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TEST REPORT

REPORT NO : 2023CE1707

PAGE : 1 OF 7

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THIS TEST REPORT IS ISSUED IN SECURED PDF SOFTCOPY

Applicant : MARKLON INDUSTRIES SDN BHD
19 - 25, Jalan Tiaj 2/1
Taman Industri Alam Jaya
42300 Bandar Puncak Alam
Selangor

Manufacturer : - same as above -

Product : POLYCARBONATE + FIBERGLASS CORRUGATED SHEET

Reference Standard / Method of Test : Please refer to Page 2 of this test report.

Description of sample : A new test sample shown in Appendix A was received on 10 July 2023 for testing.

Date Received of Complete Application : 11 July 2023

Job No. : J20233671274

Description of Test Results : The test results of the submitted test sample are described on Pages 3 to 5 of this test report.

Issued Date : 21 July 2023

Approved Signatory;

(MOHAMAD FAIS BIN NORDIN)
Testing Executive



(HAHNAS BINTI MAHBUT)
Head

Chemical, Polymer and Composite Section
Testing Services Department

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Methods of Test:

- 1) ASTM D5083:2017 - Standard Test Method for Tensile Properties of Reinforced Thermosetting Plastics Using Straight-Sided Specimens
- 2) ASTM D256:2018 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
- 3) ASTM D790:2017 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- 4) ASTM D792:2020 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- 5) ASTM D570:2022 - Standard Test method for Water Absorption of Plastics
- 6) BS 4154:Part 1:1985 - Corrugated Plastics Translucent Sheet Made from Thermo-Setting Polyester Resin (Glass Fibre Reinforced) - Part 1: Specification for Material and Performance Requirement
- 7) ASTM D1003:2021 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics
- 8) ASTM D635:2022 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position



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Results

Product : POLYCARBONATE + FIBERGLASS CORRUGATED SHEET
Brand : MARKLON POLYGLASS
Model : A23L-FB LIGHT GREEN ANGULAR POLYCARBONATE + FIBERGLASS
Size : THICKNESS: 1.2 MM

| NO. | PROPERTY | RESULT | TEST METHOD |
|-----|---------------------------------|-----------|---|
| 1 | Tensile Strength | 64.2 MPa | ASTM D5083 Test parameters: <ul style="list-style-type: none"> • Test speed: 5 mm/minute • Modulus test speed: 2 mm/minute • Grip to grip separation: 150 mm |
| 2 | Tensile Modulus | 2,570 MPa | Test date: 13 July 2023 |
| 3 | Izod Impact Strength - Notched* | 1,510 J/m | ASTM D256 Test parameters: <ul style="list-style-type: none"> • Pendulum: 2.75 Joule • Velocity: 3.46 m/s • No. of specimens tested: 10 pieces |
| 4 | Flexural Strength | 3,360 MPa | ASTM D790 Test parameters: <ul style="list-style-type: none"> • Test speed: 0.5 mm/minute • Support span: 25.4 mm • No. of specimens tested: 5 pieces |
| | | | Test date: 14 July 2023 |

Note: *SAMM Accredited



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Results

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Brand : MARKLON POLYGLASS
Model : A23L-FB LIGHT GREEN ANGULAR POLYCARBONATE + FIBERGLASS
Size : THICKNESS: 1.2 MM

| NO. | TEST | RESULT | TEST METHOD |
|-----|-------------------|---|--|
| 5 | Specific Gravity* | 1.201 | ASTM D792 Test parameters: • Immersion liquid: Distilled water • No. of specimens tested: 5 pieces Test date: 13 July 2023 |
| 6 | Water Absorption | 0.15 % | ASTM D570 Test parameters: • Duration: 24 hours • Temperature: 23°C Test date: 13 to 14 July 2023 |
| 7 | Load Deflection | No crack was observed after test. Deflection: 9.50 mm | BS 4154 Test parameters: • Load: 190 N • Duration: 5 minutes Test date: 16 July 2023 |

Note: *SAMM Accredited



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Results

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Brand : MARKLON POLYGLASS
Model : A23L-FB LIGHT GREEN ANGULAR POLYCARBONATE + FIBERGLASS
Size : THICKNESS: 1.2 MM

| NO. | TEST | RESULT | TEST METHOD |
|-----|---------------------|--------------------------|--|
| 8 | Light Transmission | 32.3 % | ASTM D1003 Using colour spectrophotometer Test parameters: <ul style="list-style-type: none">• Illuminant: D65• Observer: 10° Test date: 13 July 2023 |
| 9 | Linear Burning Rate | Horizontal Burning (HB)* | ASTM D635 Test parameters: <ul style="list-style-type: none">• Flame height: 20 mm• Flame time: 30 seconds• No. of test specimens tested: 10 pieces Test date: 14 July 2023 |

