

World No.1

Nano technology coating

Antistatic, Super Hydrophilic and  
Anti fouling coating series

Application record

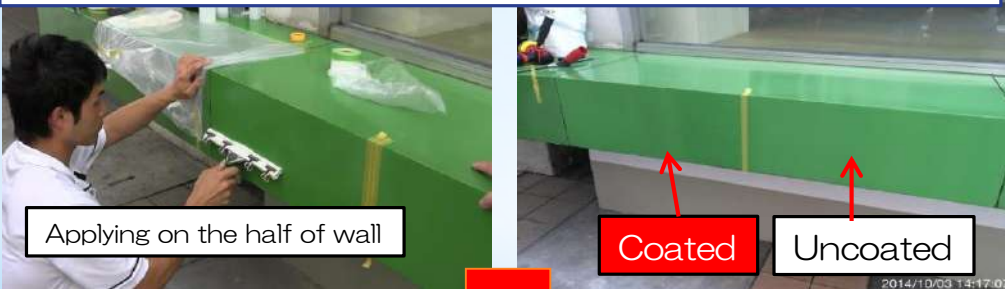


# Verification for outer wall of Greenfield in Philippines

Green field Area in Manila



Test application of Super Glass Barrier on outside wall in Oct,2014



1 year and 6 months later On March 12<sup>th</sup>,2016



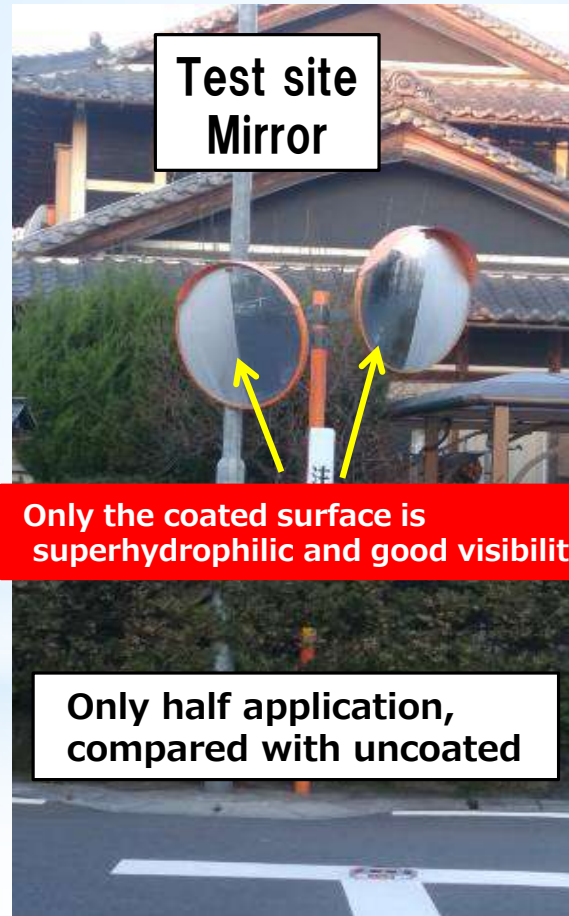
## Philippine Application Examination: Demonstration test of super hydrophilic self cleaning effect

- ◆ Location: Philippines, president of paint sales company's home window glass
- 1 year test: Dirt is not conspicuous due to super hydrophilic effect, but the unapplied part becomes water repellent state in 1 month, and dirt is conspicuous.



**Case)** Application test of acrylic traffic mirror on Nagoya city in 2016, verification after one year

- ◆ verification purposes ... acrylic traffic mirror had condensation, and further became a problem in poor visibility caused by getting dirt. In order to solve them, verification of antifouling effect and super hydrophilic effect by coating was carried out.
- ◆ Verification status after one year... The coating effect maintained in all of the places where it was applied.





