Super hydrophilic Antistatic Antifouling coat

Application Manual
**Notes**

● **Notes / Temperature**
Optimal substrate temperature is less than 30 C degrees.
1) When the temperature or the glass surface is hot, slightly increase the amount of coating
2) Put the coating liquid to cooler box with ice, it will be better finish and cool the liquid itself.
※Store in the refrigerator is also possible, in the field, it should put in a cooler box and store in the shade.
Purpose: By cooling the solution, delay the volatilization order to promote the densification of the coating film.

● **Notes / Application**
Please avoid the application under direct sunlight. Since volatility is fast, better to intercept the solar radiation so as not to be exposed to direct sunlight will be well to both finish and performance.
1) Even without the direct sunlight, in order to promote volatile liquid by wind, you might need to consider the windshield.
※Problem of temperature and substrate temperature and wind, in order to influence the volatilization rate of all coating liquid, the surface of coating may becomes poor (plaque comes out).
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.
**For the above reasons, please avoid the application, especially during the hot season in summer and the strong winds.**

● **Notes / After application**
1) 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.
2) In the case of application to the glass and mirrors, maintenance is only to wash by water, please do not use detergent.
3) When the oil of the surfactant contained in the detergent remains, the persistence of ultra-hydrophilic effect will be reduced.
Solution Preparation・Blending

Please blend the coating liquid before the application.
Two liquid type: Solar Self maintenance coat・Hyper Glass Barrier・Clean Self Coat MC-T

【Formulation order】

Put 30% of SSMC/HGB/MC-T liquid (=Liquid B) into 70% of SGB Binder.(Liquid A). Mixing Ratio is 30:70

Close the lid and shake for about 20 seconds.

Ex) When you make 300g of the finished product
Put Liquid B(90g) into Liquid A(210g)

Order to calculate in grams, the finished product will be 300ml or more by the specific gravity.

Note the capacity of the container to be used.

【Notes】

You have to shake HGB liquid or SSMC liquid or MC-T liquid, we are called `liquid B` until evenly mixed.

Since the specific gravity is different in the liquids A and B, it has become a container of different size, but the weight is the same.

The blended liquid has the slightly heat, but it will settle down in 30 minutes after mixing.
After mixing, You should use it as soon as possible because it is very easy to come out gelling.

Quality of each coating liquid is guaranteed for 6 months before mixing liquid.
<table>
<thead>
<tr>
<th>Substrate</th>
<th>Products</th>
<th>Type</th>
<th>Features</th>
<th>Application Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior wall</td>
<td>Super Glass Barrier</td>
<td>Alcohol base</td>
<td>Antistatic/Self Cleaning Super Hydrophilic</td>
<td>Spray gun</td>
</tr>
<tr>
<td>Aluminum Panel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar Panel</td>
<td>Solar self maintenance coat</td>
<td>Alcohol base</td>
<td>Antistatic/Self Cleaning Super Hydrophilic</td>
<td>Squeegee</td>
</tr>
<tr>
<td>Window Glass</td>
<td>Hyper Glass Barrier</td>
<td></td>
<td></td>
<td>Spray gun</td>
</tr>
<tr>
<td>Mirror</td>
<td>Clean Self Coat MC-T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polycarbonate</td>
<td>Primer for resin</td>
<td>Alcohol base</td>
<td>Antistatic/Self Cleaning Super Hydrophilic</td>
<td>Squeegee</td>
</tr>
<tr>
<td>PET film</td>
<td></td>
<td></td>
<td></td>
<td>Spray gun</td>
</tr>
<tr>
<td>acrylic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resin base material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stainless steel</td>
<td>Super Clear Vision AS or SP</td>
<td>Water base</td>
<td>Antistatic/Self Cleaning Super Hydrophilic (SP has Photo catalyst)</td>
<td>Squeegee</td>
</tr>
</tbody>
</table>
Preparation before the application

● **Outer wall・Aluminum Panel・Tile**
  Clean up with high-pressure washing, coat after it’s dried.
  In the case of fluorine paint, wash the dirt with the high-pressure washing. There is a case it is better to wipe off with alcohol after drying.

