



DUNEST s.r.o.

Manufacturer of Composite Wood-Plastic
(WPC) Materials and Profiles



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DUNEST s.r.o. is a manufacturer of **WPC (Wood Plastic Composite)** materials, also known as wood-plastic. These materials are created by combining wood fibers and plastic.

The production process begins with selecting raw materials - wood fibers and plastic, which must be carefully sorted and processed. The wood fibers are typically **natural organic materials**, while the plastic may be recycled or another eco-friendly variant.



These materials are mixed into **granules** and then extruded into desired **shapes** such as **decking boards, fence slats, and other profiles**. The resulting material combines the properties of both wood and plastic, making it **resistant** to moisture and UV radiation, colorstable, and durable/suitable for applications like **decking, cladding, fencing, and outdoor furniture**.

WPC

Wood Plastic Composite WPC is a composite material made from **wood and polymer**. This technology was invented over twenty years ago in North America and is now commonly used for outdoor flooring, decking, fencing, and cladding panels. The aim of WPC is **to eliminate all the undesirable properties of wood** (rotting, mold, insect damage, discoloration, warping, cracking, splintering, and the effects of sun, frost, and water) while **retaining the visual appeal of natural wood**.

WPC is an engineered material composed of **high-quality wood flour combined with a polymer matrix**.

Due to natural wood particles, **WPC products tend to lighten slightly under sunlight over a few weeks or months**. This effect is uniform and permanent, similar to any wood product.



In our production, **we offer various ratios of wood and polymer content**, depending on customer requirements and the intended application:

- **65% wood / 35% polymer** → high level of natural wood imitation (texture, appearance, feel), while maintaining good durability and lifespan
- **50% wood / 50% polymer** → increased plasticity, enhanced mechanical and weather resistance, longer lifespan, and minimal water absorption

The main polymers used in WPC materials are **HDPE** (high-density polyethylene), **PP** (polypropylene), and **PVC** (polyvinyl chloride).

HDPE, for example, offers significantly better resistance to temperature fluctuations—especially frost—which positively affects the overall durability of the WPC material.



Product Types

- **Solid and hollow** („chambered“) decking boards.
- **Hollow boards** are popular for their lower material usage and breathability.
- **Surfaces vary**: small grooves, large grooves, smooth, sanded, or embossed woodgrain textures.
- The more wood content in the WPC, the more natural the surface appears.

Applications of WPC Profiles

- **Chambered Profiles**: Ideal for ventilated decks of simple shapes without constant moisture exposure (e.g., pool or pond decks). Provide comparable performance to solid profiles in such cases.



- **Solid Profiles**: Best for areas near pools, ponds, and spas. Can be cut at angles or shaped without needing finishing trims.

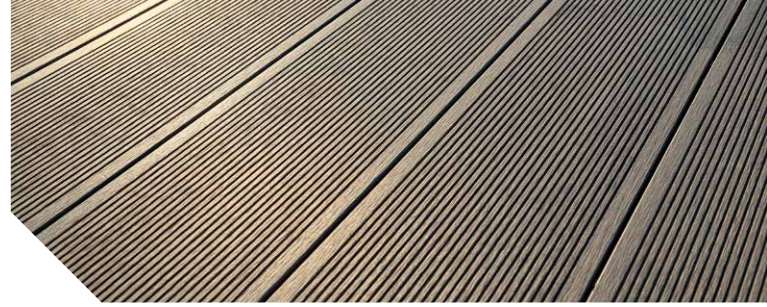


Production technology

- Twin-screw extruder: Used globally for all plastic compound processing. Material feed speed determines production speed.
- Granules are heated and mixed by the screws.
- The desired profile is then extruded through a die.
- A traveling saw follows the material flow to cut lengths continuously and precisely.



DECKING BOARDS



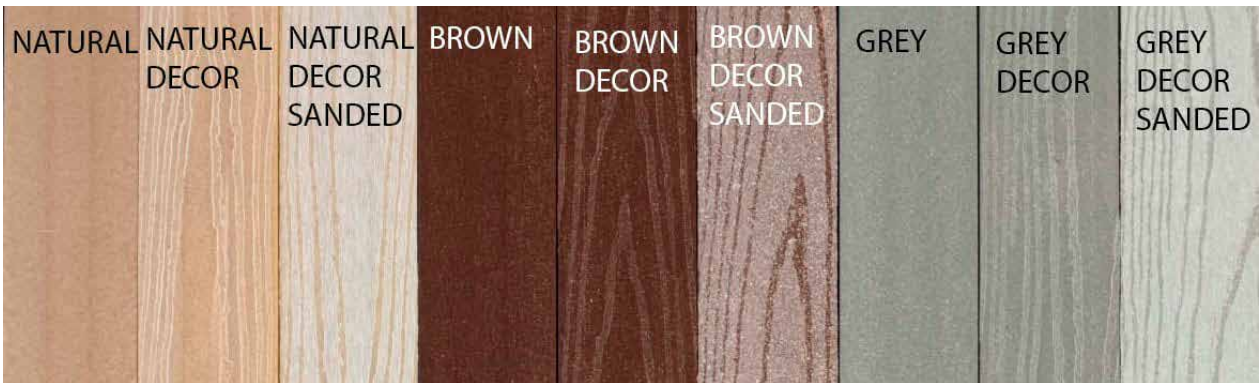
Tongue-and-Groove

Size: 140 × 30 mm
Weight: 3,25 kg/m
Max Length: 4 m



Groove-to-Groove

Size: 150 × 30 mm
Weight: 2,20 kg/m
Max Length: 4 m



USES OF DECKING PROFILES

WPC (Wood-Plastic Composite) decking profiles are a versatile construction material used **not only for terrace flooring**, but also in other structures thanks to their **strength, durability, and aesthetic appearance**.

