AWP ANGKOR WOOD PLASTICS
BEST CHOICE FOR MODERN ARCHITECT

WPC DECKING

Wood-plastic composites (WPC) are a new type of environmentally friendly composite material that combines the advantages of both plant fibers and thermoplastics. The following is a detailed analysis of its components:

☑ T01- Co-extrusion Solid Decking

☑ T02- Co-extrusion Solid Decking

☑ D01- Co-extrusion Decking

☑ D02- Co-extrusion Decking

Basic ingredients

Wood-plastic composite materials are mainly composed of the following two basic components:

1. Plant fiber: typically accounts for 30%-40%, including:

☑ Wood flour (particle size 80-200 mesh)

☑Bamboo powder

☑rice husk

☑Straw and other agricultural waste

2. Thermoplastics: typically account for 60%-70%, mainly including:

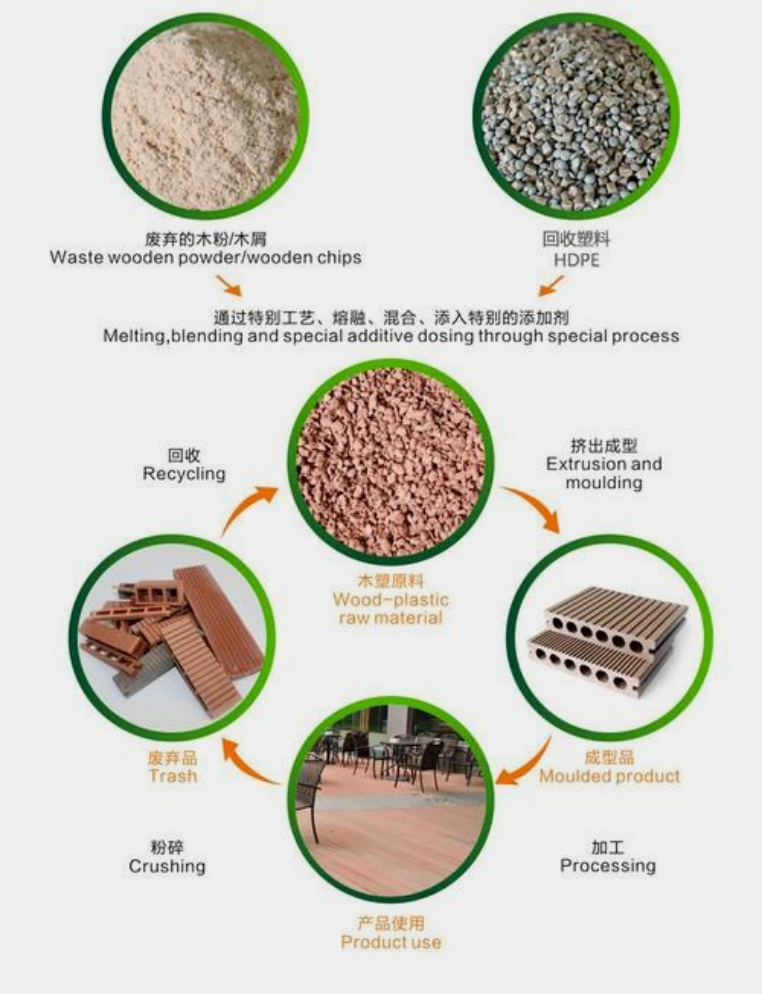
☑Polyethylene (PE)

☑Polypropylene (PP)

☑Polyvinyl chloride (PVC)

☑Polystyrene (PS)

These components are combined through processes such as melt extrusion, molding, or injection molding to form a new type of material that has the appearance of wood and the properties of plastic.