Note: *The flame front did not reach the 25 mm reference mark



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Appendix A

Sample Received for Testing

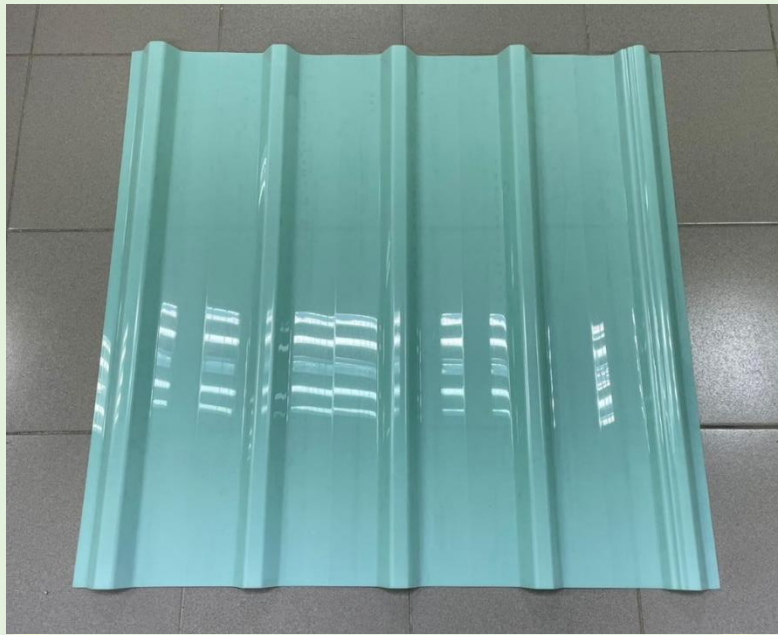


Figure A.1. Photograph of 'POLYCARBONATE + FIBERGLASS CORRUGATED SHEET' Sample



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CONDITIONS RELATING TO THE USE OF SIRIM QAS INTERNATIONAL TEST REPORT

1. A Test Report will be issued in respect of Testing Services conducted and shall relate only to the sample actually tested. SIRIM QAS International makes no warranty whatsoever and the Applicant shall not represent in any manner that any duplication or mass production of the Product is same as the sample actually tested or that SIRIM QAS International has tested any of the duplicated or mass-produced Product. Measurement uncertainty shall be included in the Test Report when there is no statement of conformity required. When a statement of conformity to a specification or standard is applied, the Simple Acceptance Rule is used. Unless otherwise stated, the Acceptance Rule with Guard Band is used.
2. The Test Report shall not be misused, amended, changed, varied or modified in any manner whatsoever by the Applicant or otherwise.
3. If the Test Report is to be furnished to any third party or to the public, each such Test Report shall be furnished in full, legible and in its entirety.
4. The Test Report shall not be reproduced and shall not in any event be used for any advertising purposes or whatsoever without written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International of No 1, Persiaran Dato' Menteri, Building 8, Section 2, P.O. Box 7035, 40700 Shah Alam, Selangor Darul Ehsan.
5. Customer (Applicant/Manufacture/Factory,etc.) is not permitted to use any SIRIM QAS International, SIRIM or other SIRIM's subsidiaries logo or words on packaging, sample's manual, technical specification, items and products.
6. Subject to consent and written approval from the Head of Quality, Occupational Safety and Health & Environment (QOSHE) of SIRIM QAS International, the customer (Applicant/Manufacture/Factory,etc.) may use SIRIM QAS International logo or word on the promotional materials and the Applicant shall only include the phrase, "A sample of this product has been tested by SIRIM QAS International ...(Test Report No) ...(dated) ...(for what test) ...(to which standard)" or such similar words which stress that only the sample was actually tested. This phrase shall only be used for the purpose of product advertisement or product promotion (eg; brochures/flyers/official website). For avoidance of doubt, the statement shall not be used on the sample, packaging of the sample, items and products.
7. In the event there is an investigation from a Government Regulatory Agency concerning the Applicant's Test Report, SIRIM QAS International may disclose the information pertaining to the Test Report for purposes of such investigation.
8. In the event the Applicant is found in breach of this provision, SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries without prejudice to any other rights and remedies may take whatever action necessary including but not limited to:
 - a) Informing and placing a notice in the media;
 - b) Obtaining an injunction from Court (cost on a solicitor-client basis to be borne by the Applicant);
 - c) Refusing to accept any further Product for Testing Services from the Applicant or whosoever related to the Applicant, whether subsidiary or otherwise;
 - d) Instructing the Applicant to withdraw and recall the advertisement, statement or document in question and advertise a clarification and apology to SIRIM QAS International, SIRIM and/or other SIRIM's subsidiaries twice in a national publication of SIRIM QAS International's choice at the Applicant's sole cost; and
 - e) Informing or lodging a report pertaining the Applicant's Test Report with the relevant authorities.
9. SIRIM QAS International is committed in supporting an environmentally-friendly business practices by reducing paper consumption, therefore we do not issue any hard copy of Test Report to the Applicant. However, additional certified true copy(ies) or softcopy of the Test Report may be issued upon request by the Applicant upon payment of the relevant fee. The certified true copy(ies) or softcopy of test report shall only be given for test report issued not more than three (3) years from the date of issuance.
10. Issuance of Amendment Report due to the following reasons are chargeable to the Applicant :
 - a) Changes in details of the Applicant name and/or address;
 - b) Changes in details of the Manufacturer's name and/or address;
 - c) Changes in details of the Factory location name and/or address;
 - d) Changes in details of the model and/or type designation
11. However, issuance of Supplementary Report due to the following reasons are FOC :
 - a) Misprints and typo errors;
 - b) Missing technical information as agreed in PP1 form;
 - c) Test data not reported;
 - d) Mistake in reporting of test data
12. Corrections to report shall only be allowed if the date of issuance of the original report has not exceeded 6 months and shall be limited to a maximum 3 times, after either case whichever occurs earlier, an Amendment or a Supplementary Report shall not be issued.