

For Outer wall / Window glass
Antistatic, super-hydrophilic antifouling coat

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.

Preparation / liquid preparation

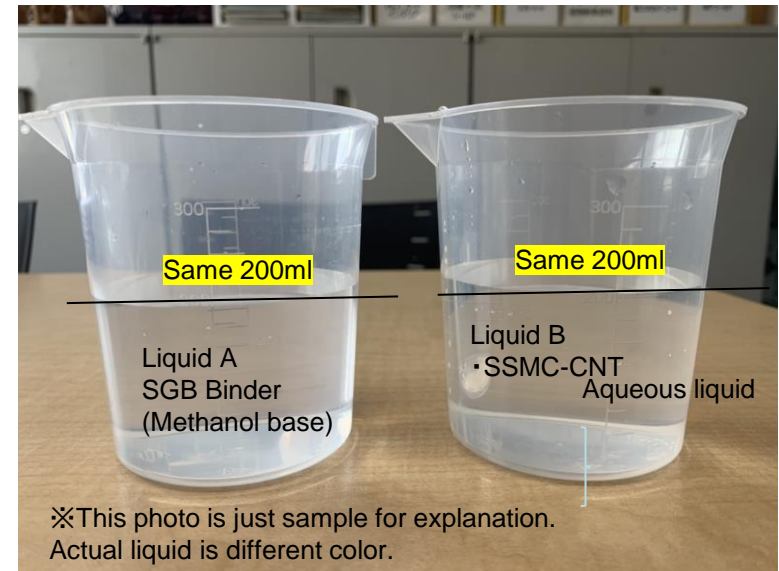
The three types of coating agents, Solar Self Maintenance Coat CNT, Solar AR Maintenance Re-Coat is two-component types. Please prepare the liquid in advance.

【 About the mixing order 】

Add Solution B to Solution A in a 1: 1 volume ratio and stir.
It is not 1: 1 by weight.
Mix the same volume of volume on the scale of the cup like Photo.

Example) Put 1L of the measured solution A in a container, add 1L of the measured solution B and mix.
Be sure to put solution B into solution A.

Close the lid and shake for about 20 seconds.



【 Handling precautions 】

The liquid agents are in the same container because the specific gravities of liquid A and liquid B are different, but the weights are different.

The liquid immediately after compounding reacts and has a little heat, but it settles down in about 30 minutes. It will be used after it is officially stabilized, so please use it after 6 hours after compounding.

After compounding, the expiration date is up to 1 month. As it deteriorates, it gels.

Please store in the refrigerator or in a cool and dark place.

The liquid medicine warranty is 6 months after shipment, but the warranty after preparation is not covered.

Products list for each substrate

Substrate	Products	Type	Features	Application Method
Exterior wall Aluminum Panel Concrete Tile	Super Glass Barrier	Alcohol base	Antistatic/Self Cleaning Super Hydrophilic	Spray gun
Solar Panel Window Glass Mirror	Solar Self Maintenance Coat CNT Solar AR Maintenance Re-Coat	Alcohol base	Antistatic/Self Cleaning Super Hydrophilic Photo catalyst	Squeegee Spray gun
Polycarbonate PET film acrylic Resin base material	Primer for resin	Alcohol base	Antistatic/Self Cleaning Super Hydrophilic	Squeegee Spray gun

Preparation before the application

● Outer wall・Aluminum Panel・Tile

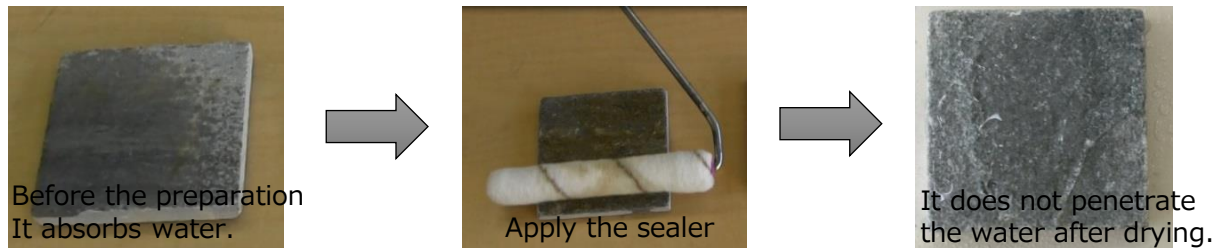
Clean up with high-pressure washing, coat after it's dried.