Additives and Reinforcing Materials: To improve performance, WPC formulations typically include the following functional additives:

Additive type	Main ingredients	Functional effect
Interface modifiers	Maleic anhydride-grafted polymers (such as MAPE)	Improves wood-plastic interface compatibility and increases tensile strength by 15%-30%.
Heat stabilizer	Calcium-zinc composite stabilizer	Inhibit thermal degradation during processing
UV resistant component	Nano-titanium dioxide (TiO_2) with hindered amine light stabilizer (HALS)	Delaying yellowing during outdoor use
Flame retardant system	Aluminum hydroxide (ATH) and phosphorus-nitrogen flame retardants	Meets the B1 fire resistance standard for building materials
Foaming regulator	AC foaming agent and zinc oxide	Controlled microporous structure, density 0.8-1.2 g/cm^3

Lubricant	HDPE-based: 4%-5%, PP-based: 1%-2%, PVC-based: 5%-10%	Improve processing fluidity.

The co-extruded layer is a polymer protective shell formed on the surface of wood-plastic composite flooring through a high-temperature extrusion process. It is typically 0.3 mm thick and uses materials such as HDPE/PP. It is bonded to the core layer (a mixture of wood powder and plastic) through a 360-degree full-wrap method.

Its structure is similar to a sandwich, but the protective layer and the core layer are formed simultaneously, eliminating the risk of separation.

Performance Advantages:

Weather Resistance: The co-extruded layer blocks 99% of UV rays, resists acid rain and seawater erosion, and has an outdoor service life of 10-15 years.

Physical Properties: Abrasion resistance is increased by 5 times, and scratch resistance is significantly enhanced, making it suitable for high-traffic areas.

Easy Maintenance: With a water absorption rate of only 0.2%, stains can be wiped clean with a single touch, eliminating the need for regular application of protective agents.

Differences in component ratios for different applications:

1. Outdoor applications (e.g., flooring, fencing):

Typically uses PVC-based materials (excellent weather resistance)

Wood fiber content 40%-60%

Added with more UV-resistant components and flame retardants

2. Processing performance: Combines the easy molding properties of thermoplastics with the secondary processing properties of wood (can be cut, glued, and painted)

3. Durability: Insect-resistant, aging-resistant, low water absorption (only 1/10-1/5 of wood), reusable

4. Environmental characteristics: Utilizes waste plastics and agricultural waste, contains no formaldehyde or other harmful substances, 100% recyclable

Quality component detection methods:

1. Thermal analysis methods analyze the composition of materials by measuring changes in mass or heat flow during the heating process:

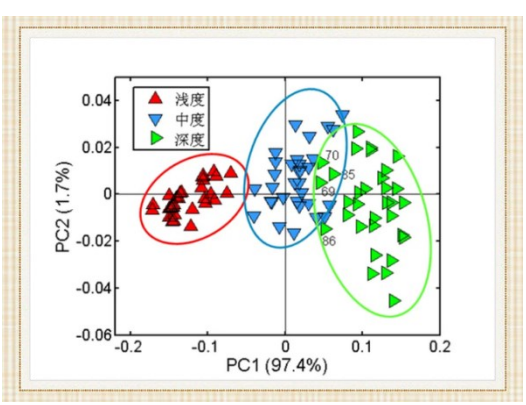
Thermogravimetric analysis (TGA): determines the decomposition temperature and residue content of materials, suitable for quantitative analysis of fillers and carbon black.
Differential scanning calorimetry (DSC): detects glass transition temperature, melting point, etc., to assist in qualitative analysis.

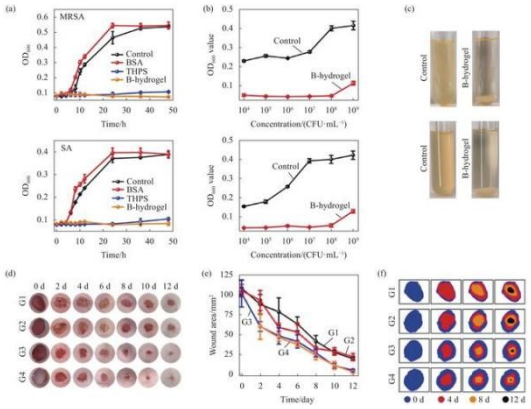
1. Spectroscopic Analysis:Utilizing the interaction between matter and light to resolve composition: FTIR (Frequency-to-Infrared Spectroscopy): Identifies functional groups and chemical bonds in polymer materials.⁴ X-ray Fluorescence Spectroscopy (XRF): Rapidly qualitative/semi-quantitatively analyzes elemental composition.⁵

2. Chemical-Mass Spectrometry:Gas Chromatography-Mass Spectrometry (GC-MS): Separates and identifies volatile components such as additives.⁵ High-Performance Liquid Chromatography (HPLC): Analyzes additives with high boiling points and poor thermal stability.⁵

3. Other Methods:Elemental analysis (e.g., EDS): Determines the elemental distribution in materials.³ Nuclear Magnetic

Resonance (NMR): Resolves polymer chain structures.⁵ In practical testing, multiple methods often need to be combined.





