



**VC VENTURES RESOURCES SDN. BHD. (1075256-P)**  
 (Formerly known as Memang Kaya Sdn. Bhd.)  
 No. 1428, Lorong Bakau 2, Taman Industri Perabot,  
 Sungai Baong, 14200 Sungai Jawi, S.P.S Penang Malaysia  
 Tel no.: 04-5838913 Email : vcventuresresources@hotmail.com

**PLYWOOD TECHNICAL DATA SHEET  
 (PERFORMANCE CHARACTERISTIC)  
 MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD  
 MARINE PLYWOOD TO BS1088:2018**

<b>Thickness/mm (EN 324:1993)</b>	<b>Thickness</b>	4mm / 3 plies			
	<b>Min</b>	3.40	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.70
	<b>Max</b>	4.02		<b>Short Core</b>	2.60
	<b>Lay-up</b>	-   -		<b>Long Core</b>	-
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b> Bonding Class 3					
<b>Bending Strength and Stiffness</b>	F50/F40	<b>Result</b>	F = 119.188 / 69.428		
	E140/E120		E= 37173.000 / 13166.333		
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	555.546 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	R = 13 x lg (m <sub>A</sub> ) + 14				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10		1000 - 2000 Hz: 0.30		
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	λ = 0.13 W / (m.K)				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	6mm / 3 plies			
	<b>Min</b>	5.42	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.70
	<b>Max</b>	6.38		<b>Short Core</b>	4.50
	<b>Lay-up</b>	-   -		<b>Long Core</b>	0.70
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F25/F70	<b>Result</b>	F = 51.524 / 122.298		
	E120/E140		E = 12856.500 / 19001.500		
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	677.149 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times l_g (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	9mm / 5 plies			
	<b>Min</b>	8.33	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	9.47		<b>Short Core</b>	3.50
	<b>Lay-up</b>	-   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>					
	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F30/F40	<b>Result</b>	F = 50.793 / 87.418		
	E100/E120		E = 10469.500/ 13502.500		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	530.429 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times lg (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	12mm / 7 plies			
	<b>Min</b>	11.24	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	12.56		<b>Short Core</b>	2.60/3.50
	<b>Lay-up</b>	-   -   -   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>					
	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F30/F30	<b>Result</b>	F = 53.665 / 52.116		
	E90/E80		E = 10000.533/ 8199.033		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	556.168 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times lg (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	15mm / 9 plies			
	<b>Min</b>	14.15	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	15.65		<b>Short Core</b>	2.60/3.50
	<b>Lay-up</b>	-   -   -   -   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>					
	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F20/F40	<b>Result</b>	F = 42.311 / 72.955		
	E80/E90		E = 7940.933 / 10276.183		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	541.090 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times l_g (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	18mm / 9 plies			
	<b>Min</b>	17.06	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	18.74		<b>Short Core</b>	3.50
	<b>Lay-up</b>	-   -   -   -   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F30/F20	<b>Result</b>	F = 50.908 / 44.705		
	E70/E60		E = 7385.717 / 6408.867		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	543.126 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times lg (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	21mm / 11 plies			
	<b>Min</b>	19.92	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	21.16		<b>Short Core</b>	2.60/3.50
	<b>Lay-up</b>	-   -   -   -   -   -   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>					
	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F20/F15	<b>Result</b>	F = 38.222 / 44.741		
	E50/E60		E = 5039.833 / 6831.317		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	507.132 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times lg (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				



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<b>Thickness/mm (EN 324:1993)</b>	<b>Type</b>	25mm / 13 plies			
	<b>Min</b>	23.85	<b>Veneer Thickness (mm)</b>	<b>Face/ Back</b>	0.90
	<b>Max</b>	25.95		<b>Short Core</b>	3.50/2.60
	<b>Lay-up</b>	-   -   -   -   -   -   -   -   -   -		<b>Long Core</b>	0.90
<b>Dimensional Tolerance (EN 324: 1993)</b>					
<b>Length &amp; Width</b>	± 3.5mm				
<b>Squareness</b>	± 1 mm/m				
<b>Straightness</b>	± 1 mm/m				
<b>Bonding Quality/ durability</b>	Bonding Class 3				
<b>Bending Strength and Stiffness</b>	F25/F30	<b>Result</b>	F = 43.570 / 50.173		
	E60/E70		E = 6064.533 / 9145.917		
<b>Type of Glue</b>	Phenol Formaldehyde HL-4645				
<b>Release of formaldehyde</b>	Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives)				
<b>Density</b>	≥ 500kg/m <sup>3</sup>	<b>Result</b>	619.310 kg/m <sup>3</sup>		
<b>Reaction to fire</b>	D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/m <sup>3</sup> and thickness ≥ 9mm)				
<b>Water vapour permeability</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/m <sup>3</sup>				
	wet cup	70	dry cup	200	
<b>Airborne sound insulation</b>	Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula:				
	$R = 13 \times lg (m_A) + 14$				
<b>Sound absorption coefficient</b>	EN 13986:2004 +A1:2015 Tab. 10				
	250 - 500 Hz: 0.10	1000 - 2000 Hz: 0.30			
<b>Thermal conductivity</b>	Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/m <sup>3</sup>				
	$\lambda = 0.13 \text{ W / (m.K)}$				
<b>Content of pentachlorophenol</b>	EN 13986:2004 +A1:2015 section 5.18				