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 adhere, please check in advance.



● Glass・Solar Panel・Mirror

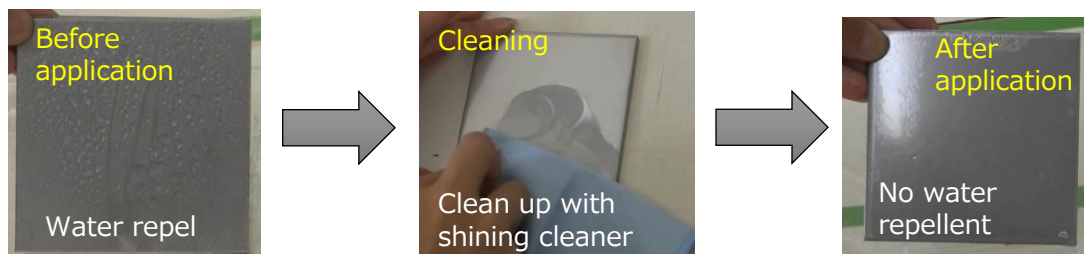
①See P6~P8

● Stainless steel

①Rinse with pure water

②Polishing the surface with the Shining cleaner until water is not repelled.

③After 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 use the microfiber squeegee and cloth, take off the liquid with squeegee.

※ Do not use detergent. Only water



② When there are still dirt on the glass surface, it has been stripped by the scraper.

※ Be sure to spray the water with scraper. Otherwise, there is a possibility that a crack enters the glass when you slip the blade.



Scraper



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

④ Repeat 4 times and did not show the unevenness, please proceed the whole application. If you see the unevenness, then do not apply 4 times. Three times are enough.

※ When the coating agent is adhered (OK), check P9 coating

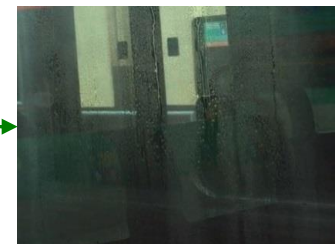
※ When the coating agent is not adhered (NG), check P7 preparation



OK



NG



Preparation1-① (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.

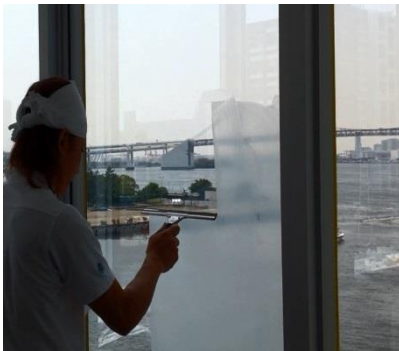
※1sqm needs 10g of glass cleaner. The amount of liquid depends on the dirtiness.

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.



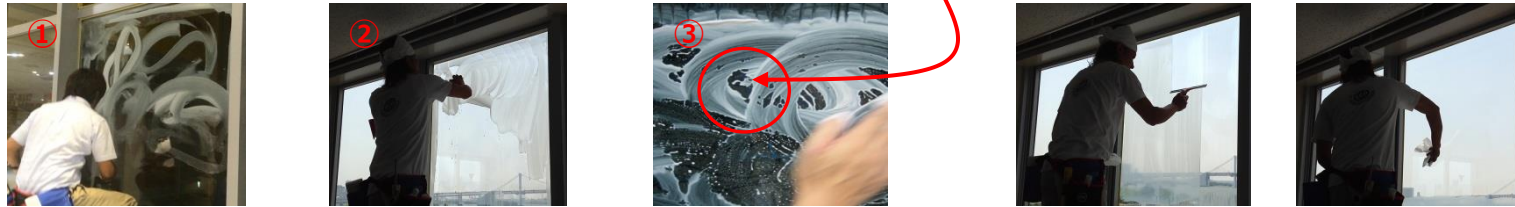
Note

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.

