

Dynasylan® SIVO 121

The Impregnation of Wood Surfaces



Dynasylan®

The global brand for organofunctional silanes



Dynasylan®. More Valuable to Our Customers than a Guarantee

For more than fifty years, our silanes under the Dynasylan® brand name have been important components of paint and coating systems. Dynasylan® is now the leading global brand of functional silanes. Thanks to the company's own research and technical service worldwide, Evonik is now in possession of a large number of exclusive patents and technologies unique anywhere in the world.

Today's products must possess a range of functionalities. For these modern systems, Evonik has developed Multifunctional Silane Systems™, which combine a variety of functions in a single product. This product range has now been expanded, the latest additions to the family being the Dynasylan® SIVO products.

Many options exist for protecting wood surfaces from water, dirt, the growth of microorganisms, and other external

influences. However, conventional wood preservatives are at best compromise solutions, with downsides as well as advantages.

Dynasylan® SIVO 121 is used for water repellent (hydrophobing) treatment as well as grease or oil repellent modification of wood surfaces. Depending on the treatment method, the treated surfaces show water repellent properties and may even prevent adhesion of oils and greases to the wood surface and their permeation into it. This in turn reduces the tendency to staining caused by adherent dirt particles carried by water or oils. The exclusion of water lengthens the life of the treated woods.

Surfaces treated with Dynasylan® SIVO 121 remain breathing active and show good weathering resistance.

Surface Protection Without Compromises: Dynasylan® SIVO 121

Evonik has succeeded in developing a particularly effective surface protection agent for wood: Dynasylan® SIVO 121. This water-based, solvent-free system has outstanding properties:

- repels dirt and water
- protects the surface from the effects of weathering, does not influence the natural change in color of wood caused by UV light
- lower sensitivity of the wood surface to the attack by microorganisms
- breathable
- almost invisible
- odorless
- protection for up to three years (depending on the concentration)
- not subject to labeling regulations under German chemicals legislation
- easy application

Dynasylan® SIVO 121 is suitable for virtually all wood surfaces. Regardless of whether the wood is untreated or already impregnated, weathered or unweathered, and originally waxed, or varnished, Dynasylan® SIVO 121 does not affect the expansion and contraction behavior of the wood and is suitable for outdoor objects without ground contact.



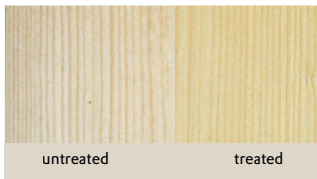
Technical positioning of Dynasylan® SIVO 121

Durability of repellency effect	Low visibility		High visibility	

■ Dynasylan® SIVO 121
 ■ thin-layer glaze
 ■ oil and wax

Compared with conventional systems such as oils, waxes, and thin-layer varnish, Dynasylan® SIVO 121 has considerably greater durability while leaving the appearance of the wood surface virtually unchanged. Dynasylan® SIVO 121 protects wood almost invisibly.

Dynasylan® SIVO 121 forms an almost invisible protective layer



Dynasylan® SIVO 121 on pinewood

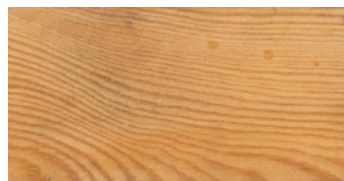


Dynasylan® SIVO 121 on a tropical wood (meranti)

