**VC VENTURES RESOURCES SDN. BHD. (1075256-P)**
(Formerly known as Memang Kaya Sdn. Bhd.)
No. 1428, Lorong Bakau 2, Taman IndustriPerabot,
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
# BBCC PLYWOOD TO BS13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 3.6mm / 3 plies | | | |
| | **Min** | 3.10 | **Veneer Thickness (mm)** | **Face/ Back** | 0.70 |
| | **Max** | 3.60 | | **Short Core** | 2.60 |
| | **Lay-up** | \| - \| - \| | | **Long Core** | |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F35/F25 | **Result** | F = 61.975 / 57.242 | | |
| | E140/E90 | | E = 18917.333/ 10396.650 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 518.773 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | $R = 13 \times lg\ (m_A) + 14$ | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |

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# (PERFORMANCE CHARACTERISTIC)
# MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
# BBCC PLYWOOD TO BS13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 6mm / 3 plies | | | |
| | **Min** | 5.50 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 6.00 | | **Short Core** | 4.50 |
| | **Lay-up** | \| - \| - \| | | **Long Core** | |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F15/F35 | **Result** | F = 31.723 / 61.936 | | |
| | E80/E100 | | E = 8707.867/ 11503.167 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 502.343 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | $R = 13 \times lg\ (m_A) + 14$ | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |

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# PLYWOOD TECHNICAL DATA SHEET
# (PERFORMANCE CHARACTERISTIC)
# MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
# BBCC PLYWOOD TO BS13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 9mm / 5 plies | | | |
| | **Min** | 8.50 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 9.00 | | **Short Core** | 2.00 |
| | **Lay-up** | \| - \| - \| - \| - \| | | **Long Core** | 3.50 |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F10/F30 | **Result** | F = 28.885 / 67.667 | | |
| | E40/E100 | | E = 5254.8 / 10093.817 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 545.804 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | R = 13 x *lg* ($m_A$) + 14 | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |

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# PLYWOOD TECHNICAL DATA SHEET
# (PERFORMANCE CHARACTERISTIC)
# MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
# BBCC PLYWOOD TO BS EN 13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 12mm / 5 plies | | | |
| | **Min** | 11.50 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 12.00 | | **Short Core** | 3.50 |
| | **Lay-up** | \| - \| - \| - \| - \| | | **Long Core** | 3.50 |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F20/F10 | **Result** | F = 36.267/ 33.328 | | |
| | E60/E50 | | E = 6115.917 / 6261.817 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 525.393 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | $R = 13 \times lg\ (m_A) + 14$ | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |

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# MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
# BBCC PLYWOOD TO BS EN 13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 15mm / 7 plies | | | |
| | **Min** | 14.50 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 15.00 | | **Short Core** | 3.50/2.60 |
| | **Lay-up** | \| - \| - \| - \| - \| - \| - \| | | **Long Core** | 3.50/0.90 |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F15/F30 | **Result** | F = 38.709 / 57.910 | | |
| | E15/E90 | | E = 7032.967/ 10962.500 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 513.149 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | $R = 13 \times lg\ (m_A) + 14$ | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |

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## (PERFORMANCE CHARACTERISTIC)
## MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
## BBCC PLYWOOD TO BS EN 13986:2004+A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 18mm / 7 plies | | | |
| | **Min** | 17.5 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 18.0 | | **Short Core** | 3.50/2.60 |
| | **Lay-up** | \| - \| - \| - \| - \| - \| - \| | | **Long Core** | 3.50 |

| **Dimensional Tolerance (EN 324: 1993)** | |
|---|---|
| **Length & Width** | ± 3.5mm |
| **Squareness** | ± 1 mm/m |
| **Straightness** | ± 1 mm/m |

| | | | | |
|---|---|---|---|---|
| **Bonding Quality/ durability** | Bonding Class 3 | | | |
| **Bending Strength and Stiffness** | F25/F15 | **Result** | F = 40.656/ 46.966 | |
| | E80/E35 | | E = 6178.983 / 7802.850 | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 593.734 kg/$m^3$ | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | |
| | wet cup | 70 | dry cup | 200 |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | |
| | $R = 13 \times lg\ (m_A) + 14$ | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | |
| | $\lambda = 0.13$ W / (m.K) | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | |

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# (PERFORMANCE CHARACTERISTIC)
# MALAYSIAN TROPICAL MEDIUM LIGHT HARDWOOD
# BBCC PLYWOOD TO BS EN 13986:2004 +A1:2015

| | | | | | |
|---|---|---|---|---|---|
| **Thickness/mm (EN 324:1993)** | **Type** | 25mm / 9 plies | | | |
| | **Min** | 24.5 | **Veneer Thickness (mm)** | **Face/ Back** | 0.90 |
| | **Max** | 25.0 | | **Short Core** | 3.50/2.60 |
| | **Lay-up** | \| - \| - \| - \| - \| - \| - \| - \| | | **Long Core** | 3.50 |
| | | | | | |
| **Dimensional Tolerance (EN 324: 1993)** | | | | | |
| **Length & Width** | ± 3.5mm | | | | |
| **Squareness** | ± 1 mm/m | | | | |
| **Straightness** | ± 1 mm/m | | | | |
| | | | | | |
| **Bonding Quality/ durability** | Bonding Class 3 | | | | |
| **Bending Strength and Stiffness** | F20/F30 | **Result** | F = 37.964 / 52.545 | | |
| | E50/E90 | | E = 4960.317 / 9559.617 | | |
| **Type of Glue** | Phenol Formaldehyde HL-4645 | | | | |
| **Release of formaldehyde** | Class E1 (EN 13986:2004 +A1:2015 Annex B for Phenol formaldehyde adhesives) | | | | |
| **Density** | ≥ 500kg/$m^3$ | **Result** | 526.456 kg/$m^3$ | | |
| **Reaction to fire** | D-s2, d0 (EN 13986:2004 +A1:2015 Tab. 8 for density ≥ 400kg/$m^3$ and thickness ≥ 9mm | | | | |
| **Water vapour permeability** | Interpolated from EN13986:2004 +A1:2015 Tab. 9 for density 500kg/$m^3$ | | | | |
| | wet cup | 70 | dry cup | 200 | |
| **Airborne sound insulation** | Calculated per EN 13986:2004 +A1:2015 section 5.10 using formula: | | | | |
| | R = 13 x *lg* ($m_A$) + 14 | | | | |
| **Sound absorption coefficient** | EN 13986:2004 +A1:2015 Tab. 10 | | | | |
| | 250 - 500 Hz: 0.10 | 1000 - 2000 Hz: 0.30 | | | |
| **Thermal conductivity** | Interpolated from EN13986:2004 +A1:2015 Tab. 11 for density 500kg/$m^3$ | | | | |
| | λ = 0.13 W / (m.K) | | | | |
| **Content of pentachlorophenol** | EN 13986:2004 +A1:2015 section 5.18 | | | | |