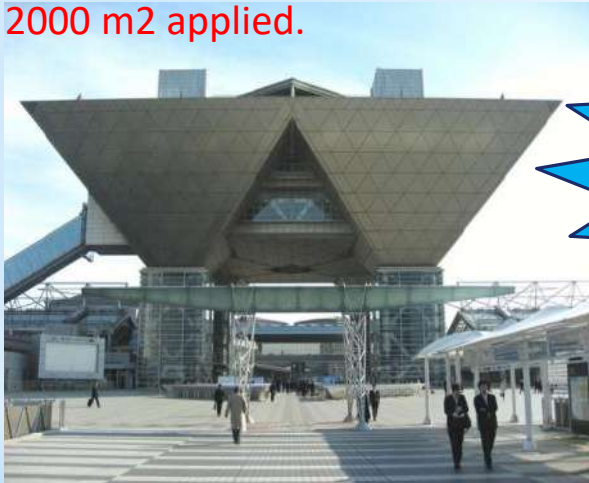
# Case 1) TOKYO Big Site West Wing Roof Top

Application for antifouling coating and outer insulation paint

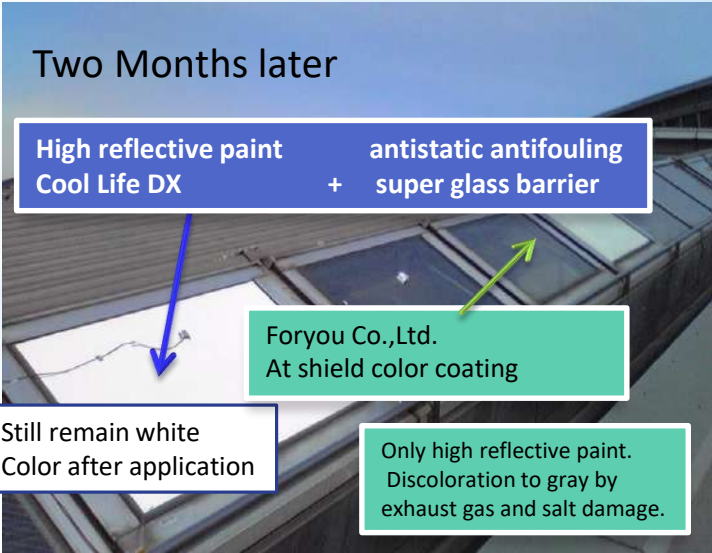
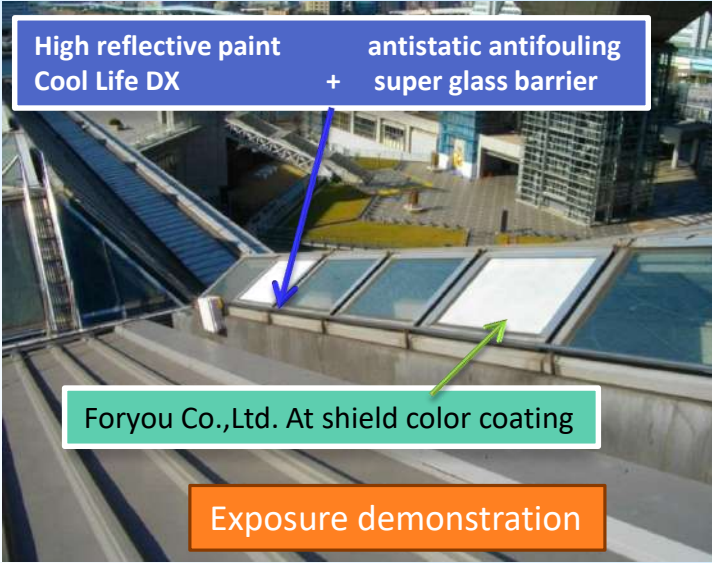
Purpose: Application to the glass for thermal barrier and heat shielding.  
Apply: To compete with other companies for thermal barrier coating, and sketch is adopted after exposure demonstration.

2000 m2 applied.

Reflectance  
Significant  
decrease



SKETCH applied 2000m<sup>2</sup>



## Case 2) Tokyo Mode College in Shinjuku

### Aesthetic maintenance purpose

Purpose: Prevent dirt such as raindrops.

