DECKING TECHNICAL DATA SHEET

PART I General Properties

1. Flexural Strength	38.0 Mpa	ASTM D6109-2010

The flexural strength and stiffness were conducted in accordance with ASTM D6109-2010 Method A. The specimen rectangular cross section was tested in flexure as a beam in a flat mode. The beam rested on two supports and was loaded at two points， each an equal distance from the adjacent support point. The distance between the loading noses is one-third of the support span. The specimen was deflected until rupture occurred in the outer fibers.

2. Tensile Strength	18.9 Mpa	ASTM D638-2010

The test was conducted in accordance with ASTM D638-2010. Five specimens were tested. The width and thickness of fiat specimens at the center of each specimen were measured. The specimen was placed in the grips of the testing machine. The speed of testing was 5 mm/min. The tensile strength was calculated by dividing the maximum load by the average original cross-sectional area in the gage length segment of the specimen.

3. Impact resistance	22.4J/m	ASTM D256-2010

The test was conducted in accordance with ASTM D256-2010. The individual determinations of impact resistance were tested under the conditions. The average lzod impact resistance of the group of specimens was calculated. Values obtained from specimens that did not break in the manner specified were not included in the average.

4. Slip resistance		Static coefficient of friction	Dynamic Coefficient of friction	ASTD D2394-2008
	Dry surface	0.31	0.23	
	Wet surface	0.37	0.34	

The test was conducted in accordance with ASTM D2394-2008. Wet and dry slip resistances were evaluated. Static coefficients of friction were determined by obtaining the force required to move the specimen from a stationary position. To accomplish this, the sliding unit was placed on the specimen and carefully lined up so the line of force coincides with a line through the center of gravity of the mass of the sliding unit. The chain was loaded at a rate of separation of the testing machine heads of 1.27 mm/min. The load required to move the sliding unit divided by the mass of the sliding unit was the static coefficient of friction. Sliding coefficients of friction were determined by measuring the average force required to maintain movement at a rate of separation of the heads of the testing machine of 51 mm/min.

5. Fastener holding test	1476 N	ASTD D2394-2006

The test was conducted in accordance with ASTM D1761-2006. The specimen was inserted with screw. The model of screw was standard 1-in No. 10-gage flathead low-carbon-steel wood screws. The specimens and screws were conditioned for at least 48 hours at a temperature of 20±3℃ and relative humidity of 65±3%. The screws were withdrawn at a uniform rate of speed by means of a testing machine and maximum load was recorded. Five specimens were tested.

6. Water Absorption	0.34%	ASTM D570-2005

The test was conducted in accordance with ASTM D570-2005. The conditioned specimens were weighed before immersion

and then placed in a container of distilled water maintained at a temperature of 23±1℃, and were rest on edge and be entirely immersed. At the end of 24 hours, the specimens were removed from the water one at a time, all surface water wiped off with a dry cloth, and weighed immediately. After immersion, the specimens then reconditioned for the same time and temperature as used in the original drying period. They were cooled in a desiccators and immediately reweighed. The water-absorption value was taken as the sum of the increase in weight on immersion and weight of the water-soluble matter.

7. Surface Hardness	**Front face**	**12966N**	**ASTM D570-2005**
	Back face	**12830N**	

The test was conducted in accordance with ASTM D1037-2006a. Section 17. The modified Janka-ball test method was used with a “ball” 11.3 mm in diameter. Three specimens were tested. The load was recorded when the “ball” had penetrated to one-half its diameter into the panel, as determined by an electric circuit indicator or by the tightening of the collar against the specimen.

8. Coefficient of linear thermal expansion	**$4.7x10^{-5}$/K**	**ASTM D696 - 2008**

The test was conducted in accordance with ASTM D696-2008. The thickness of the conditioned specimens was measured at room temperature. The specimen was mounted in a dilatometer which was then installed in the -30℃ to -28℃ environment until no further movement indicated by the measuring device over a period of 5 to 10 minutes. The other specimen was mounted in a dilatometer which was then installed in the +20℃ to +30℃ environment until no further movement indicated by the measuring device over a period of 5 to 10 minutes. Then the coefficient of linear thermal expansion over the temperature rage was calculated in accordance with the requirements in ASTM D696 Section 11.