Wood-Plastic Composite Board (WPC): A Magical Material Combining the Advantages of Wood and Plastic. With its unique composition and superior performance, it has been widely used in architectural decoration, landscaping, transportation, and other fields, becoming an ideal alternative to traditional wood and plastics. As technology continues to advance, its component ratios and additive systems are constantly being optimized to meet the specific needs of different application scenarios.

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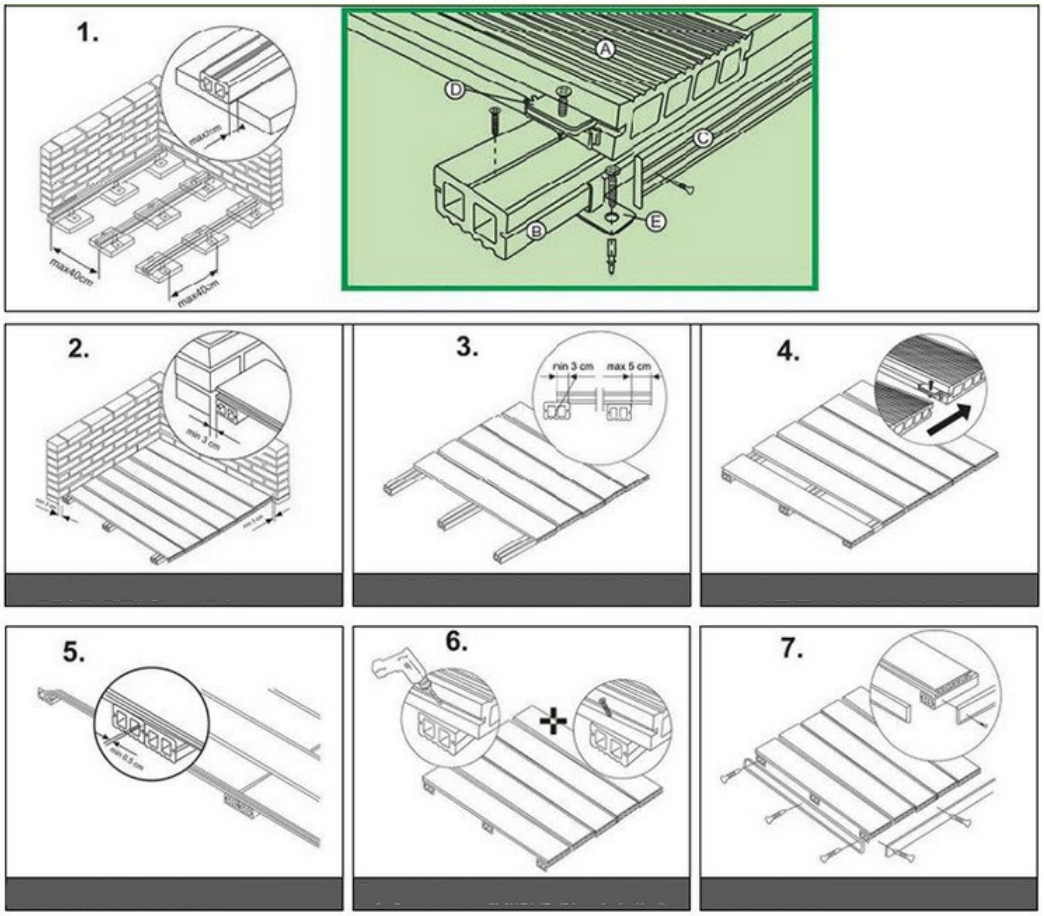
Install Instruction



