TECHNICAL DATA SHEET

IGL Coatings™ Ecocoat Wood

Material no.			
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IGL Coatings Ecocoat Wood is a coating system for oil-, water, and dirt- repellent treatment of wood surfaces.

Description

Ecocoat Wood is a multifunctional, nearly VOC-free, water-borne silane system. The consumption of the ready-to-use solution depends on the application method, mostly about 50-300 ml/m^2 are sufficient.

Technical data

Property	Value	Method
Flash point	>90°C	DIN 51755
Density (20°C)	1.01 g/cm3	DIN 51757
Viscosity (20°C)	1 mPA.s	DIN 53015

Applications

Treatment of wood and all other absorbent wood surface.

Properties

Ecocoat Wood can be painted, rolled or sprayed. In a spray application it is mandatory to minimize the generation of aerosol emission by suited procedure (e.g. application of HPLV spray process, air driven low pressure spray processes. Consecutive application steps should be carried out wet-in-wet as a dried coat of Ecocoat Wood will almost immediately exhibit a strong repelling effect. Consequently a second application step would therefore be much less effective.

Recommended dosage during application: For a full range effectiveness and durability (up to 1500h of QUV-stability in transparent systems) 300 g/m2 of Ecocoat Wood are necessary. That amount can be applied by either one-step or multi-step procedures, depending on the absorptiveness of the substrate.

In a quantity of 70-150 g/m2 Ecocoat Wood will exhibit a QUV-stability of 300-900h with regard to hydro- and oleophobic surface activity (corresponding to approx.. 1-3 years of exterior weathering in an average European climate). Temperature of treated substrates should stay in the range of 5 - 50°C. Ecocoat Wood is sensitive to freezing temperatures. Frozen material can flocculate upon defrosting and may in part loose its beneficial properties. Ecocoat Wood should not be applied on wet surfaces (humidity <18% recommended). Crosslinking on wet substrates will be incomplete and thus full efficiency will not be achieved. To a certain degree Ecocoat Wood will impart slight yellowing on bright colored surfaces. So a test spot is always important. This will by no means influence the hydro-/oleophobic performance of the products. As a fully crosslinked impregnating coating, Ecocoat Wood is extremely resistance against all kinds of atmospheric exposure (UV-irradiation, rainfall, temperature changes) but imparts only a relatively weak UV-absorbing strength. Decomposition of lignin by UV light will be delayed but not prevented. Typical fading of color under the influence of UV light may thus be delayed by Ecocoat Wood but will not be inhibited.

Processing

- Do not apply the product at temperature below 0°C!
- Do not expose surfaces to be treated to sunlight. Make sure that the surface is not hot.

Step 1: Cleaning the surface

Cleaning the surface in order to permit sufficient chemical bonding of Ecocoat Wood to the substrate, the surfaces have to be carefully cleaned before the application. The long-term stability and abrasion resistance of the coating depends on how well IGL Coatings Ecocoat Wood is chemically bonded.

Step 2: Treatment process

Before the application of this mixture, the substrate has to be cleaned. Meanwhile keep the mixture unstirred. The temperature during processing should be in the range of 5-30°C, preferably 15-25°C.
Direct exposure to sunlight during application should be avoided. Spray Ecocoat Wood thoroughly until the entire object is damp. Some surfaces need to be sprayed 2 layers due to high absorption of the surface. Allow to dry in room temperature, or force dry after 20 minutes.

A hydrophobic effect generally can be seen depending on the substrate, reactivity and temperature after substrate is fully dried and is further enhanced after a few hours.

Reactivity
Ecocoat Wood does not contain solvents and, contrary to functional alkoxysilanes, does not release alcohols upon hydrolysis when applied. Ecocoat Wood boasts of a high proportion of already active silanol functions. Consequently a chemical coupling to the substrate as well as high crosslinking density due to the formation of two- and three- dimensional networks is obtained. Special alkyl-functional groups contained in Ecocoat Wood provide strong hydro- and oleophobic surface properties (low energy surfaces).

Processing
Ecocoat Wood is suited for hydro- and oleophobic surface modification of porous surfaces. Once surfaces are treated accordingly, formation of low energy surfaces leads to a prominent repelling effect towards almost all kinds of liquids. This strong hydro- and oleophobic treatment reduces the pick-up of dirt significantly. Ecocoat Wood exhibits its beneficial properties solely on the surface of the substrate. This surface modification is extremely resistant against weathering. Main reason is a severe stability of special alkylsilyl function as well as the chemical reaction of the silanols with the surface and the generation of highly crosslinked siloxane network. These features make Ecocoat Wood superior to any other standard hydrophobing agent.

Surface which is treated with Ecocoat Wood stays completely air-permeable despite its strongly hydro- and oleophobic surface. Permeability of water vapor is only marginally influenced by Ecocoat Wood, much less than by most of the standard binder systems in the paint and coating industry.

Safety and handling
Before considering the use of IGL Coatings products please read its Material Safety Data Sheet (MSDS) thoroughly for your safety and toxicological data as well for information on proper transportation, storage and use. The Material Safety Data Sheet is available upon request via email from sales@iglcoatings.com

Disposal:
The product residue remaining in incompletely emptied flasks may be disposed of only by bringing it to the municipal collection point for hazardous waste. For proper disposal of completely emptied flasks, first dry them out by exposing them to fresh air. Once dry, they may be safely recycled.

Packaging and storage
Ecocoat Wood is delivered in plastic bottles (500ml, 5 litre)

Ecocoat Wood must be stored above 0°C. Moreover, storage temperature should stay below 40°C. In the unopened container, Ecocoat Wood has a shelf life of at least 12 months.