



Siya Africa

Composite Products

Specification, maintenance
and installation guide

SIYA AFRICA TECHNICAL DATA SHEET

GENERAL PROPERTIES

1. Flexural Strength	38.0 Mpa	ASTM D6109-2010
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The flexural strength and stiffness were conducted in accordance with ASTM D6019-2010 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 laded 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 fibres.

2. Tensile Strength	18.9 Mpa	ASTM D638-2010
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The test was conducted in accordance with ASTM D638-2010. Five specimens were tested. The width and thickness of flat specimens at the centre of each specimen were measured. The specimen was placed in the grips of the testing machine. The speed of testing was 5mm/min. 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
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The test was conducted in accordance with ASTM D256-2010. The individual determinations of impact resistance were tested under the conditions. The average Izod impact resistance of the group of specimens were 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 resistance 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 centre of gravity of the mass of the sliding unit. The chain was loaded at a rate of separation of the testing machine heads of 1.27mm/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 51mm/min.

5. Fastener holding test	1476 N	ASTD D2394-2006
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The test was conducted in accordance with ASTM D1761-2006. The specimen was inserted with a screw. The model of the 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°C 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
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The test was conducted in accordance with ASTM D570-2005. The conditioned specimens were weighted before immersion and then placed in a container of distilled water maintained at a temperature of 23 ± 1°C, 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 weighted 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 reweighted. 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/K	ASTM D696-2008
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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°C to -28°C environment



until no further movement indicated by the measuring device over a period of 5 to 10 minutes. The other specimen was mounted in dilatometer which was the installed in the +20°C to +30°C environment until no further movement indicated by the measuring 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
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ASTM D7031-04 Wheel: CS-10 Load@1000g/wheel (total 2000g) Cycles: 1000

10. Slip resistance	Catalogue C(Angle of indignation >24)	(SGS TEST REPORT No.:GZMR110714710
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"Quality and Testing Specifications for Terrence Decking made from Wood-Polymer Composites (Version: 2010-10-29," Quality Association for Wood-based panels, registered association "Glussen, Germany)" Section 3.3 and DIN 51097:1992

11. Burning characteristics

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

Cfl	EN ISO 9239-1e and	Critical flux^f ≥4.5kw/m²
	EN ISO 1192502h	FS≤150MM WITHIN 20S
	Exposure= 15s	

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

13. Bending properties under temperature stress
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Test item	Result	Requirements
Bending performance under Temperature stress	7.8mm	≤10mm

"Quality and Testing Specifications for Terrence Decking made from Wood-Polymer Composites (Version: 2010-01-29, "Quality Association for Wood-based panels, registered association 'Giessen, Germany' Section 3.4 and EN 899-2:2003(E).

Test principles

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

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

"Quality and Testing Specifications for Terrence Decking made from Wood-Polymer Composites (Version: 2010-01-29, "Quality Association for Wood based panels, registered association 'Giessen, Germany' Section 3.5 EN 321:2001(E) and EN310:1993

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 (17±2°C)

The main reduction of modulus of rupture shall not exceed 20%.

Performance Comparison

Properties	Compi-Tek™	Wood	Composite	Plastic
Resists Fading	✓			
Fire Resistance	✓			
Insect Resistant	✓		✓	✓
Splinter free	✓		✓	✓
Won't split or warp	✓		✓	✓
Won't shrink or swell	✓		✓	✓
Moisture Resistant	✓		Not All	✓
Impact Resistant	✓	✓	Not All	Not All
Slip Resistant (Wet -Dry)	✓		Not All	
EZ Cut, Nailed, Screwed	✓	✓	Not All	Not All
Light Weight	✓			
Paint, Stain Adhesion	Not Needed	✓	Not All	
Low Heat Build Up	✓		Not All	

How is WPC composite decking made?

Composite decking is made from a combination of different materials (namely, wood and plastic), which are processed to give the appearance of wood. Both the wood (which consists of lumber industry by products like sawdust, chips and wood fibres) and the plastic can be made from recycled material.

Our manufacturers mix the components, often adding a pigment and preservative. The mixture is heated, formed into board-shaped lengths and then cooled. The resulting board of composite decking is usually heavier than wood. Composite decking is rot resistant, UV resistant, doesn't warp, won't give people splinters, and doesn't need to be painted, stained or sealed.

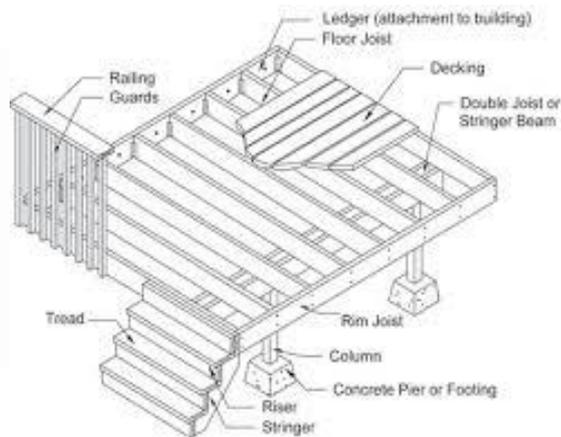
Why choose Compi-Tek?

- 1) Eco Friendly – Our decking is made from 90% recycled materials.
- 2) Non static.
- 3) No splinting.
- 4) No cracking.
- 5) 2% fading from original colour.
- 6) Doesn't warp.
- 7) Doesn't need to be painted, stained or sealed.
- 8) UV resistant.
- 9) Fire resistant

The preferred method of installation is

Thanks to our patented clip and screw system it is quick and easy to install, and has the added benefit of not causing any damage to your decking which normal screws would cause.

- 1) a picture frame design to encase the boards.
- 2) a support beams right angles to the deck at a spacing of no more than 400mm.
- 3) avoid butt joins.



Transport

Composite decking needs to be transported flat – it can't be tied on an angle. Also needs to be on edge (the narrow edge horizontal and the flat edge vertical).

Storage and Handling

Compi-tek should be stored flat, on edge, off the ground and under shelter away from. The boards require nine to ten supports along the length of the board.

Safety & Tools

Usual safety precautions used when working with wood should be applied when working with **Compi-tek**. Can be drilled, sawn, fastened and routed with normal wood working tools. **Compi-tek** requires Joists at 400mm centres and the deck should have a fall of 3mm per meter of decking along the long edge.

Ground Clearance - over damp ground with little ventilation 300mm is required. However it can be used over sealed substrates such as concrete or a waterproof membrane with as little as 50mm ground clearance.

Care and maintenance guide

- 1) General cleaning with a broom or mop will suffice for most situations.
- 2) For tougher stains dilute detergent in warm water and using a scrubbing brush clean stain until removed.
- 3) After any cleaning hose off and use a mop to remove the excess water. On a warm day the deck should dry with no water marks.
- 4) If damp leaves are allowed to build up or the deck is in a shaded damp site mould or mildew may develop. This can be treated with diluted "anti mould"
- 5) We suggest a mat under your BBQ to protect from grease stains.
- 6) Avoid dragging heavy items over the deck as it will scratch. Scratches can be dealt with by lightly sanding the deck, following the grain of the wood as described.
- 7) After any cleaning hose off and use a mop to remove the excess water. On a warm day the deck should dry with no water marks in a few moments.