



# SiOO:X

WOOD PROTECTION

**Product Sheet**

SiOO:X System Deck Industry

# Product Data Sheet

## SiOO:X System Deck Industry

WOOD PROTECTION:  SiOO:X WOOD PROTECTION INDUSTRY	SURFACE PROTECTION:  SiOO:X SURFACE PROTECTION DECK INDUSTRY
---	--

### PRODUCT DESCRIPTION

SiOO:X silicon- and potassium-based system consists of two products: Wood Protection, which is applied twice, and Surface Protection, which is applied once and re-applied after a period as a maintenance coat.

SiOO:X Industry Decking system is part of Sioo's industrial range and is specially formulated to suit industrial application. For the corresponding consumer products, visit the consumer page at [sioox.com](http://sioox.com).

SiOO:X Wood Protection contains silicon and potassium, which penetrate the wood structure and undergo a maturation process. This maturation process creates a matt surface in a natural shade of grey, without any added pigments. The precipitated silica forms within the wood cells and bonds with neighbouring silica deposits in both adjacent cells and on the timber surface, to form a flexible and insoluble silica.

SiOO:X Surface Protection Deck is the second product in the SiOO:X Industry Decking system for industrial application of wood decking. The Surface Protection is water-based and contains silane and siloxane emulsions that react with the Wood Protection and the wood surface. Surface Protection is specially engineered to bind and work with Wood Protection in synergy, providing protection to the timber surface.

### HOW IT WORKS

The components of the Wood Protection react with moisture in the outdoor environment, mineralize the wood, and bind together the surface fibres of the wood. As the silicon treatment matures it strengthens the wood, which gradually turns grey.

The Surface Protection seals the system and inhibits leaching of the Wood Protection. The surface becomes both water-repellent and vapour permeable. It means that water droplets can't penetrate the surface as easily, while moisture quickly evaporates through the permeable surface. The ability to repel water reduces the moisture content of the wood. A drier wood resists the growth of rot and algae better and is easier to clean. The water-repellence also means a more uniform moisture

content, which leads to less movement of the wood and thereby less maintenance. A vapour-permeable barrier is essential for the system, as it needs moisture, UV light, and carbon dioxide to mature.

### DURABILITY

On horizontal deck surfaces, a natural grey shade develops during 4–8 weeks after correctly completed treatment, depending on exposure and location. A maintenance coat of the consumer product SiOO:X Premium Surface Protection Deck should be applied after 12–18 months. It is the responsibility of the supplier, contractor, timber company and applicator to inform the customer about this. With the correct application, installation, and maintenance, SiOO:X Industry Decking system will protect and enhance the natural beauty of the wood. This system has a life span of up to 12 years (for copper impregnated fir) depending on climate zone, exposure and wood species.

### APPLICATION AND INSTALLATION SIDES

SiOO:X is applied to at least three sides (face and edges), and to end grains and cuts.

The choice of main side that is treated and installed facing up is very important, as a correct application ensures a durable product and an attractive appearance long term. The choice depends on wood type and the amount of heartwood it contains.

### WOOD AND SURFACE

For hard and oily wood species, such as heart pine decking with a high heartwood content (higher than 95%) and heartwood-rich larch, lay the heartwood side down, i.e. bark-side up. Hard and oily wood species must first be sanded (with 40-60 grit paper) and pre-treated with SiOO:X Prewash to open the surface. For pressure-treated pine it is recommended that the heartwood side is treated and installed up if it is free from pith. If pith is visible, it is recommended to place the board pith-side down to avoid splinters. For other wood species, please contact customer service at Sioo.

SiOO:X Industry Decking system should only be applied to surfaces intended for decking.

## **COVERAGE**

See the coverage table.

## **PREPARATIONS**

Read Safety Data Sheets and labels before use.

\*\* The temperature of the liquid, room and wood should be between +15°C and +30°C during application and drying. SiOO:X should only be applied to clean and dry wood surfaces. Wear gloves and eye protection. Make sure the room is well-ventilated, and respirator masks must be worn for spray application (e.g. combination filter A1P2 or equivalent).

The SiOO:X system is based on two coats of Wood Protection and one coat of Surface Protection. This also applies to end grains and cuts.

\*\*\* Make sure the moisture content of the wood is between 12-23% before applying the first coat of Wood Protection. The wood should be dry before applying the second coat of Wood Protection and before application of Surface Protection. The Surface Protection must be applied within a few days of the Wood Protection to achieve best results.