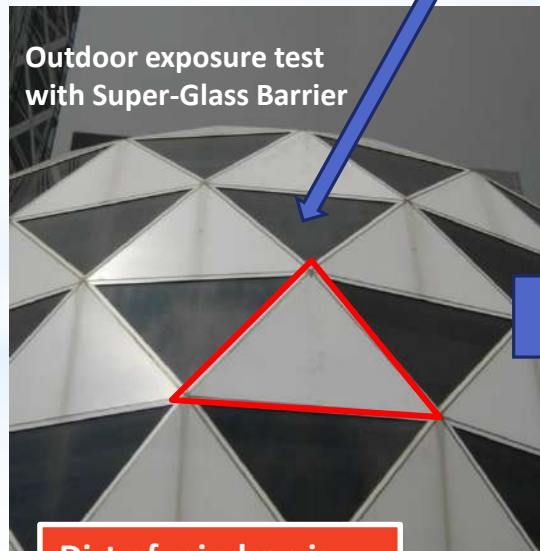
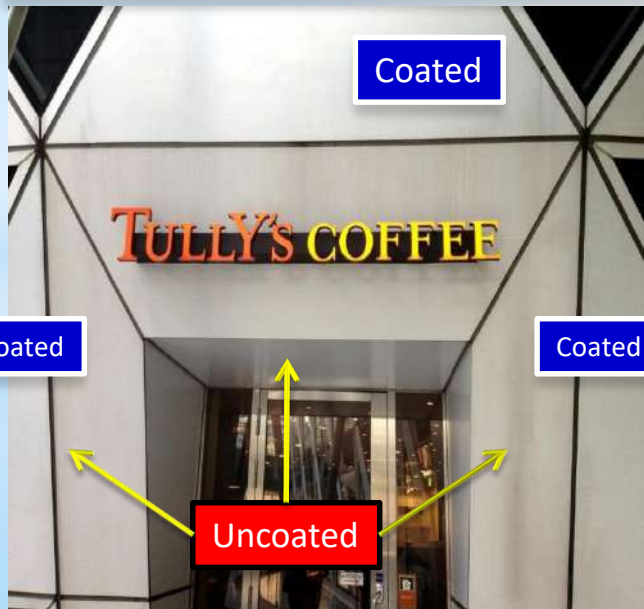
Application: Outdoor exposure demonstration, sketch is adopted.

Applied to Fluorine panels.

New panels which was non coated are noticeable dirt by the exhaust gas, compared to the panel that was coated with Super-Glass Barrier.

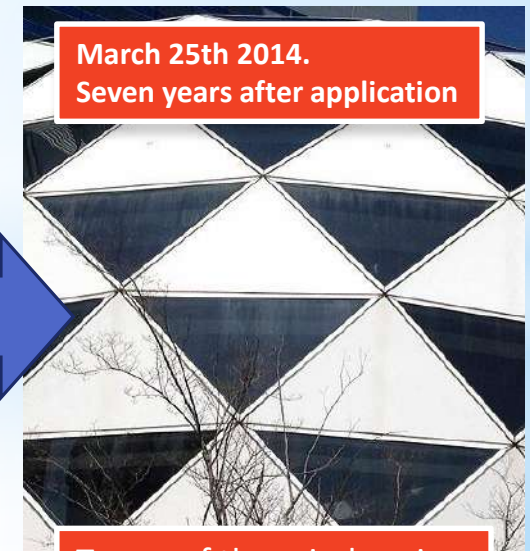


Before: Dirt of raindrop is noticeable



Outdoor exposure test with Super-Glass Barrier

Dirt of raindrop is no longer noticeable



March 25th 2014.  
Seven years after application

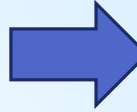
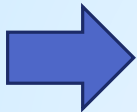
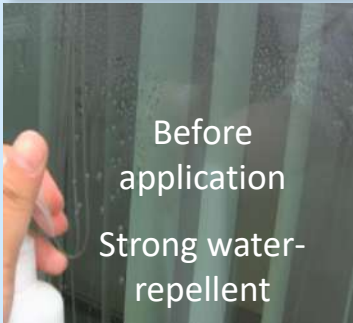
Traces of the raindrop is not noticeable



# Case 3) Airport in Japan. Passed the outdoor exposure test of window glass for 10 months

◆ June 23th, 2014

Challenge to the reduction of maintenance number and cost



◆ Verification October, 2014

① To wipe off the dirt, check the dirt adhesion  
= Antistatic effect

② Super Hydrophilic Test

③ Spray water and check the water repellent  
=Self Cleaning effect



Coated  
Less dirty

Surface resistivity  
 $10^9 \Omega/\square$

Uncoated  
Dirty

Surface Resistivity  
Error

Coated  
Super Hydrophilic

Uncoated  
Water repellent

Coated  
Less dirty

Uncoated  
Dirty

A management company of the airport in Japan, they pay 210million JPY ( 70million JPY × 3 times ) a year for the cleaning of windows. They would like to reduce the cleaning time to two per a year, then the cleaning cost becomes 140million JPY. The maintenance cost reduction is more than 700million yen if the coating can reduce the cleaning time in 10 years.