Decking Floors

(Primary Use)

- Surfaces for terraces, balconies, and loggias.
- Resistant to moisture, UV rays, frost, and heat.

Massive Fences and Gates

- Hollow or solid decking profiles can be used as infill panels.
- Combine with metal frames for strength and modern appearance.

Raised Garden Beds

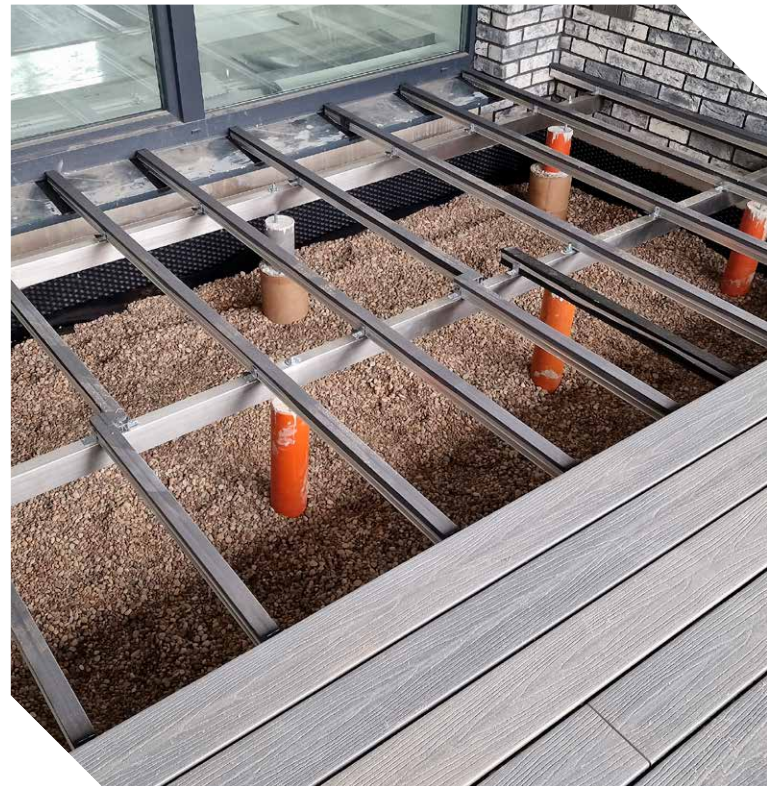
- Resistant to rot and moisture—ideal for direct soil contact.
- Safe for growing food (no chemical treatments like pressure- treated wood).
- Elegant wood imitation with no painting needed.
- Modular and easy to assemble or expand.

Advantages:

- **Anti-slip surface, safe even in rain.**
- **Easy maintenance - just water and a brush.**

Use Areas in Practice:

- **Gardens, urban community gardens, school plots.**
- **Raised beds on terraces and courtyards.**
- **Mobile beds (on wheels or legs).**

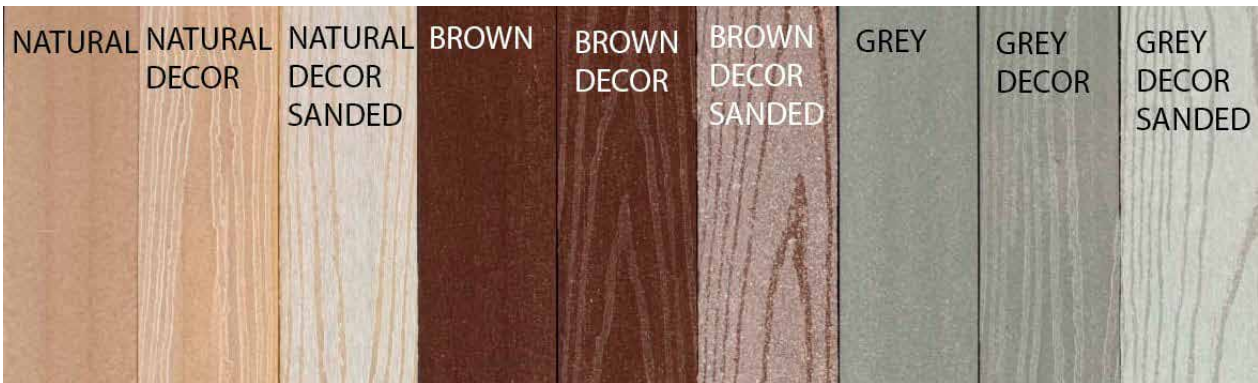


FENCE SLATS

Fence Panel

Size: 70 × 15 mm
Weight: 1,25 kg/m
Max Length: 4 m

Size: 90 × 15 mm
Weight: 1,60 kg/m
Max Length: 4 m



USES OF FENCE PROFILES

WPC (Wood-Plastic Composite) fence elements are primarily used in practice for building fences and enclosures, both in residential and commercial areas.

