

KEIM Lignosil®



**A milestone –
for wooden surfaces**



Wood – Building material with soul and character

People feel a greater affinity to wood than to almost any other building material. An old proverb says that in wood you hear the voice of the skies and the whisper of the earth. For thousands of years, wood has been used to manufacture the most various articles. And right up until today, century-old, still functional buildings are proof of the timeless charm and durability of wood.

**Building with wood
– modern over
thousands of years**

Today, wood as a building material is again becoming increasingly trendy. Because the ecological advantages of wood are unique – particularly when it comes to the aspect of sustainability. Wood belongs to those natural and renewable raw materials that are almost unlimitedly available. Furthermore, wood has an absolutely balanced CO₂ performance.

Further positive points are the extremely low energy requirement during production compared to concrete, steel, plastic etc. as well as the simple and easy disposal at the end of its service life. One should also not forget the unique aesthetic appearance, which gives a wooden facade its fascination.

Wood – protect and preserve

The appearance and durability of a wooden facade largely depend on the selection of materials, processing and surface treatment.

Up to a certain degree wood has enough self-protection against external influences. For this, nature uses resins, oils, greases and tannins, which are already contained in wood.

However, to meet today's building-related standards with regard to durability, maintenance intervals and visual stability, wooden surfaces usually require additional protective measures in form of suitable coatings.

Outdoor weathered wood can lose its usability in the course of time. Only properly planned and performed constructions guarantee durable components. High-class coatings play a key role in this context. Protection from moisture and UV-light takes up top priority.

Besides their protective properties wood paints provide aesthetic aspects for a designer to underline the individual character of a wooden facade.

No durability without protection

Potential risks for wooden surfaces



Moisture

- Expanding / Shrinking
- Leaching/Greying
- Rot



UV radiation

- Destruction and degrading of the lignin
- Darkening



Chemical and biological influences

- Environmental influences
- Wood-destroying fungi
- Wood-destroying insects



Thermal stress

- Temperature gradient in the cross-sectional profile
- Spontaneous and fast cooling-off of the profile surface

Wood as building material – deficits of conventional wood coatings

**The disadvantage:
insufficient UV
resistance**

Conventional wood coatings are based on linseed oils, alkyd resins, acrylates and other plastics – and that is exactly where the problem lies. **The binder of organic coatings shows a restricted UV-resistance.**

This property first leads to colour changes and consequentially to the degradation of the binding agent. The coating loses its adhesion and elasticity, becomes brittle and flakes off. Its protective function is lost. Moisture penetrates into the exposed areas of the wood structure, infiltrates the remaining coat of paint, finally causing it to also flake off.

**The consequence:
high upkeep costs**

The usual organic coating systems for wood show a limited service life of approx. 3 to 7 years, depending on quality and stress situation. Due to the amount of work and the short renovation intervals, the maintenance costs for wooden facades with such coatings are extremely high.





Wood as building material – coating with silicate paint

Silicate paint – what is it?

Silicate paints consist of inorganic binding agents, e. g. potassium silicate or silica-sol, inorganic pigments and mineral fillers. Curing takes place by means of a chemical reaction between the binding agent and mineral reaction partners in the substrate forming a chemical and insoluble bond.

In contrast, organic binding agents cling only physically by means of adhesion (adherence) like e.g. all conventional wood coatings.

Due to the sole use of inorganic colour pigments, silicate coatings are also unrivalled in colour stability. This ensures correspondingly long renovation intervals, thus also ensuring clearly lower building upkeep costs than are usual.

Considering the limited service life of conventional wood coatings, the transfer of the “silicate paint principle” to the substrate of wood could mean unknown progress in the quality of wood coating.

Transfer of the “successful silicate paint model” to the organic substrate of wood

Silicate paints – maximally weather-resistant and extremely durable

Inorganic, silicate binders excel by their sensational UV-resistance. There is no binding agent degradation due to the influence of UV light. The layer of paint is micro-porous, allowing moisture from the substrate to diffuse. Silicate paints have been used on mineral building materials for 135 years with great success. As facade paints for plasters and concrete, they are characterised particularly by their extreme durability and ease of renovation.



Innovation – patented!
EP 2 208 544

KEIM Lignosil – durable, economical, aesthetic

For more than twenty years, the developers at KEIMFARBEN have been working on the transfer of the success model of silicate paint to the substrate of wood within the framework of a research project, supported by well-known institutes. The result: A mineral composite coating for the weather protection of wood – **KEIM Lignosil**.

KEIM Lignosil, the first mineral composite coating for the weather protection of wooden surfaces

Strengths of KEIM Lignosil:

- Excellent moisture protection
- Absolutely lightfast and UV stable
- Highly weatherproof
- Unequalled durable
- Velvety matt surface finish
- Easy to renovate

Fraunhofer
monitored WKI

Nr. OT.135-2010

„Third-party monitored WKI
 No. OT.135-2010“

Application	Exterior use		Interior use	
	Opaque coating	Creative coating	Opaque coating	Semi-transparent coating
Crack-filling	Lignosil-HRP Holzrissspaste (wood filler)			
Priming	2 x Lignosil-Base/-DL	2 x Lignosil-Base/-DL	–	
Top coat	2 x Lignosil-Color*	1 x Lignosil-Color 1 x Lignosil-Artis/-DL	2 x Lignosil-Inco*	2 x Lignosil-Inco/-DL*
	* If required (in case of bleedings due to staining wood ingredients) 1 x Lignosil-Scudo as intermediate coat			