Dynasylan® SIVO 121 keeps the surface dry, reducing the growth of microorganisms



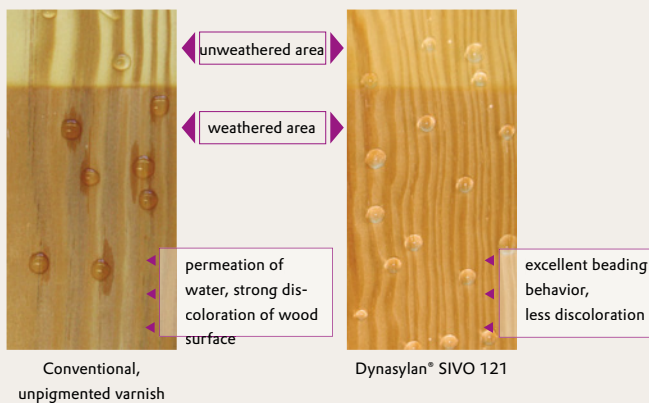
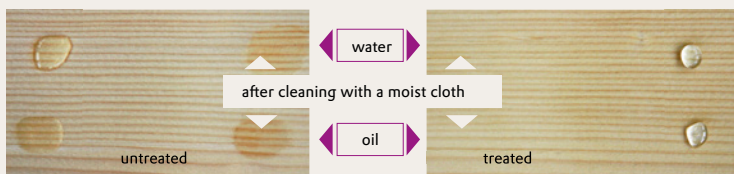
Mold infestation on spruce after one year of external weathering in a moist climate



Spruce treated with Dynasylan® SIVO 121 and exposed to the same conditions

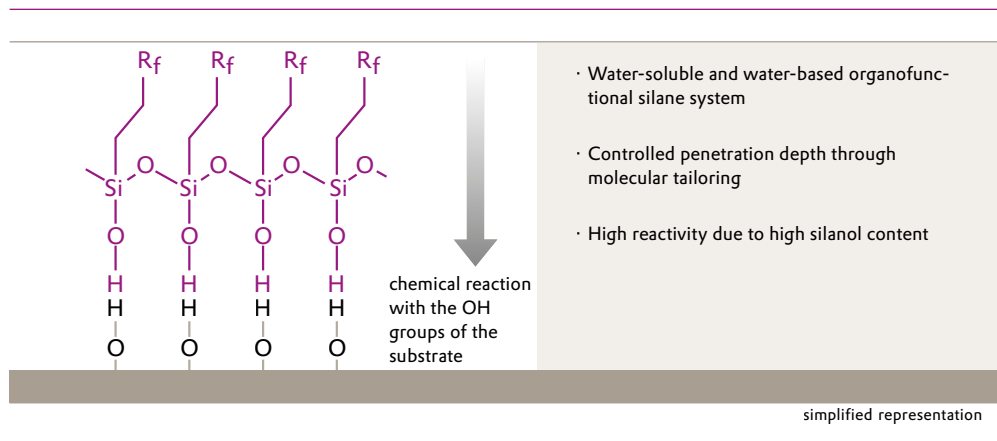
Dynasylan® SIVO 121 produces a marked oil- and water-repellent effect

On untreated wood surfaces and those that are weathered and varnished, Dynasylan® SIVO 121 produces a strong hydrophobic and oleophobic effect.



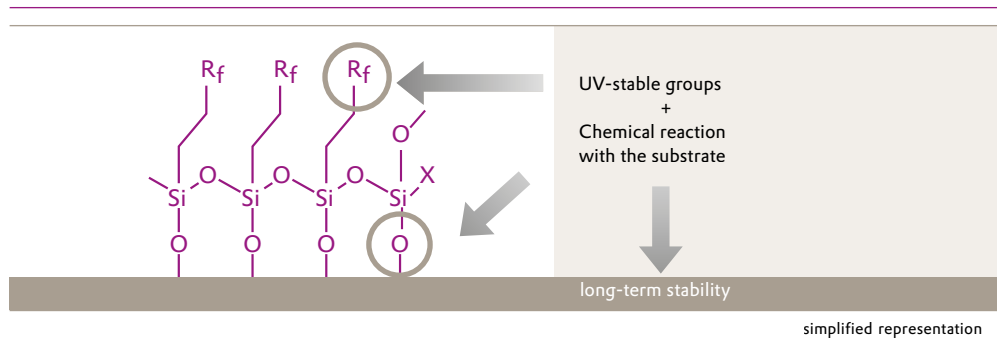
Mechanism of Action of Dynasylan® SIVO 121

The outstanding properties of Dynasylan® SIVO 121 are based on the principle of a covalent chemical reaction with the wood surface.



■ Substrate (wood)

The strong chemical bonding and the structure of Dynasylan® SIVO 121 result in particularly durable weather resistance.