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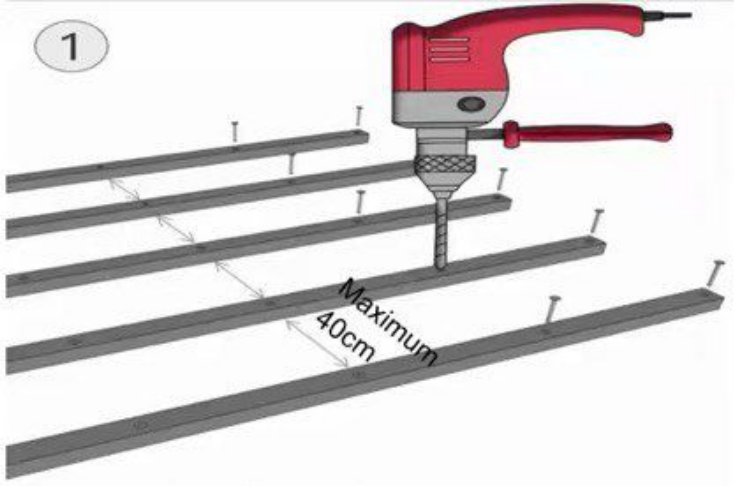
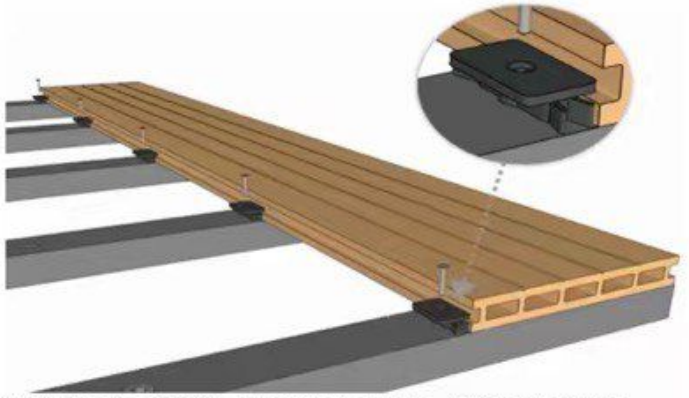


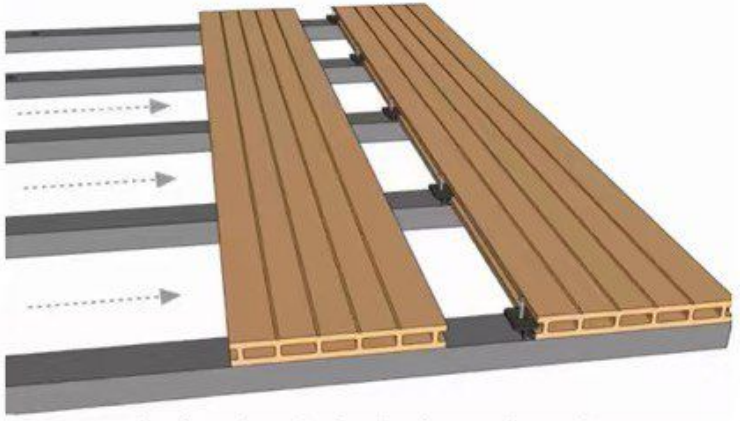
1.Place the keel on a flat ground, the maximum distance between the keels is 40 cm. Drill holes in the keel. If the ground is not level, it needs to be raised to be level.

2



2.Fix the keels with expansion screws. Drill holes in the keels to install and fix the clips. The WPC keels cannot be directly inserted the screws, so it is necessary to drill holes in the keels using an impact drill firstly.

3



3.Between the floor boards, fix the clips with metal screws.

4

4.A distance of 5mm is needed between each floor board for outdoor drainage and ventilation. It can also avoid floor borads being compressed due to thermal expansion and contraction.

5

5.Install the floor boards one by one until the entire installation is completed.Leave a distance of 5-10mm at the end of the floor and at the connection points.

Install edge coner around the floor, it will look more womderful.