9. Abrasion test Wear index	**101mg**	**(SGS TEST REPORT No.: GZMR110714710)**

ASTM D7031-04 Wheel: CS-10 Load: 1000g/wheel (total 2000g) Cycles: 1000

10. Slip resistance	**Catalog C（Angle of Indignation >24）**	**(SGS TEST REPORT No.: GZMR110714710)**

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11. Burning Characteristics

Tested by SGS EN 13501-1:2007 Fire classification of construction products and building elements (SGS TEST REPORT No.: GZMR110714710)

Cfl	EN ISO 9239-1e and	Critical flux^{f} ≥4.5kw/m^{2}
	EN ISO 1192502h Exposure = 15s	FS≤150mm within 20S

12. Storage in Boiling water（boil test）		**(SGS TEST REPORT No.:GZMR110714710)**
Test item	**Result**	**Requirement**
Swelling in thickness	1.90%	≤4%
Swelling in width	0.19%	≤0.7%
Swelling in length	0.08%	≤0.3%

Water update	2.20%	≤7%

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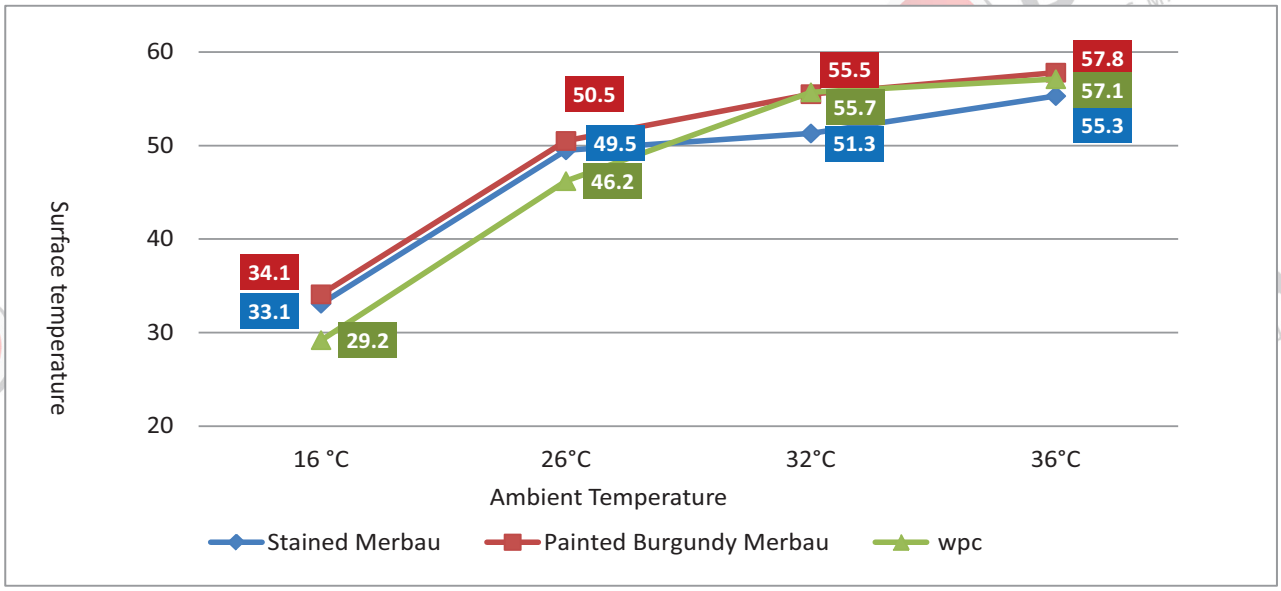
Test principles

After 5h storage in boiling water, the test pieces are immediately submerged in cold water (18°C -22°C) for 15 minutes. Later, be stored at room climate for 120 minutes.

13. Surface Temperature Comparison- WPC versus stained and painted Merbau



14. Xenon-arc Exposure (SGS TEST REPORT No.: GZMR110714710)

Test Cycle: ISO 4892-2:2006/ Amd. 1:2009(E) cycle 2

Irradiance: (0.51±0.02)W/(m2 • nm)@340nm

102 min light at (65±3) ° C BST, relative humidity not controlled

18 min light and water spray

Filter: Daylight

Total exposure period: 4000h

Samples	Appearance	△Eab*(D65,10)	Gloss change(60)
1	Slight deformation and chalking, but no crack	4.8	65%
2	Slight deformation and chalking, but no crack	5.6	50%
3	Slight deformation and chalking, but no crack	4.7	66.7%

