

# Super Glass Barrier

Product date

## Description

Antistatic Super-Hydrophilic Self-cleaning coating for Exterior materials

## Properties

- Antistatic=Reduction of dirt adhesion such as yellow sand, carbon, coal ash and iron powder.
- Super Hydrophilic Self Cleaning=Dirt even oil float easily with rain and water.
- Easy Cleaning=Easily float and take off the dirt such as bird droppings, oil dirt and insect carcasses.
- 100% Inorganic /Super weather resistance=About 10 year of weather resistance, Hard coating.
- Quick dry at room temperature=Easy application by spray gun.
- High transparency=90% of Visible light transmittance or more, the transparent type.

## Application Substrate

- Exterior material paint. Organic painted surface (Application test is required for painted substrate by Fluorine-based coating )
- Aluminum panel -Tile
- Commercial vehicle body surface
- Concrete, stone, brick
- (Seal Coat is required before the application)

## Uses

- The building in general and office buildings, condominiums, hotels, Commercial ,government, hospitals, welfare and school facilities
- Public facilities such as stations, airports, shops
- Road materials in general, guardrail, noise barriers, road signs
- Civil engineering ... bridges, tunnels, dams
- Vehicle ..... railway, bus, truck, working vehicle

## Ingredients

- 100% Inorganic material, Methanol-based,
- Colorless and transparent
- Silica, tin oxide, methanol

## Technical date

- Super UV irradiation test: passed 300 hours test.
- Xenon weather meter weathering test : passed 1391 hours test.

## Case Studies

Tokyo Big Sight West Wing roof	Tokyo Shinjuku Station Cocoon Tower	Nanjing, China	Hong Kong, in a tunnel
Coated on the heat-shielding paint	Applied as suppression of rain dripping on the exterior surface	Applied to glass fiber concrete 100,000 square meters	After 1 year 5 months, Clearly dirt adhesion amount is different.

## Price

Shipping fee is required.

Price is depending on the quantity.  
Please contact to SKETCH



Price 20L 200,000JPY

## Application/Weather

- Optimal substrate temperature is less than 30 degrees, please avoid the application under direct sunlight.  
Reason: The substrate surface temperature is too high, then volatilized before forming. Also it can be a cavity on the coating surface, then the coating film will be white because of the diffused reflection effect of silica.
- Under the strong wind, please avoid the wind hit the substrate as much as possible.  
Reason: The volatilization of the substrate is too early, you can not apply.
- In the case of rain or snow on the application date or next day, it does not recommend to apply.  
Reason: This product will take 12 hours or more to complete cure. When it's rain and water sprayed, it drops the adhesion and the durability of the coating film.

## Storage

- 1 year (keep in the cool dark place)
- Solutions should be stored at room temperature less than 25 degrees and less than 60% humidity. Storage in the refrigerator is also available.
- When you carry the coating liquid, it is better to put it in the cooler box.
- Avoid the fire, because it is the Methanol based coating.
- Please be careful to fall or break or leak the container. Keep the container upright.

## Application/Coverage

- Completely drying after high-pressure washing, applied to 10g to 20g per 1 sqm with a spray gun.
- Concrete, Stone and Brick which absorb the water, Seal Coat is required before the application.
- After the outer wall painting, wait for 6 to 7 hours until the surface becomes dry. Then apply Super Glass Barrier.

## Application/Points

- Spray application. Use 0.8 to 1.4mm nozzle size of a cup gun.
- Pressure is 0.2 to 0.3 Mpa. The distance between the spray gun and substrate is 15cm to 20 cm. Application to the smooth surface is necessary for 10g per 1 sqm. When there is uneven surface such as concrete, you might need 20g per 1sqm.
- Use more than 2 horsepower of Compressor
- The liquid is dripping when you spray, the amount of liquid is too much. Or there is rebounding, the pressure of gun is too high. On the other hand, there is powder because the coating liquid volatilized and adhere the surface, the distance between spray and substrate is too away.
- Depending on seal coat, our product might not apply well because the compatibility is poor. Please test it before the application.
- This is not photo catalyst coating, so it does not necessary to cover around the substrate.

## Verification

- Use the surface resistance meter to check the value before and after application. To determine the coating is formed when the values raised 2 or 3 square. Check if there is no differences between the upper, middle, bottom, left and right of the application. If the value does not change after the application, please apply again.
- Spraying the water after the next day of application to determine the super-hydrophilic film was formed. However, if you spray the water immediately after the application, please apply again.

## Cleaning after application

- Cleaning after application should be washed by just water or diluted neutral detergent. Please do not use detergent.
- During 12 hours after application, it should not take the rain and water.

