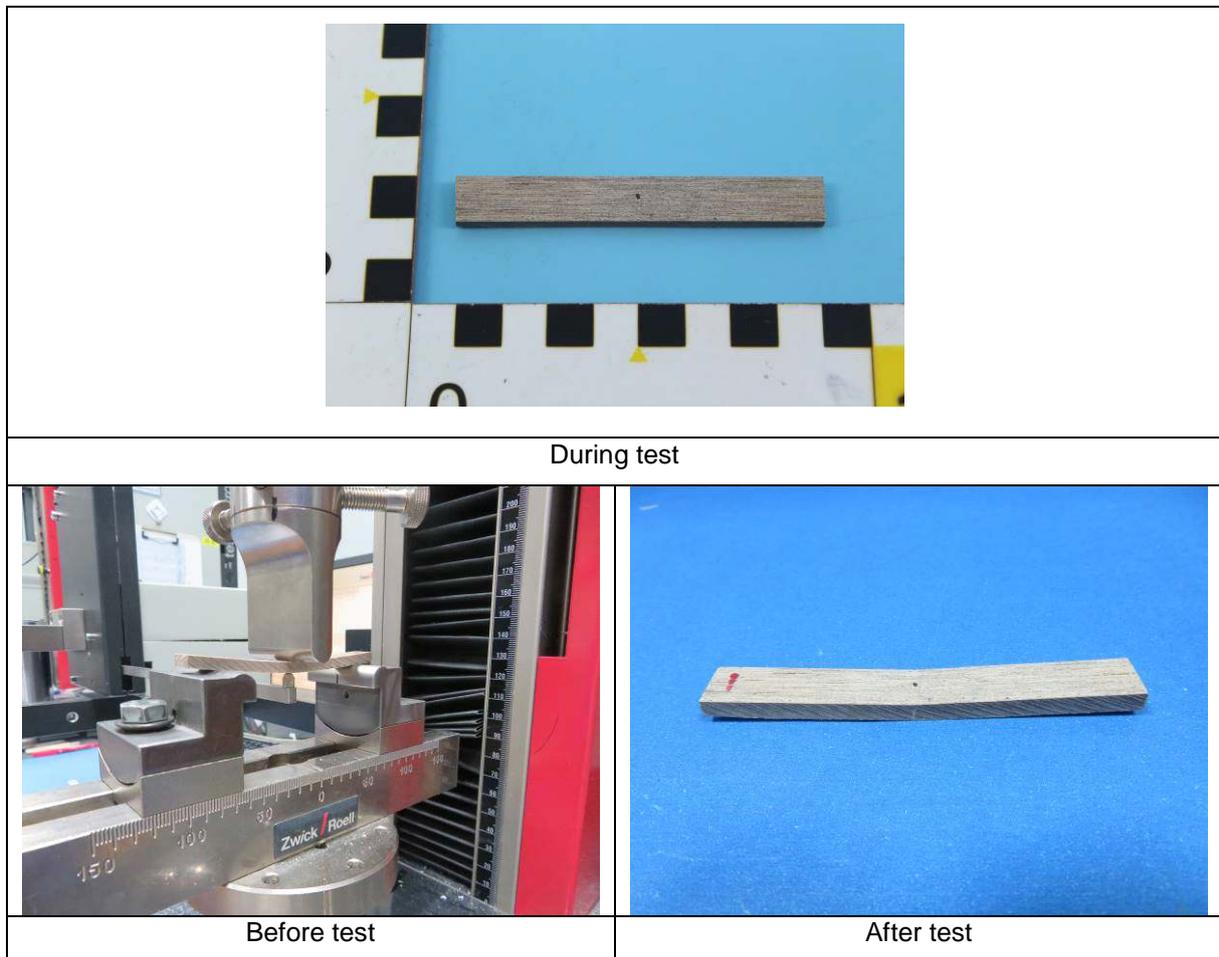
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Test Result:

Test Item	Test Result
Flexural Strength	42.9MPa
Flexural Modulus	4070MPa
Flexural strain at break	1.9%

Test Photo:



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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z1.0	GZMR-PL-E252	2019-03-12	2020-03-11

3.Test Item: Flexural Strength

Sample Description: Bar

Test Method: ASTM D790-17 Procedure A

Test Condition:

Specimen: 127mm x12.71mm x3.47mm

Testing speed: 1.5mm/min

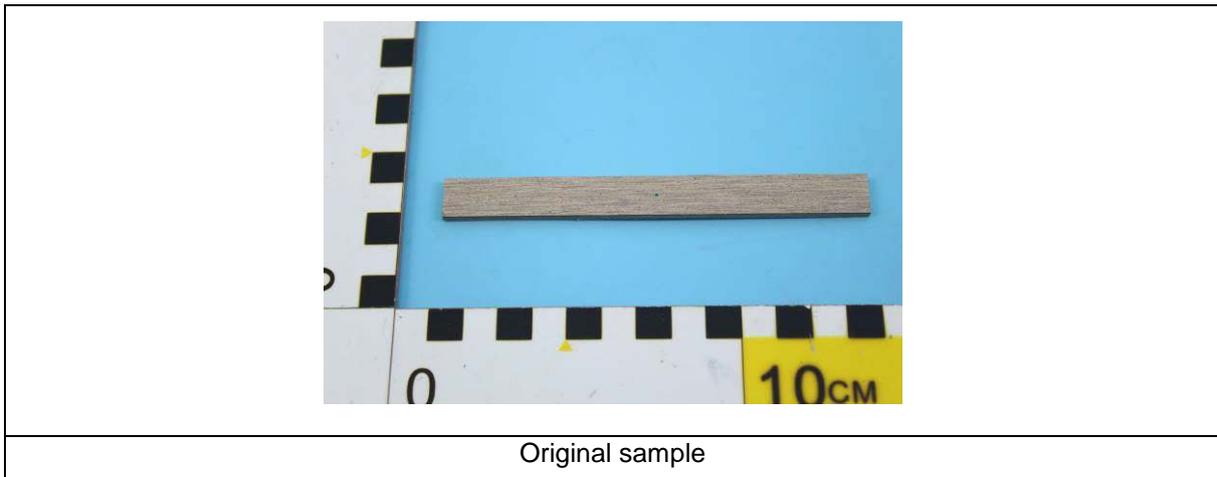
Span: 56mm

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

Test Result:

Test Item	Test Result
Flexural Strength	41.4MPa

Test Photo:



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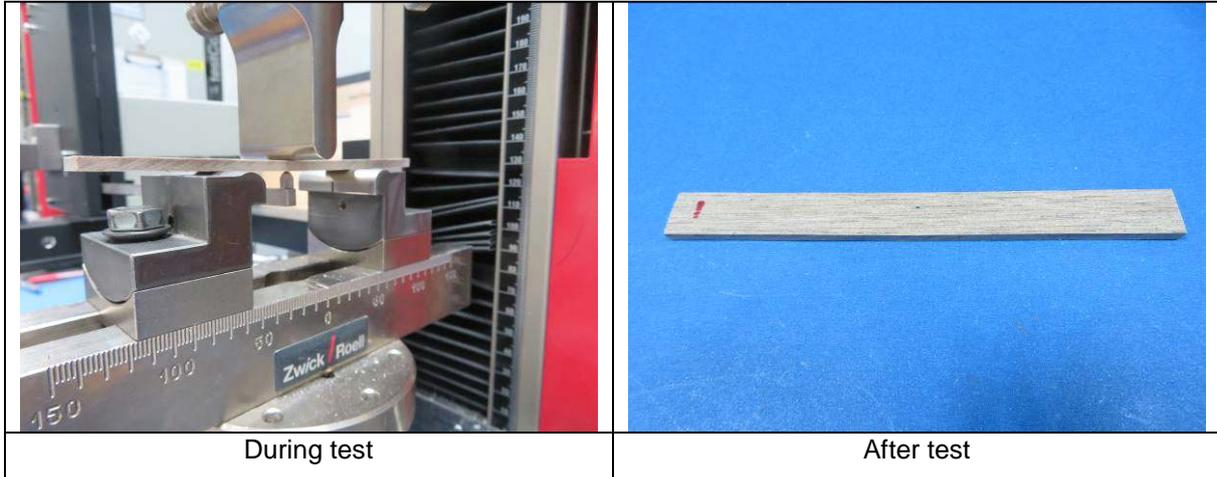
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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Universal Testing Machine	Z1.0	GZMR-PL-E252	2019-03-12	2020-03-11