● **Concrete・Stone**
  Wash the dirt with the high-pressure washing, then drying. Apply the penetration inhibitor sealer, coat after it’s dry.
  ※Because depending on the type of penetration inhibitor sealer, there is a case in which anti-fouling coat does not adhesion, please check in advance.

● **Glass・Solar Panel・Mirror**
  ① See P6~P8

● **Stainless steel**
  ① Rinse with pure water
  ② Polishing the surface with the Shining cleaner until water is not repelled.
  ③ After polishing, immediately apply a top coating within 10 minutes because the oxide film reproduces.
Adhesion hydrophilic check (glass solar panels, mirrors)

- **Adhesion hydrophilic check**
  1. Wash off the dirt of the surface using a microfiber squeegee and cloth, then take off the liquid with a squeegee.
     ※Do not use detergent. Only water.

  2. When there is still dirt on the glass surface, it has been stripped by the scraper.
     ※Be sure to spray the water with a scraper. Otherwise, there is a possibility that a crack enters the glass when you slip the blade.

  3. After simple cleaning, check whether the coating agent is adhered with the cloth. Glass center and edge part.

  4. Repeat 4 times and if there is no unevenness, proceed with the whole application. If you see unevenness, do not apply 4 times. Three times are enough.

- ※When the coating agent is adhered (OK), check P9 coating
- ※When the coating agent is not adhered (NG), check P7 preparation
Preparation 1-① (Glass・Solar panel・Mirror)

● Window glass・Solar panel・Mirror
Cover the bottom with masking membrane. Put Glass Cleaner (Degreaser) to Pad & Buff and take off the dirt on the glass.
When it is dirty, please rub the buff with little pressure.

※1sqm needs 10g of glass cleaner. The amount of liquid depends on the dirtiness.

When you clean up a solar panel, wash off the glass cleaner with generous amount of water.

Note for the glass cleaner
When the cleaner is repelling like a photograph, please rub with a pat. There are oils comes from the surface. When there are no water repel the glass, it is clean.
If the cleaning is not perfect, the coating can not adhere the glass surface.

Note
If you do not remove the glass cleaner quickly, the surface will becomes harden. Then it becomes difficult to remove with a squeegee. In this case, spray the water to the surface and wash off by squeegee quickly.

Remove water with paper towels and a squeegee.
Points for glass cleaner (Degreaser)

① Roughly apply glass cleaner to the entire glass. Photo 1
② While applying a water spray, extend to the entire with a little force. Photo 2
③ During the glass cleaning, the place where it is a gap is still oil film. Rub that part strongly. Red circle on Photo 3
※ If there is oil film on the glass, the coating liquid would be repelled. Make sure to complete this step.
Note: when the glass is big, please divide the glass to clean up.

Red circle has too many oil films. In this case, use the sander to clean up.
※ Clean up by hand around the corner.
Preparation for top coating
(Application to the glass by squeegee)

Tools

- Squeegee
- Microfiber Cloth
- Clip
- Masking Membrane
- Coating liquid

How to set up

① Fold microfiber cloth in two, put a squeegee on it.
② Put to tighten 4pcs of clip, Never make Flexure
③ Spread the Masking Membrane, put a coating liquid. At First, 3g of coating solution for the micro chamois evenly.
④ A coating agent put in a 300ml bottle, and then apply 10g per 1 square meter.

※ Put the liquid directly from the bottle, or pour it to a masking membrane.
Top Coating (Application to the glass by squeegee)

- Squeegee application

1. Apply vertically. Maximum 4 times to apply.
2. Refer to the following, please stop the application before the uneven spots appear.

