



Tested by



Plastic Technology Group
Advanced Polymer & Composites Programme
Sirim Berhad

“Wood Plastic Composite” MECHANICAL PROPERTIES

No.	Property	Result	Test Method
1	Tensile Strength, MPa	21.8	ASTM D 638
2	Tensile Modulus, MPa	4,070	Test speed: 1.5mm/minute Specimen type: Type 1
3	Tensile Elongation, %	1.3	
4	Izod Impact, kJ/m ² (Notched)	2.56	ASTM D 256 Pendulum capacity: 2 J Test Method: A
5	Flexural Strength, MPa	45.9	ASTM D 790 Test speed: 5.0mm/minute Average specimen thickness: 12mm Support Span Length: 199mm
6	Flexural Modulus, MPa	5,820	
7	Water Absorption, %	0.39	ASTM D 570 Duration: 24 hours Condition: Room temperature
8	Direct Screw Withdrawal Test, N	3,133	Section 6.3 of ASTM D 1761 Test speed: 2.54mm/minute Screw diameter: 4.6mm Predrilled lead hole: 3.3mm Specimen Thickness: 12mm
9	Nail Withdrawal Test, N	317	Section 6.1 of ASTM D 1761 Test speed: 2.54mm/minute Nail diameter: 2.9mm Specimen Thickness: 12mm
10	Density, g/cm ³	1.24	ASTM D 792
11	Coefficient of Linear Thermal Expansion. (cm/cm)/°C	2.4 x 10 ⁻⁵	ASTM D 6341 Temperature range for measurement: -34.4 °C to 60 °C





Plastics Technology Group
Advanced Polymer & Composites Programme
SIRIM Berhad

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CONFIDENTIAL

EVALUATION REPORT

Title: **Evaluation of "Wood Plastic Composite"**

Report No.: PTC/ER07/441R1

Date: 5 November 2007

Project No.: P07518

Sample: "Wood Plastic Composite"

Company Name: Perceptive Profile Sdn. Bhd.

Address: PT 19251, Persiaran Batu Gajah Perdana 10
Taman Perindustrian Batu Gajah Perdana
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REPORT NO.: PTC/ER07/441R1

TOTAL NO. OF PAGES: 4 PAGE: 2

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Specifications/Test Methods:

- 1) ASTM D 638: 2003 - Standard Test Method for Tensile Properties of Plastics
- 2) ASTM D 256: 2000 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- 3) ASTM D 790: 2003 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- 4) ASTM D 570: 1998 - Standard Test Method for Water Absorption of Plastics.
- 5) ASTM D 1761: 2000 - Standard Test Methods for Mechanical Fasteners in Wood.
- 6) ASTM D 792: 2000 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- 7) ASTM D 6341: 1998 - Standard Test Method for Determination of the Linear Coefficient of Thermal Expansion of Plastic Lumber and Plastic Lumber Shapes Between -30 and 140°F (-34.4 and 60°C).

Sample Identification:

Fifteen (15) pieces of specimen having a dimension of 300 mm x 90 mm x 12 mm indicated in the application letter as "Wood Plastic Composite" were received on 3 October 2007.

Conditioning of Sample Prior to Test:

The specimens were conditioned at $27 \pm 2^\circ\text{C}$ and $65 \pm 5\% \text{RH}$ in accordance with ISO 291: 1997 (tropical environment). The conditioning period was at least 40 hours.





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Results:

“Wood Plastic Composite”

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Results (cont'd):

“Wood Plastic Composite”

No.	Property	Result	Test Method
10	Density, g/cm ³	1.24	ASTM D 792
11	Coefficient of Linear Thermal Expansion, (cm/cm)/°C	2.4 x 10 ⁻⁵	ASTM D 6341 Temperature range for measurement: -34.4°C to 60°C