Stir or shake the contents of the container until the product appears consistent and there is no sediment. The SiOO:X products are ready to use and should not be diluted with water. It is recommended that the entire contents of the container are emptied into the application equipment and used at the same occasion.

Before starting SiOO:X treatment, make sure that the equipment has been thoroughly cleaned. Remove traces of old paint. This also applies to auxiliary equipment, conveyor belts, etc.

## **APPLICATION**

In the event of spills, wipe up SiOO:X with a damp rag.

If unsure about the application method or equipment, read application guidelines and if so, contact customer service at Sioo before starting treatment or application.

Do not forget to treat the end grains during each stage of treatment. It can be done with the same products but can also be done with a separate end grain sealer product – see information for SiOO:X End Grain Sealer.

### **Wood Protection, 2 coats**

Apply Wood Protection to the dry, clean surface and let the treatment dry for at least two hours until the surface is dry. Note that the reaction continuous in the wood also after the surface is touch dry.

Apply a second coat of Wood Protection and leave the treatment to dry for at least four hours.

For modern high-volume line application, it is possible to use heater and/or air dryer to speed up drying after applying SiOO:X.

Follow guidelines and Sioo special instructions to achieve the best result.

It is important that the Wood Protection is allowed to dry slowly so the product can penetrate into the wood material. Do not use heat above 30° C to speed up drying after applying the Wood Protection.

### **Surface Protection, 1 coat**

After the second coat of Wood Protection has dried, the wood is ready for application with Surface Protection. Apply Surface Protection and let the treatment dry until the surface feels dry to the touch.

The temperature should not exceed 30° C for drying the Wood Protection or the surface protection. To high temperature can lead to a patchy and shiny surface. Airflow should be unevenly distributed.

For more information about drying, please read “Application Guidelines”.

## **AFTER APPLICATION**

Return leftover liquid to the original container. Wash equipment and tools as soon as the application is finished, before SiOO:X has time to dry. SiOO:X can be washed off with water. Gather up any waste and dispose of via an approved waste disposal plant in accordance with local and national government regulations. Clean and recycle packaging.

After treatment the wood should remain uncovered until it is ready for distribution or storage. This will help distribute the moisture in the wood, and the maturing of the SiOO:X system can continue.

Store treated wood under roof and free from dust. Once the treated wood is dry it can be stored cold. Surfaces that recently have been treated with Surface Protection must be handled with care when damp as they are initially vulnerable to mechanical wear.

## **RESPONSIBILITY AND MAINTENANCE**

Results for this painting should be stored. Control samples must be used to measure the application rate and liquid uptake after each coat. Length, size, profile, surface texture of the timber must be stored. The name of the customer and batch number of paints should also be stored.

It is the responsibility of the supplier, contractor, timber company and applicator to inform the customer about which SiOO:X treatment that has been applied and how correctly maintain the SiOO:X surface to ensure the longest lasting results. This includes the need for a maintenance coat of Surface Protection after the recommended period and the need to treat all new end grains and cuts during installation. See the cleaning and maintenance of SiOO:X.

## INFO

- Storage of liquid: +5°C to +30°C
- Stir before use
- \*\* Application temperature:
  - SiOO:X Wood Protection Industry: +8°C to +30°C (the preferred application temperature is +16°C to +22°C)
  - SiOO:X Surface Protection Deck Industry: +15°C to +30°C (the preferred application temperature is +16°C to +22°C)
- \*\*\* Moisture content of wood during application:
  - Wood Protection coat 1: 12-23% (the preferred moisture content is 16 to 22%)
- Drying temperature: +15°C to +30°C.
- Drying times:
  - >2 h between Wood Protection coats 1 and 2
  - >4 h between Wood Protection coat 2 and Surface Protection

For more information about drying, for ex. with air/heat read “Application Guidelines”.
- Correct industrial application:
  - 2 coats of Wood Protection
  - 1 coat of Surface Protection
  - End grain sealer
- EPD's are available upon request.
- Recommended spray nozzle size >100 µm.
- Water-based products that are water soluble.
- IMPORTANT! Do not forget your responsibility to inform the customer which SiOO:X treatment that has been applied and how to correctly maintain the SiOO:X treated surface.

Note that long periods of wet conditions may cause problems. It is important that decks are constructed in line with accepted practice, see [sioox.com](http://sioox.com).

Information is subject to change without notice. Sioo retains the right to update the data sheet as it deems appropriate, and the user is responsible to check for updates at [sioox.com](http://sioox.com) before using the product. It is not possible for Sioo to warn the user about every possible danger related to use of the product and the user must use common sense and good judgment. Please contact Sioo with any questions or concerns before using the product.