Case 4) June 2014 in Nanjing, China.  
Applied 100,000 sq. meters  
Base material: glass fiber concrete



China Tianjin: Xin gang Central Terminal  
Even the dirt is noticeable after application of the fluorine and  
photo catalyst coating, finally problem solved with SKETCH  
antistatic antifouling coat. Applied 43000m<sup>2</sup>

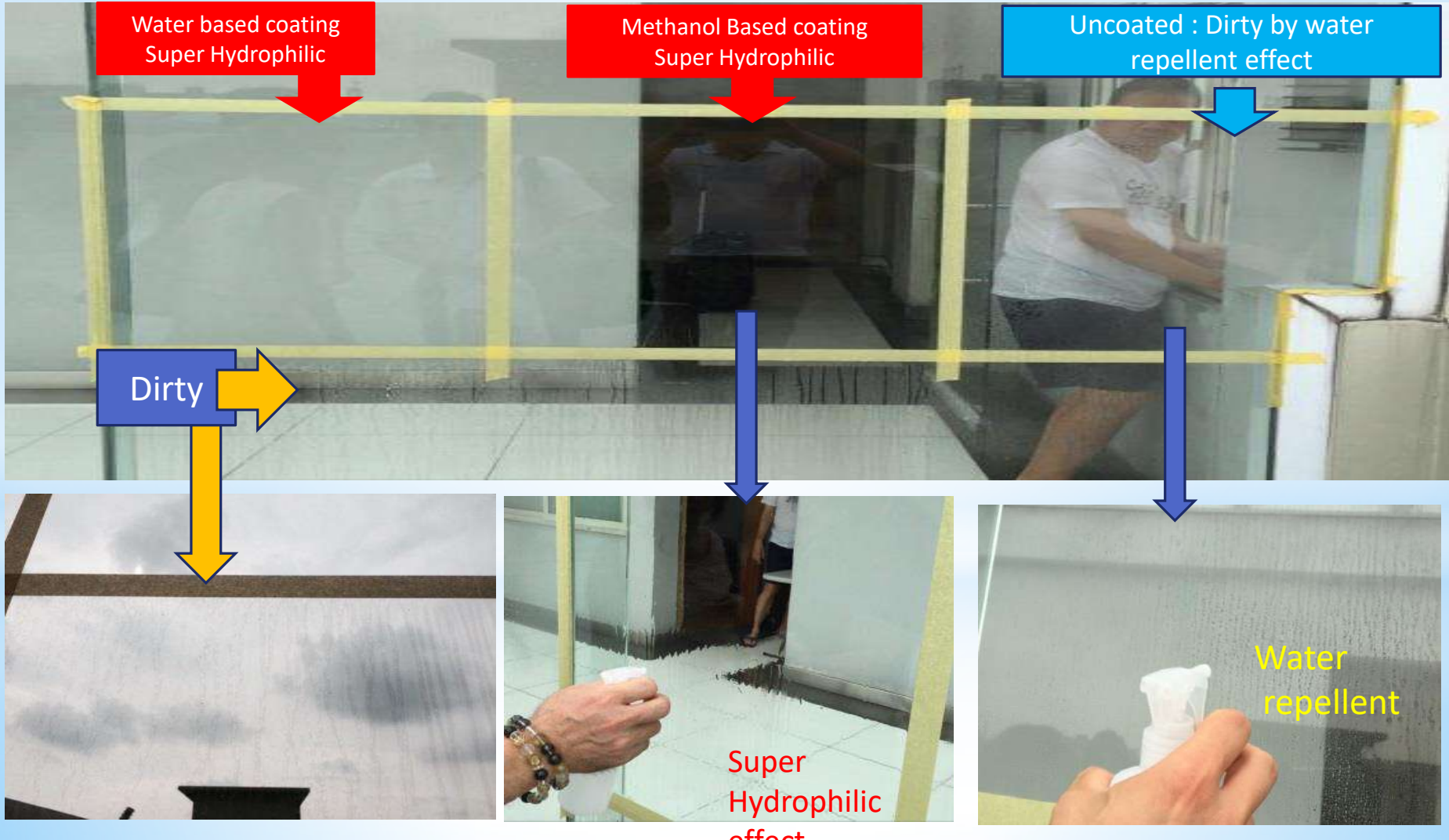
Aesthetic maintenance purpose





# Case 5) Verification test of the super-hydrophilic self-cleaning effect in Philippine

- ◆ Location: President of paint sales company private home in Philippines.
- ◆ Application: At Mr. Jojo's home, after seven months of the application of the anti-fouling coat to outer window glass, antifouling effect was clearly