## SAFETY PRECAUTIONS

Primer for resin is non-toxic and not flammable once it has cured. Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: proper ventilation, wearing of protective clothing and proper separation of application areas. For more specific safety procedures, please refer to the Super Glass Barrier Material Safety Data Sheet.



SKETCH CO.,LTD.

Chaco Paper Hall, 3F.  
2-25-10 Asakusabashi Taitou —ku Tokyo Japan  
TEL+81-3-5825-6503 FAX+81-3-5825-6504  
<http://www.sketch.co.jp/>

## Ani-fouling effect

### Anti-static effect

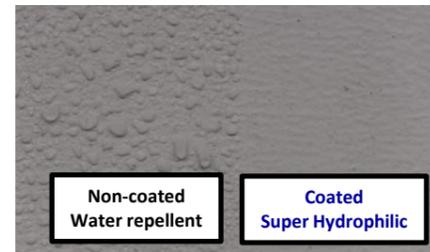
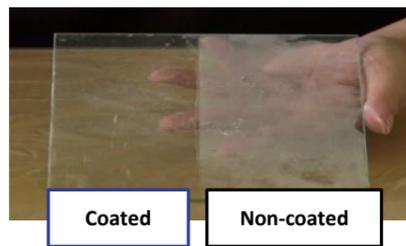
Ultrafine particles of tin oxide (SnO<sub>2</sub>) has many free electrons, and the electrical resistance is low, (surface resistance ~ 10<sup>9</sup>Ω / □). It's prevent to adsorb and adhere of the fine dust and particles floating in the air. Also it works for the inorganic dirt such as exhaust gas and coal ash, and yellow sand or iron powder which cannot be decomposed with photo catalyst.

### Super Hydrophilic effect

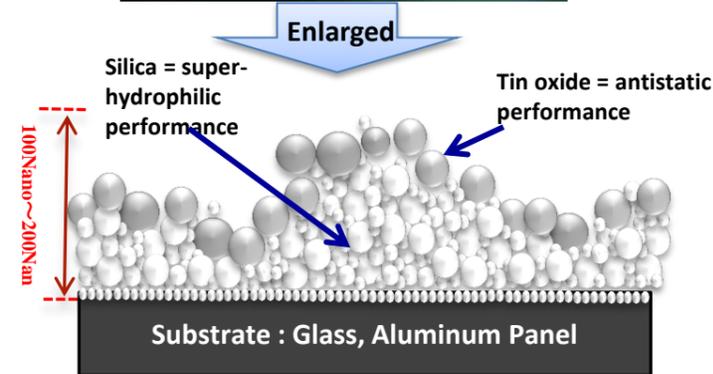
Creating an even on the surface of the glass by using 100 to 200 Nano-sized silica, unlike the super-hydrophilic effect of the photo catalyst, it can make a constantly super-hydrophilic film without the irradiation of light. Contact angle is 5 degrees or less, so the rain or water enters the bottom of the dirt and it washes away the dirt.

Water makes ultra-thin film on the substrate, it is called a super-hydrophilic film.

Powder adhesion when the baby powder sprinkled after application



Water contact angle  
Less than 5 degree



#### ◆ Super-hydrophilic film technology by inorganic binder

The surface of the substrate looks flat, but there are fine unevenness invisible when it is expanded. To control a variety of particle size (2nm ~ 10nm) of the silica and tin oxide by SKETCH binder technology and it enables adhesion to any material. Also, because it is using a very small particle size of the silica, the photo catalyst and antistatic agent comes out to the surface, it will be able to add a very efficiently function.

#### ◆ Fractal theory

Effect of the hydrophilic can be improved by fine unevenness of the surface. Unevenness lines uniform becomes a super water-repellent status; on the other hand, it lines unevenly becomes super-hydrophilic status

### Verification for the demonstration

#### Preparation Tools

- The substrate such as an aluminum panel (Size: 15cmx15cm)
- Super Glass Barrier
- Micro-fiber cloth (If not, please prepare a clean cloth.)
- Water spray bottle -Baby powder
- The surface resistance meter (please purchase by Internet)

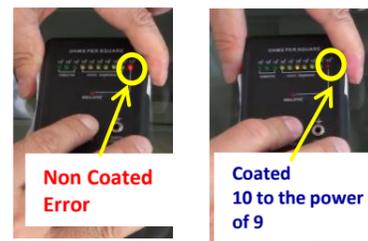
#### Application

- 1) Decide coated and non-coated area and wash with water both to clean.
- 2) Fold micro-fiber cloth to small and apply small amount of coating.
- 3) Apply by hand only the coated surface on the vertical and dry. (Dries within 5 minutes at room temperature. quick-dry type.)