Residential Fencing

- Modern look, various colors and wood-like finishes.
- Low maintenance—no painting or coating required.
- Weather-resistant: won't warp from rain, snow, or sun.



Industrial and Commercial Fencing

- Long lifespan and resistant to vandalism and harsh conditions.
- Can be combined with metal frames or posts for strength and security.

Landscape Design

- Garden dividers and decorative panels.
- Partition walls between properties.
- Enclosures for pets.

TRIMS AND BEAMS

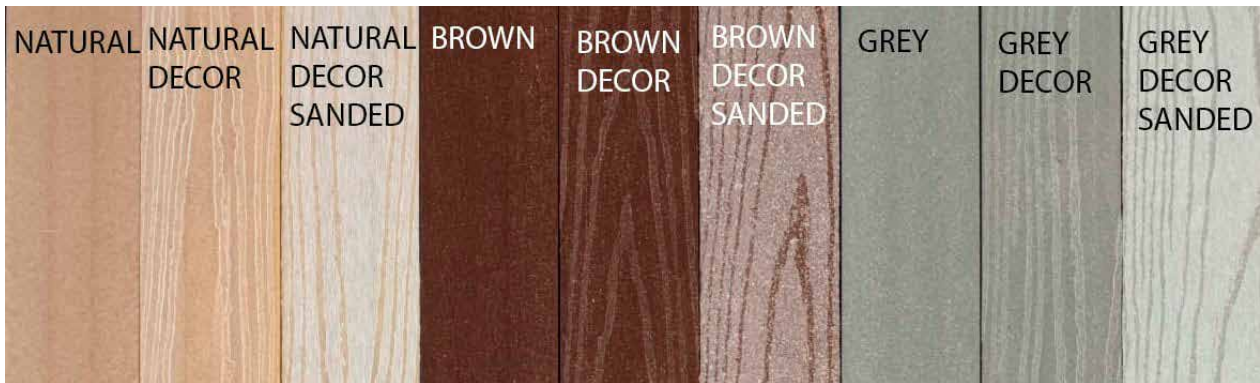
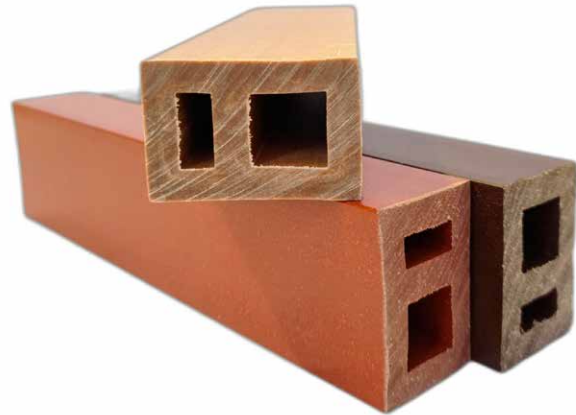
Finishing Trim

Size: 60 × 15 mm
Weight: 0,85 kg/m
Max Length: 4 m



Structural Beam

Size: 60 × 40 mm
Weight: 2,10 kg/m
Max Length: 4 m



USES OF STRUCTURAL BEAMS

The WPC **finishing strip** 60 × 15 mm and the **support beam** 60 × 40 mm are important structural and design elements in the installation of WPC systems.

Deck Substructures

- Serve as base frames under decking boards.
- Moisture-resistant, won't rot or deform—unlike wooden frames.
- Allow drainage and proper ventilation under the deck.

Raised Bed Frames

- Used as structural supports (e.g., corner posts or connection beams).
- Enhance strength and resist soil pressure.

Reinforcement for Fences and Gates

- Used as inner structural or frame profiles.
- Ideal for mounting WPC slats to metal frameworks.

Construction of Benches, Planters, and Garden Accessories

Installation Notes:

- Lay on firm, flat base (e.g., concrete, paving, or plastic pads).
- Fasten with stainless steel screws; rubber pads recommended for expansion gaps.



USES OF FINISHING TRIMS

Deck Edge Finishing

- Covers cavities in hollow decking boards.
- Protects edges from mechanical damage and dirt.
- Aesthetic finishing for visible terrace areas.

Raised Bed Edging

- Top edge cover for a smooth and safe touch.
- Enhances appearance and protects against water ingress.



Stair Edge Covering

Framing Fence Panels

- Acts as a decorative or framing element.
- Can hide joints between WPC profiles.

Mounting:

- Can be screwed directly into WPC or supporting beams.
- Outdoor adhesives can be used for seamless, screw-free finishes.

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