Preparation1-② (Glass·Solar panel·Mirror)

●Points for glass cleaner (Degreaser)



①Roughly apply glass cleaner to the entire glass. Photo 1

②While applying a water spray, Extend to the entire with a little force. Photo 2

③During 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

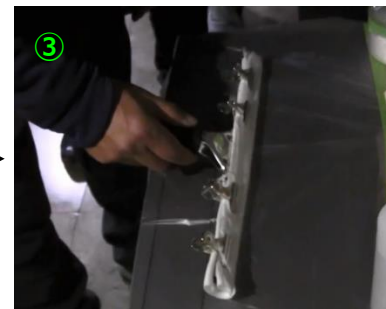


Coating liquid

● How to set up

- ① Fold micro fiber cloth in two, put a squeegee on it.
- ② Put to tighten 4 pcs 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.

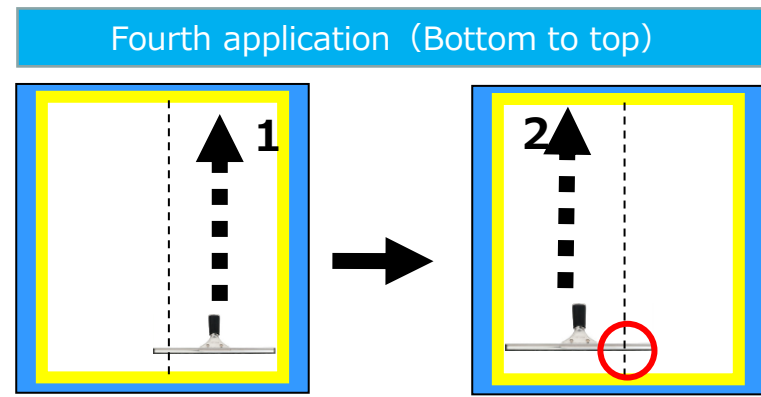
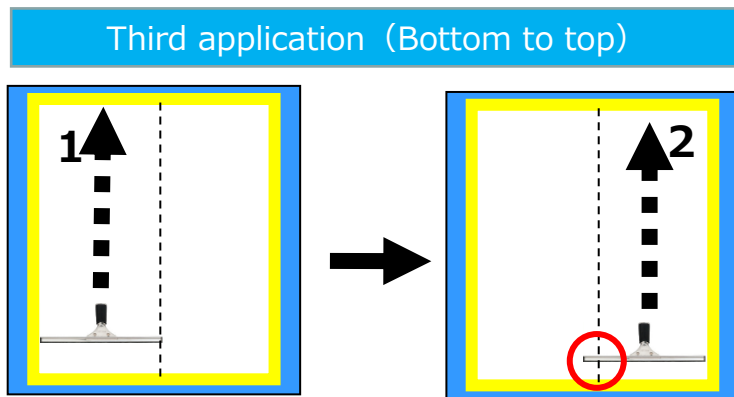
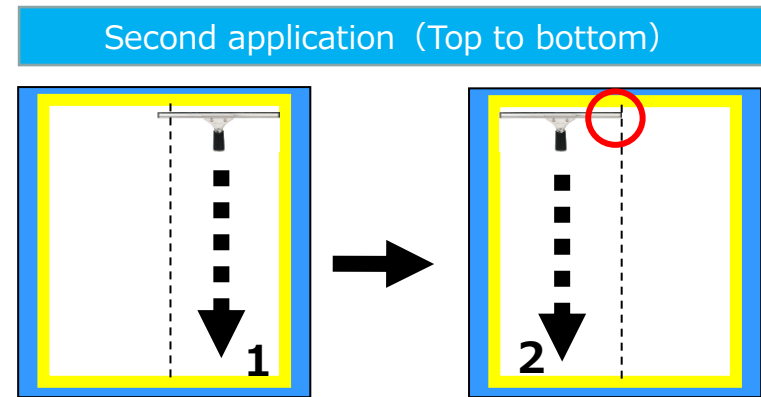
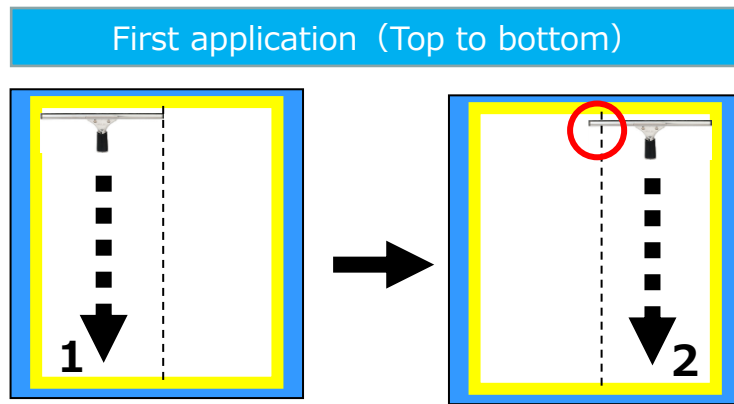
※ Put the liquid directly from the bottle, or pour it to a masking membrane.



