

Test Report

Inter-laminar Shear Stress Test

Prepared for

Unique Fiberglass LLC

Document No. CT-TWR-18-49 Rev 0

CTRM Testing Laboratory Sdn Bhd
CTRM Complex, Batu Berendam
75350 Melaka
Malaysia

Tel : +6 06 331 9019
Fax : +6 06 317 7844
Email : testing@ctla.asia
Website: <http://www.ctrmtl.com>

Prepared for


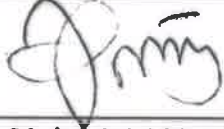

Unique Fiberglass LLC

By

CTRM Testing Laboratory Sdn Bhd

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Client:	Unique Fiberglass LLC
Address:	Unique Fiberglass & Composites L.L.C. Ras Al Khaimah, U.A.E.
Date Sample Received:	27 th November 2018

	Authored By	Reviewed By	Authorized By
Signature			
Name	Mohd Faizal Mohd Fauzi	Mohd Azizi Mat Sah	Mohd Taufik Nordin
Designation	Technical Engineer Laboratory Section	Head of Technical Laboratory Section	Head of Laboratory
Date	3/1/2019	3/1/2019	3.1.19

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Revision History

Date of Revision	Revision	Reason for change

1. Introduction

A series of tests have been conducted to determine the performance of the product under testing scope of Inter-laminar Shear Stress test. This report is prepared for Unique Fiberglass LLC, which presents the methodology and results of the test.

2. Description of Test Item

Test	Quantity
Inter-laminar Shear Stress (ASTM D2344) – LW	5
Inter-laminar Shear Stress (ASTM D2344) – CW	5

3. Test Condition

Testing was carried out at $23\pm 3^{\circ}\text{C}$ and relative humidity of $50\pm 5\%$ room condition.

4. Preparation of Test Specimen

Panel received on 27th November 2018 were packed and sealed in packaging.

5. Testing Equipment

5.1. Universal Testing Machine

Machine brand : INSTRON

Model : 5582

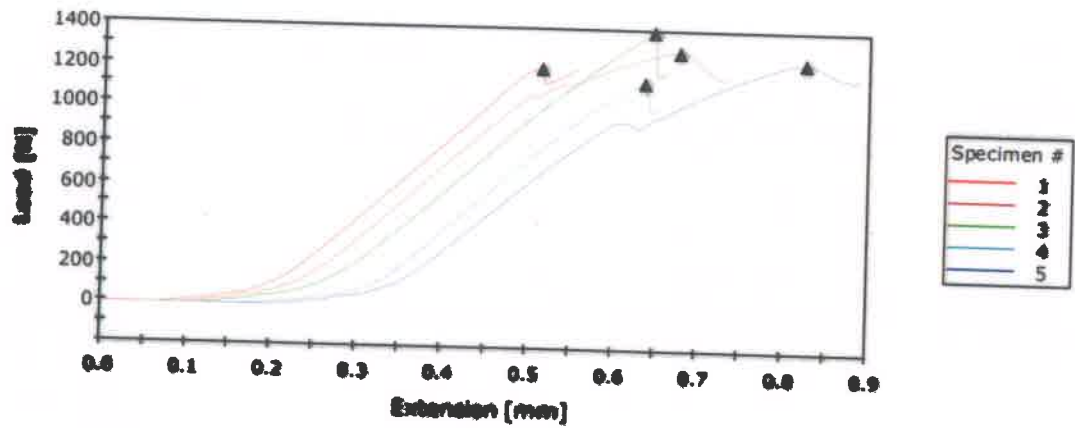
6. Comment/Observation

No abnormalities found during the testing.

7. Appendix

7.1. Inter-laminar Shear Stress - CW

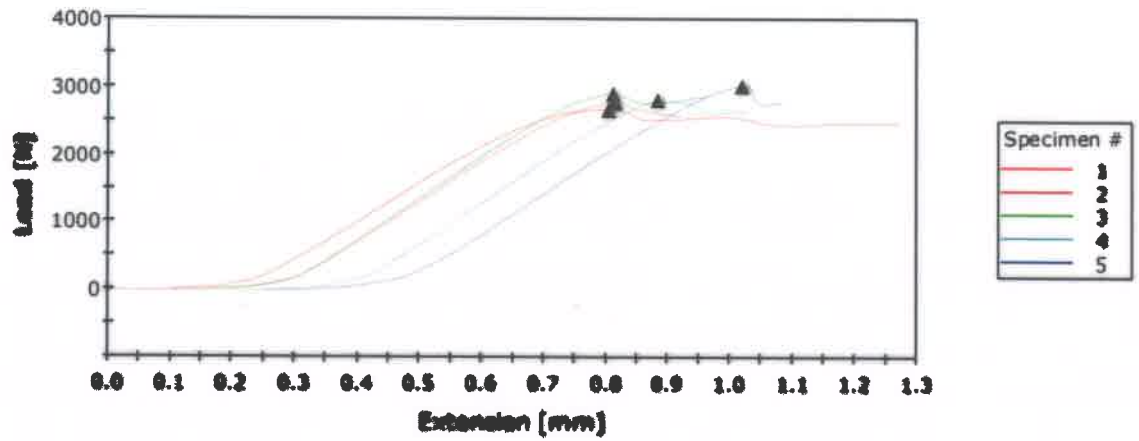
ILSS at RT



	Width [mm]	Thickness [mm]	Max Load [N]	Interlaminar Shear Strength [MPa]
1	12.03	6.65	1199.5	11
2	12.02	6.67	1291.3	12
3	12.11	6.66	1389.8	13
4	12.03	6.63	1135.5	11
5	12.12	6.64	1243.7	12
Mean	12.06	6.65	1252.0	12
S. D	0.05	0.02	96.12	1

7.2. Inter-laminar Shear Stress - LW

ILSS at RT



	Width [mm]	Thickness [mm]	Max Load [N]	Interlaminar Shear Strength [MPa]
1	12.03	6.69	2653.3	25
2	12.08	6.64	2769.4	26
3	11.98	6.70	2890.8	27
4	11.97	6.65	2802.6	26
5	12.17	6.65	3010.7	28
Mean	12.05	6.67	2825.4	26
S. D	0.08	0.03	134.05	1