4. Test Item: Mean Coefficient of Linear Thermal Expansion

Sample Description: Sheet

Test Method: ISO 11359-1:2014 & ISO 11359-2:1999 Method A

Test Condition:

Specimen: 9.90 mm x4.91mm x4.37mm

Rate of temperature: 5 °C/min

Load: 4KPa

Flow rate(He): 50 ml/min

Test temperature: -20 °C~60 °C

Test mode: Compression

Test direction: Direction of arrow

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



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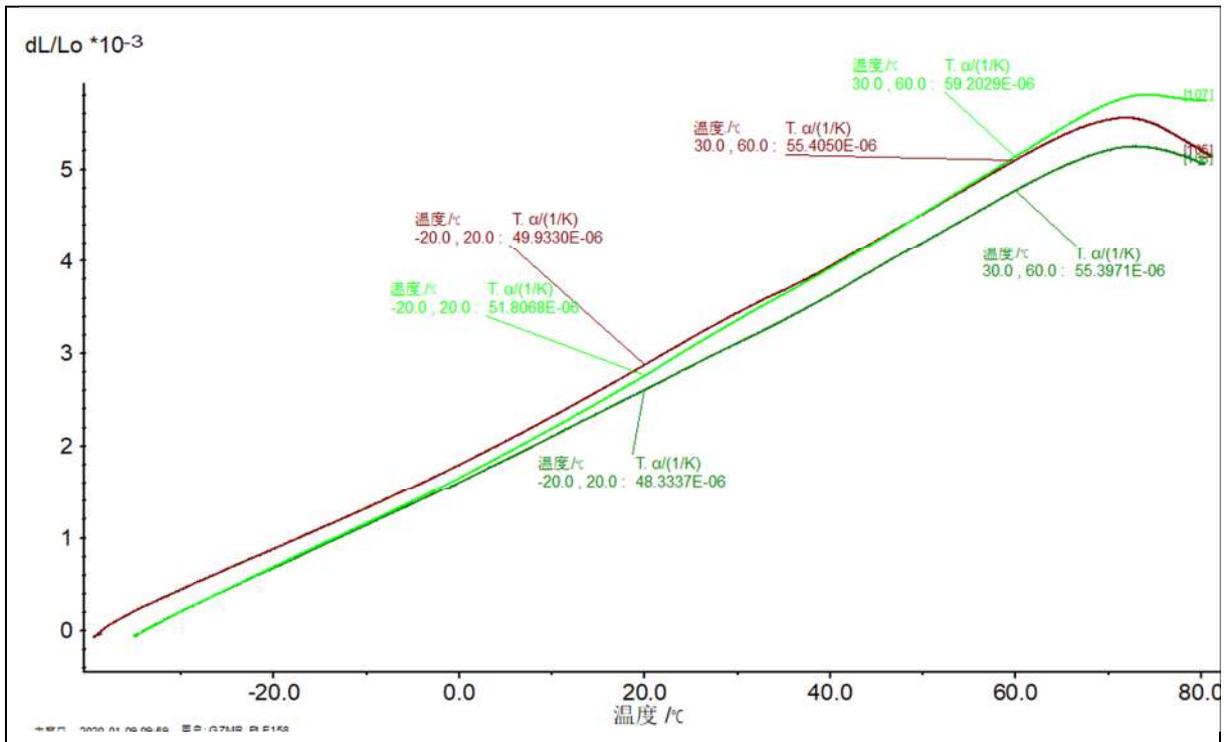
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Test Result:

