



VETRO POWER SOLAR PANEL PROTECT

Anti-Soiling Liquid Glass Coating for Photovoltaic Module Glass

Vetro Power Solar Panel Nano-Shield is a ready-to-use surface protection system for glass surfaces and photovoltaic applications. It cures to an ultra-thin layer that covers the glass and prevents the adhesion of dirt and water on the substrate, so treated surfaces are easy to clean: dust, dirt and pollen are washed away by rain without streaks or residue. The application can be processed during the production of the module or afterwards on installed glass elements.

APPLICATION AREA:

Photovoltaic modules (glass, silicone sealing and frame) on rooftop, commercial and ground-mounted installations; module production; glass facades; skylights and greenhouse glass; all glass surfaces that have to stay clear with the least cleaning.

PHYSICAL CHARACTERISTICS:

Technology / base	Silicon dioxide (SiO ₂) liquid glass, solvent-borne, ready to use
Appearance	Colourless liquid, alcohol odour; cured layer invisible
Density	0.8 g/cm ³
Viscosity	approx. 1.2 mPas
Flash point	12 °C (below 15 °C); highly flammable liquid and vapour
Boiling point	approx. 80 °C
Coverage	800 to 1,000 sq ft (75 to 93 m ²) per litre
Containers	250 ml, 1 L, 5 L; bulk drums and IBC on request

PERFORMANCE DATA:

Property	Result
Surface properties	Hydrophobic, oleophobic, soil-repellent, non-stick, easy-to-clean
Look and feel	No change in look and feel
Light transmission (PV module glass)	Not reduced; increased transmission measured at the coated sample from the medium-wave visible to the UV long-wave range
UV weathering	Significant hydrophobicity retained after 3500 h UV exposure
Chemical resistance	Commercial cleaners in the pH 2 to 12 range; compatible with disinfectants
Abrasion resistance	Higher water contact angle than three comparison coatings after 5000 cleaning cycles
Pressure cleaning	High-pressure and vapour cleaners up to 60 bar, depending on the substrate
Temperature resistance	Up to 450 °C (peak temperature)
Microorganisms	Passive protection of module glass, silicone sealing and frame; adhesion significantly reduced without biocides
Service life	Up to 5 years in ideal conditions on unweathered panels; 3 to 4 years in windy, dusty or coastal locations. Surfactant cleaners and mechanical abrasion shorten the life of the layer.

Food safety

Food-safe, physiologically harmless (EU regulation 1935/2004), biocompatible

FEATURES:

- Easy-to-clean, soil-repellent
- Hydrophobic and oleophobic
- No change in look and feel
- UV-stable
- Non-stick properties
- Enormous abrasion resistance
- Multiple graffiti removal possible
- Ecologically sound

APPLICATION METHOD:

Surface preparation: To achieve a long-lasting effect, the surfaces have to be free of dust, grease and residues of cleaning agents, and dry. For all surfaces, we recommend an examination for stability and functionality on an inconspicuous area before full application.

Application: Ready to use; do not dilute. The recommended application technique is spraying using a spray device with HVLP nozzles. Industrial spray devices are suitable for the application of the product. In the case of larger surfaces, work square metre by square metre. Apply a thin, even film and avoid ponding on the substrate. Allow to dry.

APPLICATION CONDITIONS:

Apply at 5 to 35 °C and 90% relative humidity or less, in the shade, on a dry, wind-free day. Do not apply in wet conditions or when rain is expected within 24 hours. The film is touch dry in a few minutes; keep the panel dry and untouched for the first hour, and the coating reaches full performance after 24 hours.

COVERAGE:

One litre covers about 800 to 1,000 sq ft (75 to 93 m²) of glass.

CLEANING AND CARE:

Rain removes dust, dirt and pollen from the coated surface. When washing is needed, use water with a soft brush or water-fed pole; high-pressure and vapour cleaners up to 60 bar can be used, depending on the substrate. Commercial cleaners in the pH 2 to 12 range do not harm the layer.

LIMITATIONS:

The coating reduces soiling and the cleaning needed; it does not remove dirt already bonded to uncoated glass, so surfaces are cleaned before coating. Grease, cleaning-agent residues or moisture on the glass at the time of application shorten the life of the effect. Test each panel type on an inconspicuous area before full application. Drying time varies with temperature and humidity; coverage varies with the substrate and application method.

NOTE:

Highly flammable liquid and vapour (flash point 12 °C): keep away from heat, hot surfaces, sparks, open flames and other ignition sources; no smoking; use only non-sparking tools; ground and bond containers and take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area; avoid breathing vapours; wear protective gloves, eye protection and respiratory protection when spraying. Store in a well-ventilated place, cool, with the container tightly closed, away from oxidising agents, heat, frost and sunlight. Due to the raw material used, different visual colour changes can happen. This can appear occasionally batch-related and does not constitute a reason for a complaint about the respective product.

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem Pvt. Ltd. is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem Pvt. Ltd. is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem Pvt. Ltd.'s prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem Pvt. Ltd., including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

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