compared with the uncoated places. Especially on the rainy day, the coated glass was clean, the rain drops at the bottom of the coated glass was noticeable. Obviously the dirt adhesion was difference between the uncoated and coated glass.

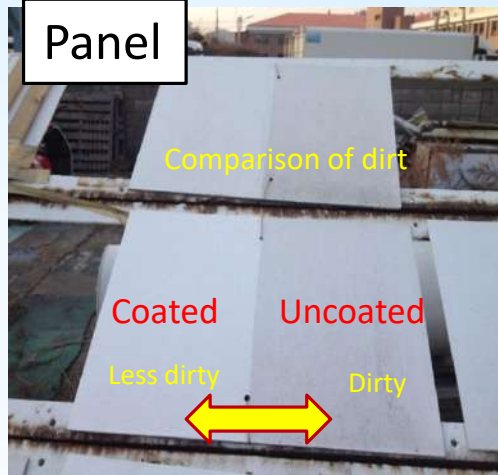
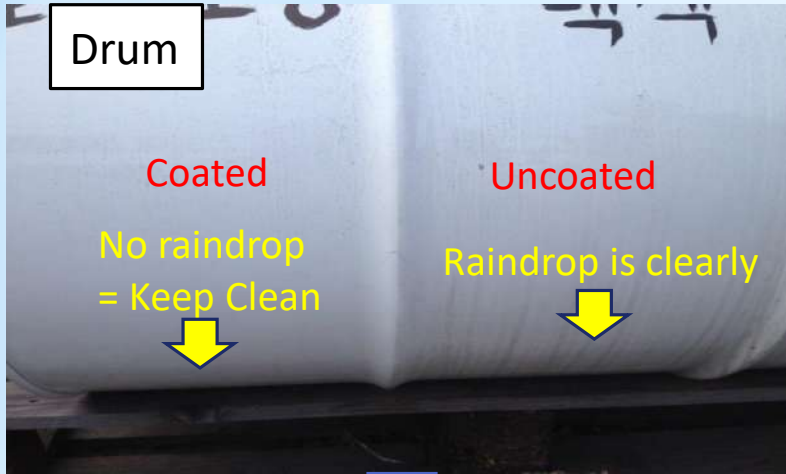




# Case 6) Super-Glass Barrier outdoor exposure test at JB paint in South Korea

March, 2014

Antistatic super-hydrophilic self-cleaning effect (After 4 months)



January 27<sup>th</sup>, 2015 after 1 year and 2 monthes



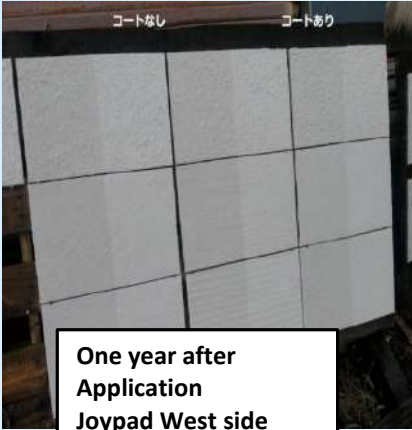
When you spray water, you can see dirt's falling with super-hydrophilic effect. It proves clearly a super-hydrophilic self-cleaning effect



