

NOVOWOOD: WOOD PLASTIC COMPOSITE

Novowood is a wood plastic composite for exteriors, made by hot extrusion mixing natural wood fibre (approx 65%), high density polyethylene (HDPE approx 25%) and additives (approx 10%). Its formula was developed in collaboration with the Department of Material Engineering of the University of Ferrara, to satisfy performance and quality requirements. Wood plastic composite (WPC) can be used to make extrusions of various sizes, shapes and colours. This particular type of material can be applied to many different areas thanks to its durability in external environments.

APPLICATIONS IN THE ENVIRONMENT



Novowood products are used for exterior coverings like flooring, wall cladding and horizontal or vertical sunshades (brise soleils) in the marine, industrial and civil sectors.

It is recommended to always evaluate any particular issues, areas of application and the loads of specific projects.

PROPERTIES



The intrinsic properties of wood plastic composite involve the presence of polymers, rendering it susceptible to thermal expansion with an index equal to $0.04 \text{ mm/m}/\Delta t$ ($^{\circ}\text{C}$). This is usually compensated by proper planning and a suitable installation of the elements.

It is advisable to lay the material with an external temperature that isn't inferior to $+8/10^{\circ}\text{C}$.

A slight curve of the profiles is considered normal because it is due to the storage, therefore it can't be caused by a flaw of the material. The linearity of the profiles will be achieved after a proper fixing with clips, because of the natural relaxation of the composite material

Please refer to the installation manuals for specific applications.



Wood plastic composite, despite its water resistance characteristics superior to natural wood, has a soaking coefficient equal to 1.2% for gloss surfaces and 3.5% for brushed surfaces. Therefore, constant contact with water must be avoided, including the substructure, and an airspace must be left in the underside to ensure ventilation and to encourage drying.

In situations particularly susceptible to moisture, metal substructures must be used and ventilation grids installed. For hollow profiles, water stagnation inside the profiles must always be avoided. In the case of cross-laying of the substructure with respect to the slope, it must be lifted by applying rubber pads, sheets or adjustment feet underneath it, creating an even floor and allowing water to drain freely avoiding any deposits against the substructure.



We recommend you use only plastic snow shovels to avoid scratching the coating. Do not remove ice with an ice pick, use instead ecological salt; saline spots might appear which are easy to remove. Under special conditions such as snow, ice or high humidity, the use of solid profiles is highly recommended.



The WPC products do not contain heavy metals or other substances harmful to the environment. The material is highly resistant to external agents. However, avoid strong oxidants such as industrial bleaches or acids and organic diluents (for example ethanol, acetone, xylol, hydrocarbons, etc.).

Pay attention to the use of gasoline on the terrace or alcohol to light the barbecue: these substances can attack the material.



Novowood wood plastic composite is in the European class of resistance to fire Cfl-S1 determined by the Ministerial Decree of 15 March 2005 (Official Journal no. 73 of 30 March 2005) and Class 1 of the Italian legislation. ref. Integr. Ministerial Decree of 16 February 2009 Art. 4, paragraph 1.



Wood plastic composite is chromatically stable thanks to pigments and additives present in the polymeric compound. There is only a slight variation in tone of about 7-10% due to the presence to 2/3 of natural material such as wood flour containing "tannin" that is gradually released, sometimes highlighting small stains on the surface. This phenomenon usually stops within the first months without needing any kind of treatment, and you can simply "wash away" the rainwater from the wood composite. It is possible to accelerate the aforementioned process with the use of hot water and "WPC Cleaner" (supplied on request). A slight variation in colour tone is also possible in the different production batches, although usually single deliveries taken from individual batches are made.

STRESS LOADS



Laboratory tests have shown Novowood's resistance to various mechanical tests, this information can be found in the material technical data sheet.

Decking being a system composed of the substructure and the floor, the resistance of the flooring is directly related to the installation spacing of the substructure. With a spacing of 350 mm the resistance of the flooring is 500 kg/sqm as set by the regulations for public environments. However the WPC product cannot currently be used for structural parts in buildings, but it is used as covering material.

The 350 mm spacing of the runners must never be exceeded. If the flooring is subject to high crowding and/or is applied in public access areas, the spacing of the runners should be reduced to 300 mm.

For hollow decking, as far as possible, limited use must be made of pointed and/or sharp furnishings.

Sunshades The sizing of the bearing substructure, fixings and lights must be assessed by the designer contracted by the client in relation to the specific project. Some general measures for a correct application are contained in the specific technical guide for Novowood sunshade profiles.

Covering Like for the decking, the resistance is related to the spacing of the bearing substructure. Usually, the strut distance is about 500 mm, however, it must be assessed in each case by the project designer in relation to the specific project. Some general measures for a correct application are contained in the specific installation guide of the Novowood system wall covering.

MAINTENANCE AND CLEANING



Novowood wood plastic composite does not require special maintenance and it is easy to clean thanks to the studied combination of fibres, polymers and additives. It is always advisable to wash the material every 30 days with cleaning products (supplied on request) and, in order to maintain the warranty on the product, at least once a year.

If you use the pressure washer, keep the nozzle at a distance of 30 cm from the floor. In areas particularly susceptible to the formation of stains and marks (bars, restaurants, etc.), we recommend the application of the "WPC Shield" protective product (supplied on request) in order to reduce the absorption of stains from external agents.

In the case of stubborn stains, a special spray "WPC stains remover" can be used (supplied on request). Although the product is resistant to fungi and moulds, sometimes some organic material deposits may form on the surface and with the passage of time may give rise to localised moulds.

For removing moulds, algae and fungi use hot water and "WPC Cleaner" (supplied on request). If moulds, algae and fungi have settled for a long time, often the material needs further treatment. However, the risk can be reduced by keeping the products clean, dry and ensuring good ventilation.

In order to remove localized stains it is advisable to use a special spray "WPC stains remover" (supplied upon request) which may produce a slight hue change in the intervention area.

In order to substitute and/or repair accidentally damaged elements you must follow the indications of the installation manuals which are available on the producer website. For the localized removal of decking staves with clips of 5 or 7 mm, unscrew the fixing screws on the right and left of the profile, let it slide on the adjacent profiles and remove the stave. Repeat the operation at the contrary for the new fixing when the substitution has been made (for further information please contact Novowood technical office).

STORAGE AND HANDLING



The staves and substructure are supplied packaged in plastic wrap. The product should be stored in a sheltered, dry and ventilated area to avoid humidity stagnation. Extended covering can cause the formation of spots on the staves.