First application (Top to bottom)

Second application (Top to bottom)

Third application (Bottom to top)

Fourth application (Bottom to top)
Top coating (Preparation of Spray gun)

**Tools**

- Spray Gun
- Regulator
- Filter
- Air compressor
- Coating Agent

**Pattern**

1. If the compressor contains Oil or dust, please use a filter.
2. Air Pressure: 0.2～0.3Mpa

**Check the application and amount of coating liquid**

1. Put water in the cup and check sprayed amount. Adjust it if necessary.

**Note:**
You see water droplets on the photo of the left side above. It was applied too much and has the risk of making a mottled appearance when it is dripped. It is seen a bit cloudy when you spray right amount to the substrate. It can’t form a strong coating film when sprayed amount is too small. Make sure to apply evenly.
Top coating (Spray gun application for outer wall)

- Adjustment of Spray gun

① The distance from the substrate is within 10cm

Estimated amount of coating
The coating amount of the per square meter is 15g ~ 20g. (Standard) Then move it to the left and right or up and down 30cm per a second.

Important point:
① It’s necessary to adjust the application distance from the substrate depending on the temperature, the wind and the substrate. When the distance between the base material is too far, the coating agent becomes powder because it volatizes before the application. It does not appear the performance correctly.
② When the application of uneven surface such as diatomaceous earths are on it, please apply double amount of the coating liquid.
③ The caliber of the gun could be a 1.2 or higher
④ Because the solution is transparent, please apply evenly to avoid non coated spots.

Apply in parallel with little overlap. (In the case of an elliptical pattern)
Basic Cleaning (Spray gun)

Cleaning step after using Air Spray gun

1. The remaining liquid is disposed or pour in a separate container.

2. Put 50ml water to spray cup.

3. Tighten the lid of the cup. Hold the air holes in the cup during the shaking it.

4. Wash the inside of the cup with the supplied brush and discard the water. Please put the water about 50ml again.

5. Spray one-third of water.

6. Press the hole in the nozzle cap with your fingers. Gently pull the trigger. Water flows back you can wash in the nozzle. Repeat 4-5 times.

7. Note) Do not pull the trigger strongly.

8. Please spray to the rest of the water.

9. Please clean the silica or the like attached near air cap with the supplied brush.

10. Wash the inside air cap with the supplied or special brush. Get rid of fine dust if air blow.

After attaching the air cap, cleaning it lightly with a supplied brush. Then wipe off with clean cloth.

Notes:
After application, make sure to clean up the spray gun that was used. If the liquid dries in the spray gun, the silica in it makes harden. The coating pattern becomes narrow or non-uniform because nozzle is clogged, . The basic cleaning uses the water (tap water), but use the pure water when it is available.
Top coating (Spray gun application for window glass)

● Adjustment of Spray gun

① The distance from the substrate is within 10 to 15cm.

Estimated amount of coating
The coating amount of the per square meter is 10g ~ 15g. (Standard)
Then move it to the left and right or up and down 30cm per a second.
The glass surface becomes wispy wet by fine particles after the application.
Then it dries within 5 second is the correct amount of coating.
※ Drying time depends on the environment.

Important point:
When water droplets are visible when you apply to a substrate, the coating amount is large. (It will be dripping lines)
As shown in the photograph above, the coating amount is ideal that look a little cloudy.
When the coating amount is small, it does not appear performance unable to form a coating film.

Apply in parallel with little overlap.
(In the case of an elliptical pattern)
Removal / Verification

● Removal (Substrate: Glass)
  ① Same as the glass cleaning step, rub the surface by glass cleaner with spraying water. Then the coating surface will be removed.
  ※ Repeat the glass cleaning step twice to confirm the surface is clean.

● How to check the coating adhesion after application

Because of the transparent solution, please make sure the degree of adhesion in the following way.

One minute later after the application, put a surface resistivity meter on the coating surface. Check antistatic function.

Note) If humidity is high, you may see the better number like 1 or 2 square Ω compare to the original number. Water contents (High humidity) increase the number.
Also it could be an error when the humidity is too low.
※ It can not measure the value when the substrate is too hot.
Ex) Before application/11 power to 12 power Ω of 10
    After application/ 8 power to 10 power Ω of 10

Surface resistivity

Before Application (An error)

After application (10^3)