# Case 7) Exterior Verification



One year after Application  
Joypad North side



One year after Application  
Joypad West side



One year after Application  
Joypad. North side



One year after Application  
Joypad. North side

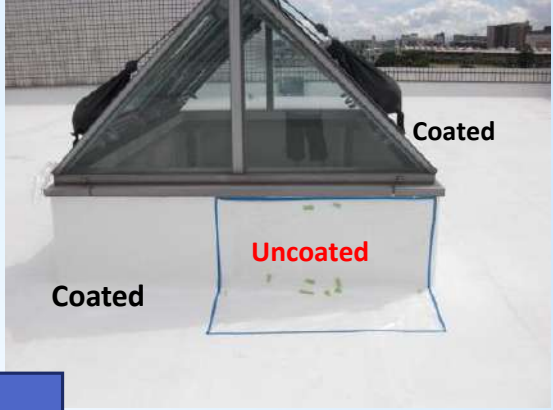


Two years after Application  
Joypad. North side

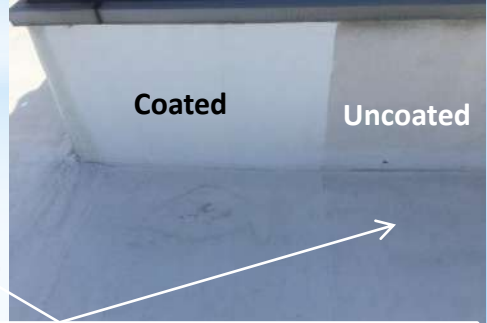
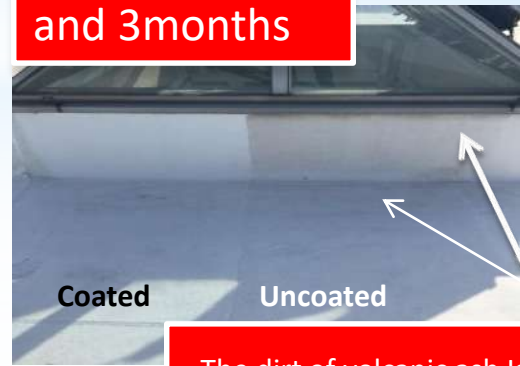