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.



Preparation of Spray application

● Tools



Devlbiss LUNA2i-R-254-G-K
Gravity type/Nozzle size 1.3



Air valve regulator
HAV-503-B



O-Light resin cup
Gravity type 400cc



high coupler
socket 20PFF



hose

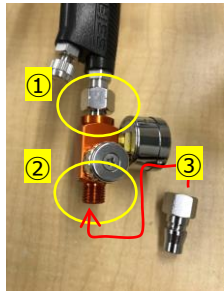


Air Compressor
More than 1 horse power
Maximum pressure 0.7Mpa or more



Coating agent

● Precautions for hose and spray gun attachment



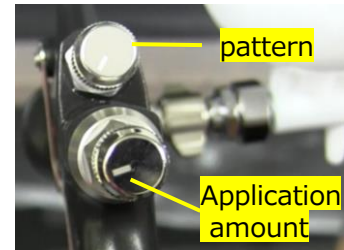
Check if the high coupler and hose are engaged.

● Reasons for using resin cups



The cup built into the main unit does not have a hole in the lid, so clogging may occur. Use a resin cup with a hole. In the case of metal, the coating agent may react.

① gun adjustment



pattern : Please turn until it stops. (maximum)
Application amount : When applying to the glass surface, rotate about 90 degrees from the closed state. When applying to the outer (inner) covering material, rotate about 180 degrees from the closed state

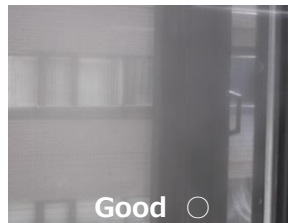
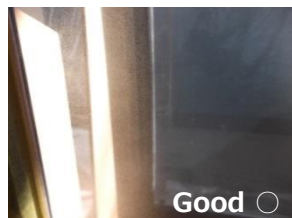
② Pressure when spraying 0.1~0.15Mpa



If the wind is strong, please adjust while increasing the pressure.

● Check the application and amount of coating liquid

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.