Test Item	Test Result	
Mean Coefficient of Linear Thermal Expansion	-20°C~20°C	50×10 <sup>-6</sup> K <sup>-1</sup>
	30°C~60°C	57×10 <sup>-6</sup> K <sup>-1</sup>

Note: Test specimens were cut from the sample.

Curve:



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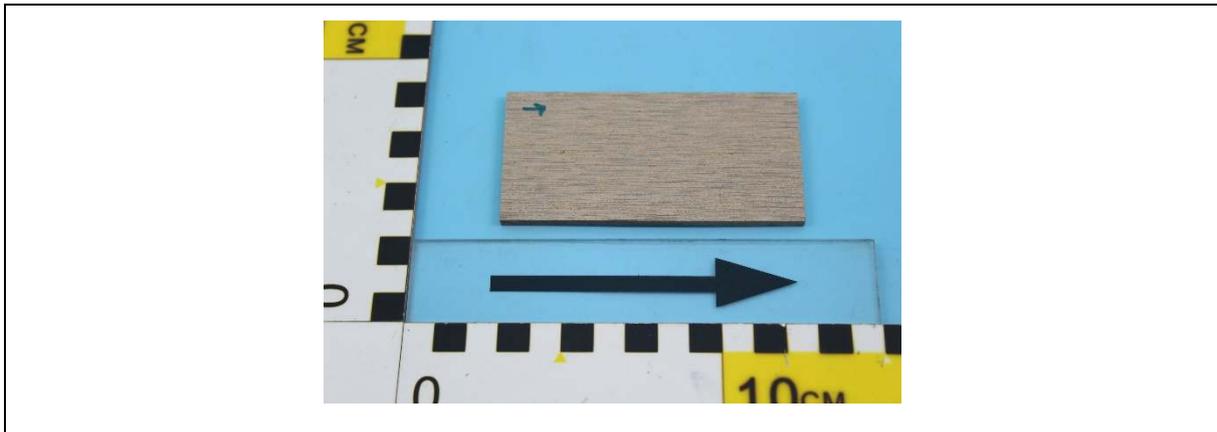
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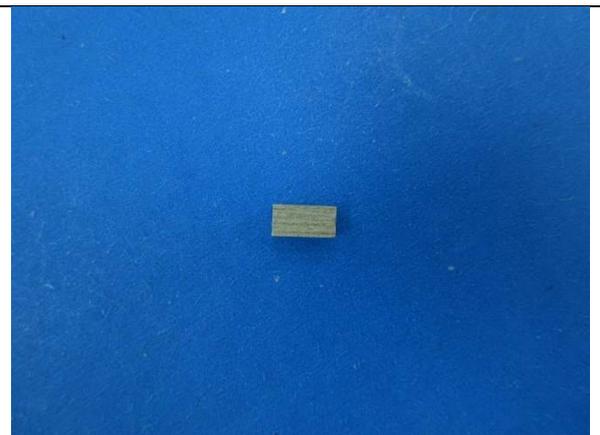
Test Photo:



Original sample



During test



Before test

Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Thermo Mechanical Analyzer	TMA402F3	GZMR-PL-E158	2019-09-02	2020-09-01



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5. Test Item: Direct Screw Withdrawal

Sample Description: See photo

Test Method: ASTM D1037-12 Section 16

Test Condition:

Specimen: 152x78x22.4mm (5 layers piled up)

Testing speed: 1.5mm/min

Out Diameter of Screw: 4.2mm

Root Diameter of Screw: 3.5mm

Threaded depth: 17mm

Test Result:

The face of the panel: 5511N

Note: All test specimens were cut from the sample.

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



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