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REGULATIONS NOISE BARRIERS

Due to the strong increase of traffic noise in rural areas, it has become necessary to set up noise reducing means like noise barriers or sound proofing screens around (high)ways. Platowood timber is a renewable resource with a beautiful natural appearance that is an excellent material for building noise barriers. The unique Platowood process ensures the timber is refined in an environmentally safe, clean and sustainable manner that enhances the dimensional stability and sustainability of the timber. The temperature and soundproofing values are equally superior to those of untreated timber. The noise barrier can be constructed with solely Platowood timber, but incorporating other materials is also possible. If necessary, the Platowood noise barriers can also be supplied in measurements and lengths deviating from the standard assortment.

Below, we describe aspects that are relevant for the application of Platowood noise barriers.

Design

When designing and producing a noise barrier, there are rules and regulations to be considered (e.g. GCW). Some important points to consider:

- Avoid horizontal seams, unless measures are taken to avoid waterlogging or capillary water suction. Lengthwise, a tolerance of ± 5 mm is allowed.
- Width of the sections may be limited; according to the GCW, the maximum allowed width of the boards is 160 mm.
- Boards should preferably be connect by brass and groove, where the length of the brass should be 10% of the active width of the section. The connection is also allowed to be made by using a loose spring.
- The forming of sound gaps needs to be prevented.

Fixing materials

Stainless steel fasteners and hardware fittings should be used, such as AISI/SAE 304 or AISI/SAE 316 graded steel. In the vicinity of saline water, the use of AISI/SAE 316 graded steel is highly recommended.

Finish or natural

Platowood Color allows you to finish the sound barrier in a color of choice. It is recommended to add a final coating layer to the panels at the project location with the color components of Platowood Protect SC or Color. If you so desire, Platowood can supply you with an additional amount of color component for touching up and finishing screw holes. If needed, we also offer panels treated with an anti-graffiti coating. For more information regarding the maintenance of Platowood Color products, please refer to the accompanying maintenance guidelines.

Platowood timber can also be applied without a finishing agent; under the influence of sunlight, weather and wind, it will then age rapidly and evenly in a natural way. This ageing does not affect the durability of the wood, but rather it will add a silver-grey hue to it. During the period in which the ageing takes place, the surface could appear somewhat stained. This appearance could be amplified by dirt and / or aerosols attaching to the surface of the wood.
In order to have the ageing process take place more gradually, the wood can be supplied with a pre-aged finish, named Platowood Weathered Color. The panels will have an aged appearance from the start; this finish will slowly degrade as the timber underneath it naturally ages. In this way, the visual transition stage of the brown timber to a weathered façade is overcome

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Mechanical properties

Due to the Platowood process being executed at relatively high temperatures, physical and mechanical properties of the timber can be strongly influenced. A number of physical and mechanical properties decrease; among other things unit mass, bending strength, break impact energy and tensile strength. Other properties increase; bending rigidity, hardness and machinability.

At this time, we are not (yet) capable to supply thermally modified timber sorted by strength, as the existing regulations are not yet applicable to thermally modified timber. Hence we are (as yet) unable to supply thermally modified timber that has been marked with a CE-label for construction purposes. When using Platowood timber, it is therefore advisable to determine which forces might play a part in a construction, and to which degrees these forces, such as wind load, should influence construction. This should be taken into consideration with the application of Platowood products.

The table below presents some relevant properties of Platowood Spruce.

		Platowood Spruce	
		Average	Stdev
Unit mass	Kg/m^3	414	28
Moisture content equilibrium - 65% RV (20°C) - 90% RV (20°C)	 % %	 5.2 9.8	
Shrink wet → 65% RV - Radial - Tangential	 % %	 1.0 1.8	
Shrink wet → oven dry - Radial - Tangential	 % %	 1.9 3.5	
Bending strength*	N/mm^2	79	19
Bending rigidity *	N/mm^2	10514	2665

* Bending strength and bending rigidity (elastic modulus) have been determined using error free samples (20x20 mm).

Fire performance

Based on their unit mass, both Platowood Spruce as well as Fraké meet the Euroclass DE-s2,d0. If needed, these timber types can be treated with flame retardants, so that they meet the Euroclass fire rating BS2, d0. Please feel free to contact us for professional advice regarding the treatment of Platowood.

Recycling

As no (toxic) chemicals are used in the unique Platowood process, the product is fully environmentally friendly, clean and sustainable. Even in the later phases of its lifespan Platowood can still be used in an economically sound way, for instance by recycling or as fuel for an energy plant.

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Transportation and Storage

Working on a high quality project also requires proper handling of the product before it is used in practice. In order to avoid damages, packaging, transportation and storage of the Platowood sound barriers or its parts should therefore be executed with proper care. For example: make sure the forklift truck forks are spread wide enough in case large and/or tall (5100-5400 mm) packages are transported.

The packages need to be stored and transported clean, dry, well ventilated, not exposed to sunlight and level. Use enough shelves and place the shelves squarely on top of one another. The storage should ensure the initial properties of the packages be maintained, so no heating and a constant humidity. These measures should also be taken on the building site.