

LNWPC - D06 Technical specification

1. Definition

Range of products produced from Wood Polymer Composite (WPC) which is manufactured by an extrusion process using a mix of recycled plastics and recycled hardwood fiber with various additives.

1.1 Applications

WPC is an immensely versatile material which combines the traditional appearance of natural timber with the durability and resilience of an engineered composite. Given it is available in a virtually unlimited range of colors and huge range of profile sections, the engineer can create a product or component to meet the most demanding construction, industrial or leisure applications. But it can't be use for structural purpose. Considering the real use condition, we recommend the solid decking profile for commercial application, and recommend the hollow decking profile for residential application.

1.2 Benefits

Natural appearance, long life, light weight, low maintenance, no warping, no rotting, no trip hazards, corrosion/electrical resistance, low tooling/installation cost, long service life, no splintering, UV stable. WPC products compete very favourably on a life cycle cost basis versus traditional materials due to their limited maintenance needs and long life span.

2. Raw Materials

WPC is manufactured using a composition comprising high density polyethylene, recycled hardwood fiber plus a number of additives such as coupling agents, stabilizers and antioxidants. The exact composition used for this company's products is a closely guarded secret, is unique and not available for public release. It is this highly developed, precise composition that enables the composite to deliver such strength and durability.

3. Product

The LNWPC-D06 comprises a range of low maintenance composite timber decking products that provide a comfortable walking surface for leisure, domestic or marine walkways. The boards are designed for a minimum 10 year commercial service life and feature a concealed fixing system with no trip hazards. The materials will not warp, rot or splinter like natural wood. The range of bespoke concealed fixing systems ensure consistent gapping to suit permanent or removable requirements. The range can be supplemented with hand railings and associated products, produced from the same recyclable materials.

3.1 Load and Deflection Specification (examples)

Load bearing capacity and panel deflection examples for most popular decking profiles:

Product Information	Loading (kgs) at 1% Deflection (4mm) at 400 span	Peak Load Failure (kgs) at 400 span	Working Loading (kgs) at 400 span using 2.5 factor of safety
LNWPC-D06 (146 23mm)	178	482	193

3.2 Material Specification

Characteristics	Unit	Test Refer
Tensile Strength	15MPa	BS 6399
Impact Strength	8Kj	ASTM D 1037-93
Flexural Strength	3.15GPa	ASTM D 1037-93
Flexural Strength after UV Aging (1000 hours & rain)	3.13GPa	ASTM D 1037-93
UV Aging Test	Pass	ISO 4892-2
Density	1.35 g/cm ³	ISO 9001
24 hours Water Absorption	1.07%	ASTM D684
Flammability Resistance (Standard Product)	Euro Class Dfl-S2	BS EN 13501-1
Flammability Resistance (Fire Retardant Product)	Euro Class Bfl-S1	BS EN 13501-1
Thermal Expansion	3.882 E-05 (K-1)	ISO 9001
Weather Ability	No Damage @ 100 cycles	MOAT 22
Frost Resistance	No Damage	DD CEN/TS 772-22:2006
Environmental Carbon Footprint	0.788kgCO ₂ /kg	CERAN, Carbon Footprint Report
Color Stability	± 1.8 in L*a*b*	NPL Traceable 2006 Scale
Sustainability	FSC Certification	FSC Certification (Special Order)
Recycled Content	87.5% Recycled	CERAN, Carbon Footprint Report
Stiletto heel load / penetration resistance	2.09KN	CERAN, 9.5 Steel Indenter Test

3.4 Manufacturing Tolerances

Width	+1mm	-1mm
Thickness	+1mm	-1mm
Length	+3mm	-3mm

3.5 Color and Surface Finish

The product can be made in a range of color and finishes upon request (subject to volumes.)

3.6 Fire Certificate

Standard Composition reaches Class Dfl-S2 – EN13501 Standards

Fire Retardant Composition reaches Class Bfl-S1 – EN13501 Standards

3.7 Anti-slip Certifications

BS 4592 Pendulum Test – Gained 'Low Slip potential' classification

BS4592-0, 2006 Ramp Test – Average Shod Result = 25.8 degrees, Average coefficient of restitution = 0.48.

Slip Resistance Value - BS7976 Product: LNWPC-D06 (146 23mm)			
Direction	Condition	Grooves Side	Smooth Side
Longitudinal	Dry	38	42
Transverse	Dry	63	56
Diagonal	Dry	49	46

Direction	Condition	Grooves Side	Smooth Side
Longitudinal	Wet	22	33
Transverse	Wet	45	38
Diagonal	Wet	38	40

Pendulum Test Values (PTV's)

High Slip Potential (0-24 PTV), Moderate Slip Potential (25-35 PTV), Low Slip Potential (36+ PTV).

4. Safety Data Sheet

This section provides data for protection against substances hazardous to health.

4.1 Material Identification and Use

Chemical Name: Wood Polymer Composite

Common Name: WPC, Composite Timber

Product Identification: LNWPC-D06

Uses: Construction, Leisure & Marine walkways, decking or railing

4.2 Composition

Recycled High Density polyethylene abt.30%, Recycled Hardwood fiber from furniture industry abt.70%, coupling agents, UV stabilizers, mould inhibitors. Components are extruded through die, heated and cured.

4.3 Hazard Identification

None by contact. Dust produced by cutting or grinding can penetrate pores and skin causing itching. Avoid breathing dust, skin contact or dust inhalation when cutting. People with a condition that could be aggravated by dust should avoid cutting or grinding.

First Aid procedure: Skin – shower with water and soap. Eyes – flush with sterile eye wash solution.

4.4 Product Appearance

Solid or hollow profile sections cut to specified lengths. Some sharp edges, top surface sanded for anti-slip finish. Wood smell. Not soluble in water.

4.5 Fire Fighting Measures

Standard extinguishing equipment, water, foam, A, B or C fire extinguishers. Produces black smoke while burning, carbon particles. Use air respirator.

4.6 Waste Disposal

Recyclable. Product is not considered a hazardous waste. Abide by local laws and procedures.

4.7 Handling/Cutting

Wear masks and goggles when cutting or grinding. Cover exposed parts of the body. Wear gloves when moving or lifting. Use standard wood working equipment & tools for cutting. Avoid direct fire source.

5. Product Warranty

10 Year commercial warranty, further details available on request.