#### Verification

- 1) The coated surface and non-coated surface are measured by the surface resistance meter. Number of coated area will be two to three squares higher than non-coated. = Confirmation of the antistatic effect
- 2) Sprinkle to baby powder to coated and non-coated area.
- 3) When you shake the powdered substrate, the adhesion of baby powder reduces on coated area. =Confirmation of the antistatic effect.
- 4) The coated surface becomes super hydrophilic film when you spray water and wash baby powder. =Confirmation of the super hydrophilic effect.

surface resistance meter



#### Note for the application

- 1) If the substrate has become white when coated, determine the amount of coating was large.
- 2) It will take more than 12 hours to fully cure. When you spray water to confirmed immediately after the application, please apply again.
- 3) No rain or snow when you apply outdoor.
- 4) If the surface temperature of the substrate is not less than 30 degrees, liquid will volatilize before forming. Apply to cool substrate.
- 5) Depending on the resin base material, it may not be applied.

## Verification method at the time of outdoor exposure test

### Verification for outdoor

There is 5 ways to verify the antifouling effect.

One month after the application then every three months to verify the effect.

#### 1) Check the dirt on the substrate

⇒ Compare the amount of dirt deposition on coated and non coated area and verify the antistatic effect.

#### 1) Dirtiness



#### 2) By the value of surface resistivity, check the conductivity as a number

⇒ Lower numbers evaluated as there is the high conductivity. It means there is antistatic performance.

Measure the value before and after the application. To determine the coating is formed when the values raised 2 or 3 square.

#### 2) Surface resistivity



#### 3) To wipe off the dirt, check the dirt adhesion

⇒ Rub the coated and non coated area with a cloth, to check a difference of dirt adhesion amount. If antistatic performed, the dirt of the coated surface is less than non coated. It is determined that the coating film is maintained.

#### 3) 5) Check the dirt



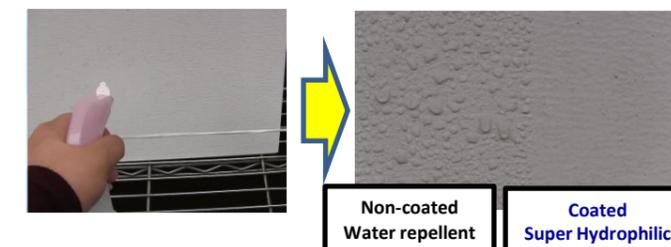
#### 4) Spray water and check the water repellent.

⇒ Make sure whether it is super-hydrophilic film.

#### 5) Spray water, then wipe of the dirt with non-woven cloth.

⇒ Confirm Super-Hydrophilic effect with spraying water. Compare the dirt to non coated area and verify the performance.

#### 4) Super Hydrophilic performance

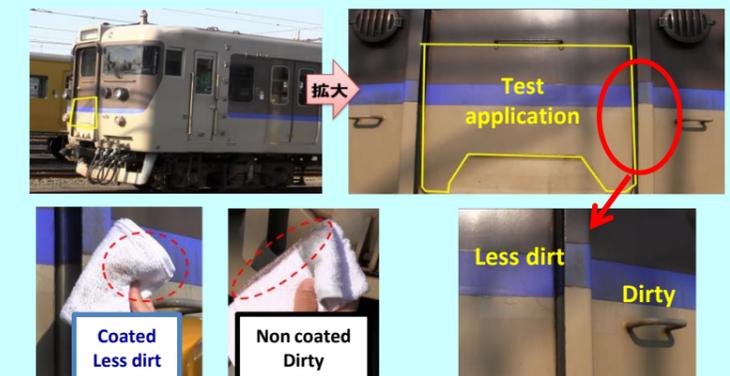


### Case studies

#### 1) Verification after antifouling coating 1 year and 2 months of railway vehicle paint body surface

■ Purpose : Side of the railway vehicle can be mechanical wash, but the front and rear faces are regular hand washing with deck brush. Therefore, we examined whether it is possible to reduce the regular cleaning number to use anti-fouling coating.

■ Result : After one year and two months, the dirt adhesion amount of coated surface is small and it was confirmed that the dirt is easily to take off.



#### 2) Verification after antifouling coating 5years and 3 months at KAGOSHIMA.



#### 3) Verification after 2 months at Tokyo Big site. Applies 2,000sqm. Thermal barrier paint and antifouling coating.