No.	Test item	Result		
		As received	After 2000h	After 4000h
1	Flexural Strength	33.8Mpa	32.6Mpa	31.6Mpa
2	Flexural modulus	2840Mpa	2710Mpa	2620Mpa
3	Flexural strength	5.3KJ/M^2	5.2KJ/M^2	5.1KJ/M^2

PART II Typical Specific Strength Properties

1. Bending properties

Specification	Span mm	MOR Mpa	MOE Mpa	Load at break N	Extension at break mm	Extension at 50kg load mm	Extension at 100kg load mm	Loading capacity/m2	Reference loading capacity
110*25mm	300	19.5	2857.2	2973.9	8.9	1	1.88	85250.8	4262.5
	350	19.0	3022.7	2489.3	11.1	1.34	2.75	61164.5	3058.2
	400	18.9	3155.2	2169.7	17.2	1.77	3.92	46647.8	2332.4
135*25mm	300	14.9	2647.9	2801.8	5.2	0.93	1.67	66309.7	3315.5
	350	14.6	2829.8	2347.4	6.8	1.2	2.31	47619.6	2381.0
	400	14.4	2913.7	2030.4	11.0	1.64	3.45	36040.4	1802.0
140*25mm	300	13.1	2079.9	2549.4	11.7	1.07	2.08	58636.1	2931.8
	350	12.5	2145.9	2282.2	13.4	1.54	3.28	44991.9	2249.6
	400	12.2	2187.0	2031.9	15.0	1.87	4.89	35050.3	1752.5
145*30mm	300	13.5	2131.6	3926.3	6.5	0.67	1.21	86772.0	4338.6
	350	13.0	2234.0	3231.5	8.1	0.91	1.71	61214.0	3060.7
	400	12.6	2112.6	2733.4	10.7	1.3	2.52	45306.3	2265.3
146*25mm	300	17.6	27718	3576.3	6.4	0.84	1.47	78441.0	3922.0
	350	17.3	2974.1	2973.5	8.3	1.10	2.04	55902.3	2795.1
	400	17.1	31190	2627.5	10.1	1.40	2.85	43222.7	2161.1
147*28mm	300	21.1	2235.4	5407.7	9.0	0.77	1.30	118969.4	5948.5
	350	18.7	2423.1	4099.1	9.7	0.63	1.50	77296.4	3864.8
	400	19.6	2640.7	3767.3	12.1	1.00	2.14	62160.9	3108.0
150*23mm	300	19.6	3500.3	3520.1	7.2	0.80	1.42	76268.3	3813.4
	350	19.5	3640.1	2949.4	9.2	1.06	2.06	54774.3	2738.7
	400	19.2	3759.8	2532.8	11.4	1.45	2.97	41157.3	2057.9
150*25mm	300	15.9	2917.1	3212.0	5.3	0.75	1.34	69593.7	3479.7
	350	15.6	2990.2	2791.0	6.7	1.00	1.94	51832.3	2591.6
	400	15.5	3112.3	2426.8	6.4	1.37	2.78	39435.7	1971.8
146*20mm	300	22.3	3407.1	3263.0	15.6	1.14	2.28	71786.0	3589.3
	350	22.4	3475.1	2765.0	22.5	1.54	3.62	52140.0	2607.0
	400	22.2	3521.6	2158.5	26.4	2.21	5.70	39112.4	1955.6

2. Bending properties under temperature stress

Test item	Result	Requirement
Bending performance under temperature stress	7.8mm	≤10mm

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Test principles

The load applied shall be 85kg (about 25% of minimum modulus of rupture), the test duration shall be 168h (7 dag climate shall be 50℃,50% RH. The mean difference between deflection of the begging and at the end of the test may not exceed 10mm.

3. Performance under cyclic climatic stress

Test item (Freeze-thaw resistance)		Result	Requirement
Performance under cyclic climatic stress	Reduction of modulus of rapture	4.0%	≤20%

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Wood-based Panels, registered association 'Giessen, Germany' Section 3.5 EN 321:2001(E) and EN310:1993
Test principles
28 days storage in cold water(20±1 °C)→24h freezing (-15±2 °C)→72h drying (70±2°C)
Two further storage cycles shall be carried out as specified below:
72h cold water storage(20±1°C)→24h freezing (-15±2°C)→72h drying (70±2°C)
The mean reduction of modulus of rupture shall not exceed 20%.