

**GREEN RESOURCE MATERIAL**  
HIGH PERFORMANCE GREEN BUILDING SYSTEM

# Wood Plastic Composite , WPC

**Korean Technology**



# SPECIFICATION OF WPC BIOWOOD

PROPERTY	STANDARD	RESULTS
Density(kg/m <sup>3</sup> )	ASTM D6117 : 2016	1178 kg/m <sup>3</sup>
Shore D Hardness, median	ASTM D6117 : 2016	68
Water Absorption (%)	ASTM D6117 : 2016	After 2 Hours - 0.08%
	ASTM D6117 : 2016	After 24 Hours - 0.47%
Nail Pull Resistance	ASTM D6117 : 2016	276N
Maximum Tensile Strength (Mpa)	ASTM D6117 : 2016	6.1 Mpa
• Modulus of Elasticity (Mpa)	ASTM D6117 : 2016	1110 Mpa
Elongation at break (%)	ASTM D6117 : 2016	1.2%
Flexural Strength (Mpa)	ASTM D6117 : 2016	23.6 Mpa
• Modulus of Elasticity (Mpa)	ASTM D6117 : 2016	2251 Mpa
Maximum Compressive Strength (Mpa)	ASTM D695 : 2002a	193 Mpa
Coefficient of Thermal Expansion	ASTM D6117 : 2016	A) After a1 (40 to 70° C): 53.7 µm/m°C
	ASTM D6117 : 2016	B) a2(95 to 105°C) 81.4 µm/m°C
Izod Impact Strength (With Notched), average	ASTM D6117 : 2016	14.2 J/m
Nail Withdrawal, Verticle Withdrawal	ASTM D6117 : 2016	446 N
Nail Withdrawal, Horizontal Withdrawal	ASTM D6117 : 2016	349 N
Screw Withdrawal, Verticle Withdrawal	ASTM D6117 : 2016	2490 N
Screw Withdrawal, Horizontal Withdrawal	ASTM D6117 : 2016	1634 N
Fire Test	A) British Standard 476 : Part 6 : 1989	Class 2
	B) British Standard 476 : Part 7 : 1997	Class 2
	C) ASTM E84 : 2009c	Class B
Formaldehyde	ENV 717-1:2004	Pass

\*Lead (Pb), Cadmium (Cd), Chromium Hexavalent (Cr<sup>6+</sup>), Chromium (Cr), Mercury (Hg)

\*\*Halogenated Solvent, Aromatic Solvent

\*\*\* ND - Not Detectable

# SPECIFICATION OF WPC BIOWOOD

PROPERTY	STANDARD	RESULTS
Heavy Metal*	HS-GC-MSD	N.D***
Solvent**	HS-GC-MSD	N.D***
Linear Thermal Expansion Coefficient	ASTM D6117 : 2016	27.7µm/m.°C
Compression Strength (at 50% deformation)	ASTM D695-08	181
Compressive Strength	ASTM D6117 : 2016	24.6 Mpa
Vicat Softening temperature	ASTM D6117 : 2016	84°C
Mechanical fastener holding test	ASTM D1037-06a Section 16	777.0N
Impact resistance	ASTM D4495-00(2005)	47J
Specific gravity	ASTM D2395-07a Method A	0.7415
Moisture content	ASTM D1037-06a section 6	0.27%
Total Volatile Organic Compounds Emissions	ASTM D5116-06	Pass
Formaldehyde Emission Rate	ASTM D5116-06	Pass
Phenylcyclohexene Emission Rate	ASTM D5116-06	Pass
Total Phthalates Emission	ASTM D5116-06	Pass
Total Particles Emission	ASTM D5116-06	Pass
Ignitability	AS / NZS 1530.3:1999	13 / 20
Spread of Flame	AS / NZS 1530.3:1999	0 / 10
Heat Evolved	AS / NZS 1530.3:1999	1 / 10
Smoke Developed	AS / NZS 1530.3:1999	7 / 10
Against Subterranean Termite	ASTM D3345-08	PASS