



**Plastics Technology Group
Advanced Polymer & Composites Programme
SIRIM Berhad**

(Company No. 367474-V)

Tel: (603) 5544 6049/48

Fax: (603) 5544 6039

CONFIDENTIAL

TEST REPORT

Title: Evaluation of "Rice Husk Polymer Composite"

Report No.: PTC/ER10/130

Date: 28 April 2010

Project No.: P10054

Sample: "Rice Husk Polymer Composite"

Company Name: Refec Sdn. Bhd.

Address: No. 12, Jalan Helang Bukit (Jln. 115)
Kawasan Perindustrian Kepong Baru
52100 Kuala Lumpur

Evaluated by:

Rosli Bin Ahad

Checked by:

Dr Norzalia Sulaiman



Approved by:

Dr Ahmad Fuad Md. Yusuf
Head of Programme
Plastics Technology Group



REPORT NO.:	PTC/ER10/130	
TOTAL NO. OF PAGES: 4	PAGE: 2	
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Test Methods/Specifications:

- 1) ASTM D 792 - 2000: Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- 2) ASTM D 570 - 2005: Standard Test Method for Water Absorption of Plastics.
- 3) ASTM D 638 - 2003: Standard Test Method for Tensile Properties of Plastics.
- 4) ASTM D 256 - 2006: Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- 5) ASTM D 790 - 2003: Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- 6) ASTM D 6117 - 1997: Standard Test Methods for Mechanical Fasteners in Plastic Lumber and Shapes.
- 7) ASTM D 648 - 2006: Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
- 8) ASTM D 635 - 2003: Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.

Sample Identification:

One (1) type of sample labeled as 'Rice Husk Polymer Composite', colour brown was received on 7 April 2010.

The details of samples received are as below:

No.	Approximate Dimensions	Quantity
1	465 mm x 10 mm x 8.5 mm	13 pieces
2	110 mm x 35 mm x 8.5 mm	20 pieces



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Results:

"Rice Husk Polymer Composite"

No.	Property	Result	Test Method
1	Density, g/cm ³	1.547	ASTM D 792
2	Water Absorption, %	0.51	ASTM D 570 24 hours immersion
3	Tensile Strength, MPa	33.3	ASTM D 638
4	Elongation at Break, %	1.0	Crosshead speed: 5 mm/minute Specimen type: Dumbbell Type I Gauge length: 50 mm
5	Izod Impact Strength at room temperature, J/m (Notched)	21	ASTM D 256 Pendulum Used: 2 Joule Test Method A
6	Flexural Strength, MPa	51.1	ASTM D 790
7	Flexural Chord Modulus, MPa	5,580	Crosshead speed: 3.9 mm/minute Specimen: 180 mm x 12 mm x 7.5 mm Support Span: 145 mm
8	Screw Withdrawal, N	2,167	ASTM D 6117
9	Nail Withdrawal, N	1,026	Crosshead speed: 2.5 mm/minute Profile Thickness: 18.70 mm Screw Diameter: 4.75 mm
10	Heat Deflection Temperature, °C	85	ASTM D 648 Stress: 0.45 MPa Heating rate: 120°C/hr Deflection: 0.25 mm



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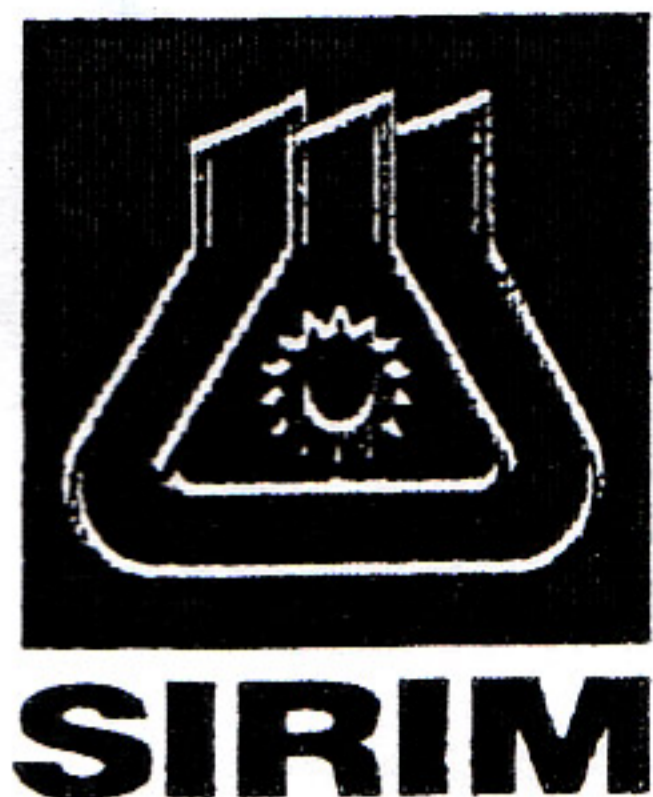
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Results:

Linear Burning Rate of "Rice Husk Polymer Composite"

Specimen	Burning		
	Time (sec)	Distance (mm)	Rate (mm/minute)
Specimen 1	Flame front does not pass the 25 mm reference mark.		
Specimen 2	Flame front does not pass the 25 mm reference mark.		
Specimen 3	Flame front does not pass the 25 mm reference mark.		
Specimen 4	Flame front does not pass the 25 mm reference mark.		
Specimen 5	Flame front does not pass the 25 mm reference mark.		
Specimen 6	Flame front does not pass the 25 mm reference mark.		
Specimen 7	Flame front does not pass the 25 mm reference mark.		
Specimen 8	Flame front does not pass the 25 mm reference mark.		
Specimen 9	Flame front does not pass the 25 mm reference mark.		
Specimen 10	Flame front does not pass the 25 mm reference mark.		





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Fax: (603) 5544 6039

CONFIDENTIAL

TEST REPORT

Title: **Compression Strength and Compression Modulus of "Rice Husk Polymer Composite"**

Report No.: PTC/ER10/140

Date: 6 May 2010

Project No.: P10207

Sample: "Rice Husk Polymer Composite"

Company Name: Refec Sdn. Bhd.

Address: No. 12, Jalan Helang Bukit (Jln. 115)
Kawasan Perindustrian Kepong Baru
52100 Kuala Lumpur

Evaluated by:

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Rosli Bin Ahad

Checked by:

.....
Dr Norzalia Sulaiman



Approved by:

.....
Dr Ahmad Fuad Md. Yusuf
Head of Programme
Plastics Technology Group



REPORT NO.: PTC/ER10/140

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Test Method/Specification:

ASTM D 695: 2002a: Standard Test Method for Compressive Properties of Rigid Plastics.

Sample Identification:

One (1) type of sample labeled as 'Rice Husk Polymer Composite', colour brown was received on 7 April 2010.

The details of samples received are as below:

No.	Approximate Dimensions	Quantity
1	465 mm x 10 mm x 8.5 mm	13 pieces
2	110 mm x 35 mm x 8.5 mm	20 pieces

Confirmation for test was received on 30 April 2010.

Results:

"Rice Husk Polymer Composite"

No.	Property	Result	Test Method
1	Compressive Strength, MPa	70	ASTM D 695 Crosshead speed: 1.3 mm/minute Specimen: 25 mm x 12.5 mm x 9 mm
2	Compressive Modulus, GPa	2.0	