Spray application method

① Approximate distance to base material

Coating on exterior(Interior) materials/resin substrates: within 10 cm
When applying to window glass: within 10-15 cm

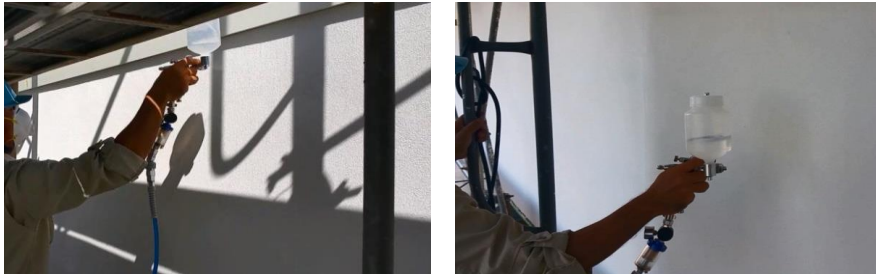
② Coating speed & times

The basic rule is to apply 2 times in total, 1 time to the left and right, and then 1 time to the top and bottom at a rate of about 30 cm per second.

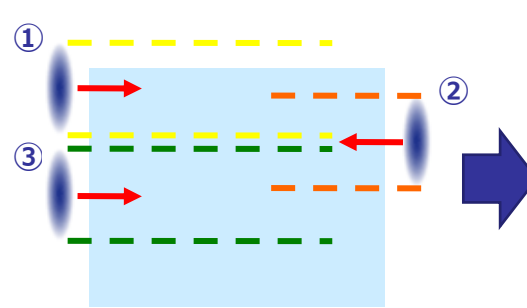
③ Application image to window glass

The image of the correct amount of application is when the glass surface is slightly wet with fine particles immediately after application and dries within 5 seconds.

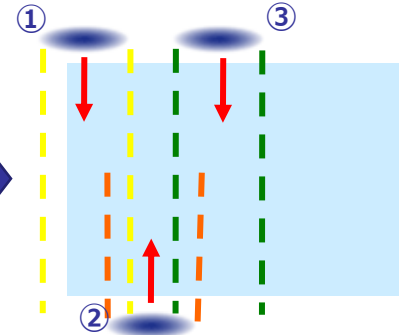
*The drying speed varies depending on the environment, so it is only a guideline.



First time
Apply horizontally
while overlapping slightly.



2nd time
Apply vertically
while overlapping slightly.



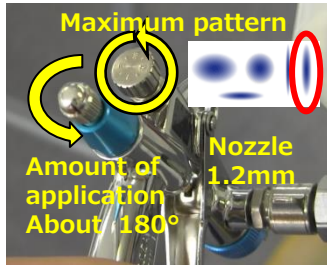
Precautions when applying to exterior materials:

- (1) It is necessary to fine-tune the distance depending on the air temperature, wind, and substrate temperature. If the distance is too far, it will volatilize before it reaches the base material, and the powder will just stick to the base material, resulting in poor performance.
- (2) Blow twice the normal amount on uneven surfaces such as diatomaceous earth.
- (3) The caliber of the gun can be 1.2 or more.
- (4) Be careful not to spill the liquid, as the liquid is a transparent and it is difficult to see where it is being blown.

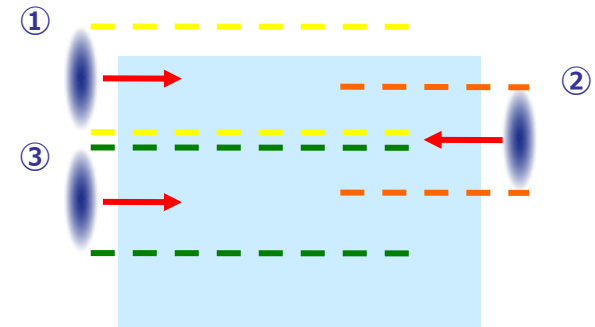
Top coating (Spray gun application for outer wall)

● 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.



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

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 volatilizes 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.

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.

Note) Do not pull the trigger strongly.



7 Please spray to the rest of the water.



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



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



10 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.

Removal / Verification

● Removal (Substrate : Solar panel)

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 compared 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



Before Application
(An error)



After application (10^8)