■ Substrate (wood)

With Dynasylan® SIVO 121 wood retains its permeability to water vapor

S_d (The lower the S_d value, the better is the water-vapor permeability.)

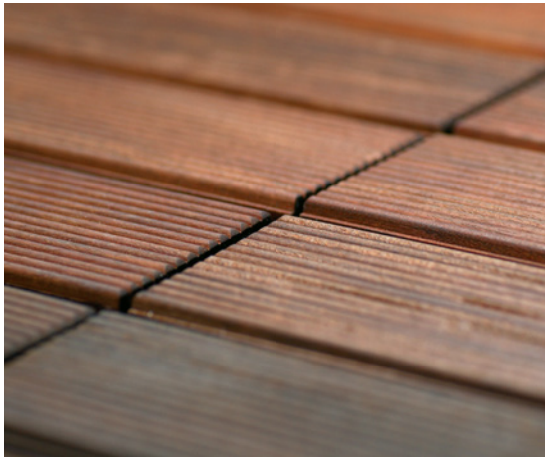
System	0 m	0.05 m	0.1 m	0.5 m	1.0 m	1.5 m	2.0 m
Dynasylan® SIVO 121	0,003						
Polyurethane coatings							
Acrylic coatings							
Epoxy-based coatings							
	permeable to water vapor		-permeable		-inhibitory		-impermeable

Impregnation ● ————— ⇄ ————— ● Coating

S_d = water vapor diffusion equivalent air-layer thickness in meters

Application of Dynasylan® SIVO 121

Example of use: Garden decking



Average area of patio assumed to be approx. 20 m²
Recommended: Undiluted application for an effect lasting up to 3 years
Quantity required: 0.1 l/ m²
corresponds to 2 l Dynasylan® SIVO 121

Example of use: Garden furniture

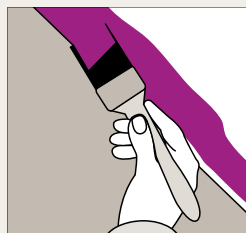


Table: 4 m²
Chairs: 4 x 1.5 m²
Total: Approx. 10 m²
Quantity required: 0.1 l/m²
corresponds to 1 l Dynasylan® SIVO 121

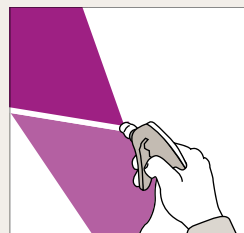
Methods of applying Dynasylan® SIVO 121



rolling



painting



spraying

Dynasylan® on the Internet

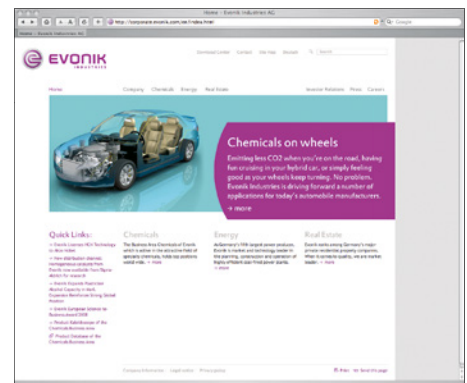
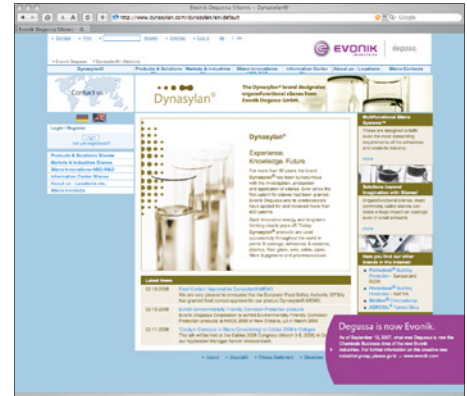
Information, addresses, and contacts

The **www.dynasylan.com** website offers a well-structured platform where you can find information on products, methods, and chemical processes. A solution-finder leads the way to informative brochures and presentations for downloading, in addition to product information and safety data sheets.

A database of Evonik contacts and dealers worldwide provides important contact data, conveniently accessible at all times.

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