

# TECHINICAL SPECIFICATIONS DATA SHEET: WPC

GWC brings WPC which is made of ISO 50001:2011 & QM system DIN EN ISO 9001:2008 certified raw materials from quality- oriented Dutch company- JELUPLAST.

JELU has experience in processing natural fibers that dates back over one hundred years. Several years ago, they developed a WPC that can be processed industrially. Under the JELUPLAST brand, they offer a range of premixed compounds with clearly defined qualities. It goes without saying that they also manufacture custom compounds that are optimized for special applications according to customers' needs.

The Manufacturing Company is GBCI (Green Building Certificate Institute) ISO 9001:2000 SINCE 2004 certified.

Wood plastic composite (WPC) has already proven optimal performance in many applications because of its extraordinary properties:

Mould-able like plastics

Firm like wood

Not electrically conductive

Inexpensive like plastics (basic compound without additives)

Fulfils all important standards for toys and foods

Improves carbon footprint

Reduces environmental impact due to plastics

## Benefits of WPC Products

WPC can be used to manufacture products that have the properties of both wood and plastics.

WPC properties can be influenced by means of additives and can be optimally adapted to the respective application.

PE from sugar cane as well as TPS are more expensive than common plastics. The addition of wood reduces the price.

Since JELU WPC consists up to at least 50% of the renewable resource wood , the material contributes to a better ecological balance and improves a product's carbon footprint.

WPC mixtures that consist wholly of renewable resources. This material improves the ecological balance even more and optimizes a product's carbon footprint.

Products made from WPC reduce the environmental impact caused by plastics.

The wood we use for our WPC granulates comes exclusively from certified, regional and sustainable forestry, something which can also be advertised accordingly.

## Product features

- Weathering of the surface
- WPC quality test: Loading capacity, stability, etc.

## Weathering / Surface disintegration

To attain the characteristics of the barefoot-friendly and non-slippery decks, the surface is roughened by brushing. Due to this, the WPC-deck acts in its smallest particles, the open wooden fibers on the surface, in the same way as nature does. In the weathering process, the open wooden structures on the surface are transformed into cellulose. This optical color change stops after about half a year when the patina has been fully formed. This elegant cellulose patina itself then acts as natural protection adding to the UV stabilization. Single particles can dissolve from the surface. The decks functionality is not altered by that. During production, organic colour pigments and UV protection measures are built in. Slight color changes and shades are desired, and emphasize the natural wooden appearance. They are not a reason for complaint.



*New brown deck*

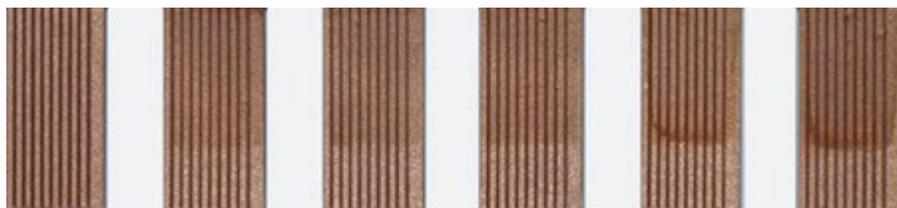
*After 1-6 months laid outside*

*Deck after around 5 years*

Long-term color development made visible through lab test

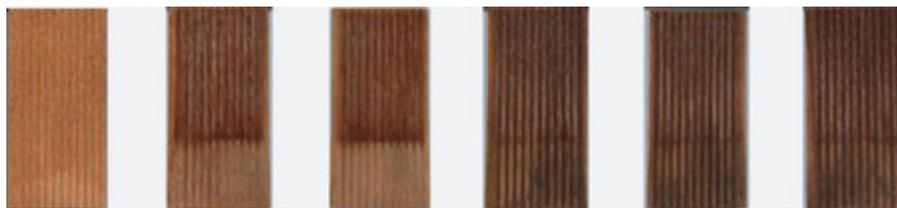
By using the innovative product mixture the appearance of WPC decks hardly changes. They only grey very slightly. Artificial weathering tests were performed together with the university of Göttingen (rapid weathering in accordance to prEN 927-6). In these, high-quality tropical wood was compared to a standard WPC profile. This lab test simulates the optical change within a timeframe of 5 to 6 years. The short-term weathering shows the obvious changes in color in both samples. During intensive UV radiation in combination with water being slapped against the decks, the lower third of the samples were covered. The washing out of the wooden contents explains the formation of a stain rim.

## WPC decks – standard mixture



Start      Around 1 year,....2 years,.....(...) around 5 years

## High-quality tropical wood (Bankirai)



The test simulates a time span of between 5 to 6 years.

WPC quality test: Loading capacity, stability, etc.

The WPC decks' stability is crucial for its daily use as a floor element.

WPC decks excelled in the strict quality tests for the quality community of WPC-producers. 'SEMI- SOLID' was tested for the following attributes:

Features	DIN	
Tensile strength	53455	30N/mm <sup>2</sup>
Strength Elastic modulus	53455	5000N/mm <sup>2</sup>
Resistance to bending	53452	48N/mm <sup>2</sup>
Bending Elastic modulus	53452	4000N/mm <sup>2</sup>
Shock viscosity	3452	6,4 KJ/m <sup>2</sup>
Density	53479	1,20 g/cm <sup>3</sup>

The technical data are ascertained results from a 70 x 17 mm WPC deck. The results are to be seen as reference values.

Theoretical and practical results and values differ. Therefore we performed a test applying a load to laid decks. This test shows the load carried by a single deck after the deck has been properly laid.

The surface load for our WPC decks can exceed far more than 1.5 tones per square meter when they have been laid professionally and the load is spread evenly.