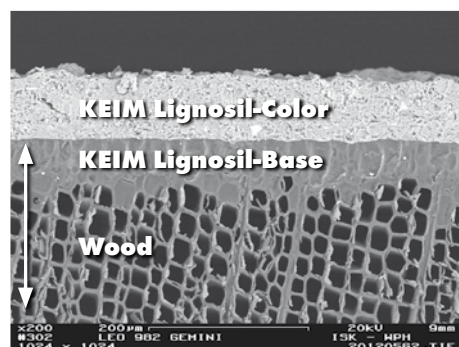
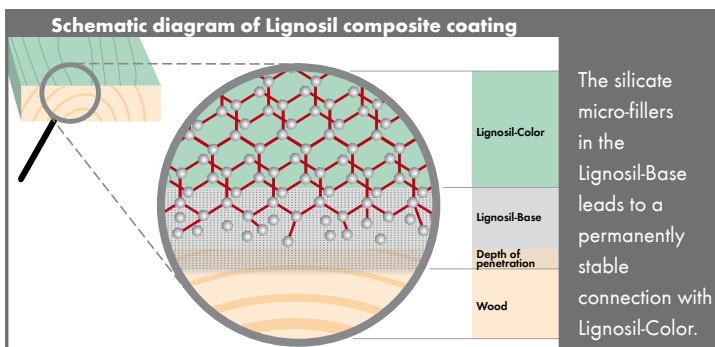


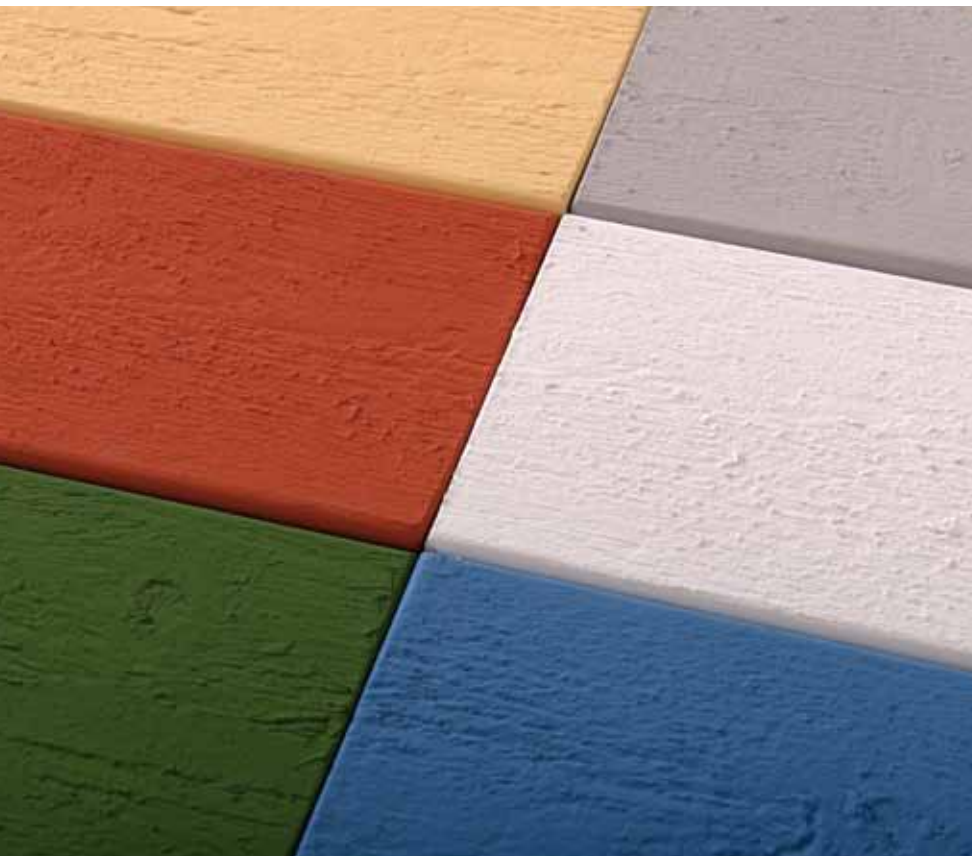
**The ultimate plus:
Renovating with
KEIM Lignosil**

KEIM Lignosil offers more decisive advantages, e.g. the extremely low material and labour costs for renovation work. The old, weathered Lignosil surface usually does not need any grinding. Thorough cleaning is sufficient as preparatory work. Therefore a new coat of primer is not necessary.

For renovation a two-coat application of KEIM Lignosil-Color is sufficient! With the development of Lignosil, KEIMFARBEN presents a wood coating system that convinces by its exemplary economic efficiency and beautiful appearance.

The unique, innovative features of the KEIM Lignosil-System have been documented by the **European Patent for Systems and Products!**





KEIM Lignosil®-System

The first silicate paint for wood

Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages

Fraunhofer

monitored WKI

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www.lignosil.com

KEIMFARBEN – Your specialist for mineral materials

- Facade paints
- Interior paints
- Creative design
- ETICS
- Concrete repair and surface protection
- Mineral plaster
- Natural stone repair
- Wood-paints

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KEIMFARBEN
consistently mineral