One year after Application  
Joypad. West side

# Case 8) Aquarium roof portion Kagoshima



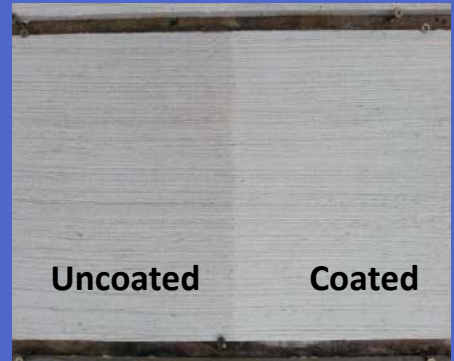
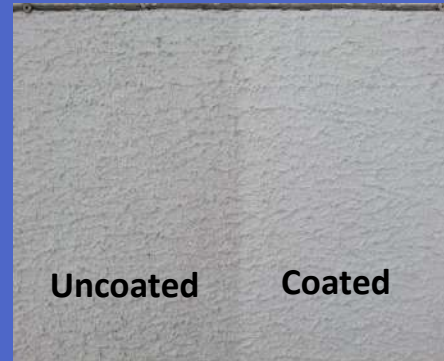
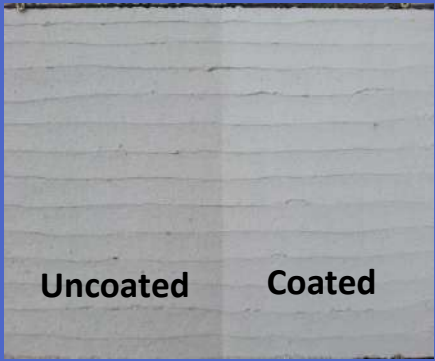
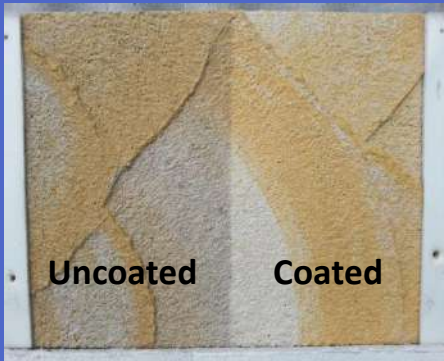
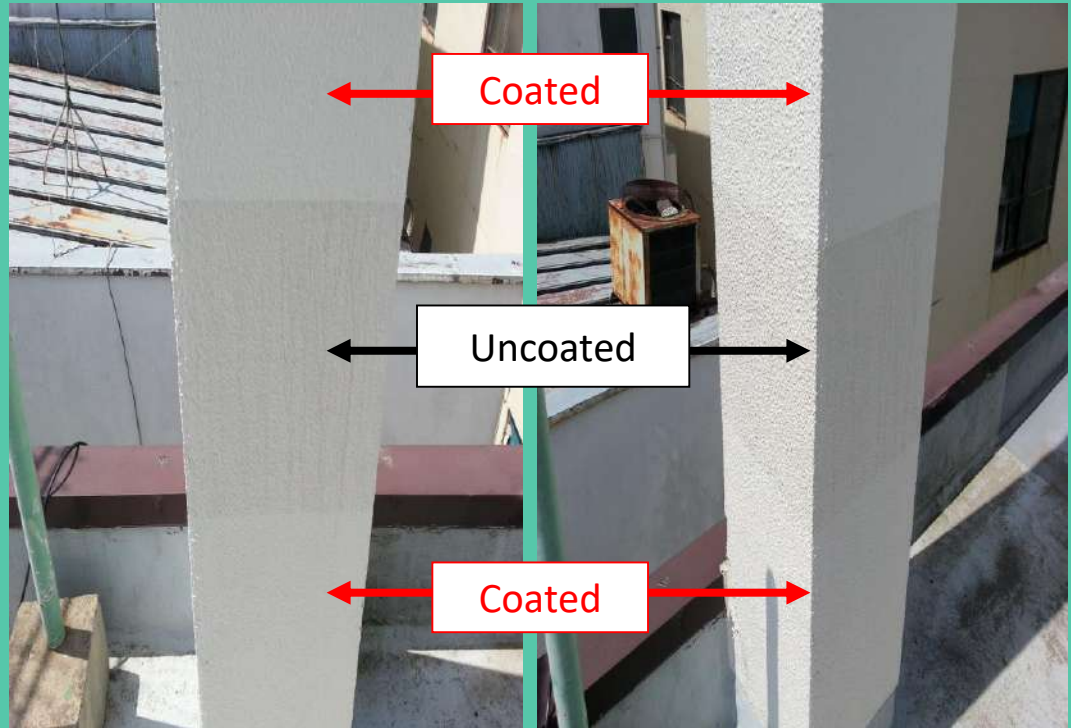
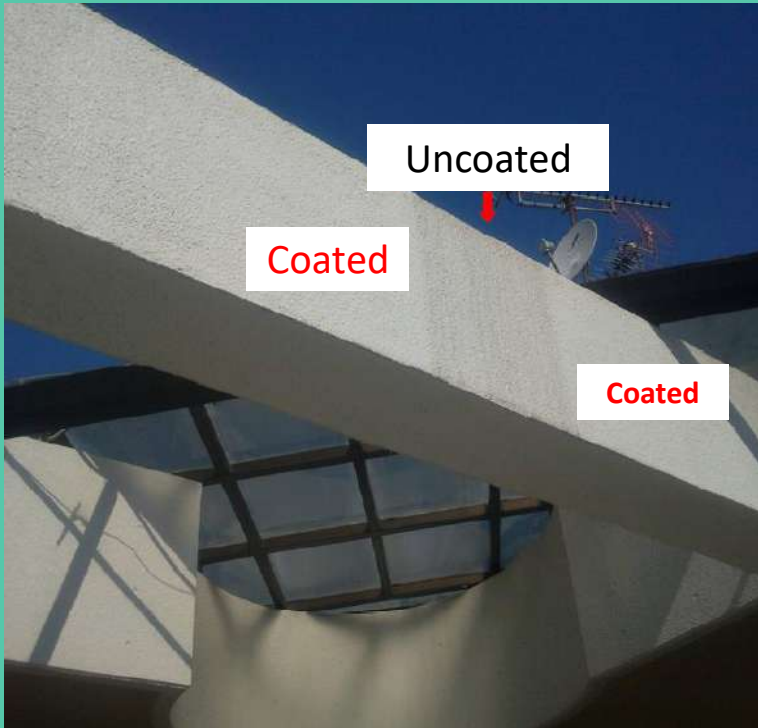
After 5 years and 3 months



The dirt of volcanic ash is noticeable only uncoated area



# Case 9) Super Glass Barrier exposure test after 2 years



# Case 10) For dirt adhesion by the exhaust gas, such as tile surface in the tunnel

To shorten the traffic blockade period and to reduce the maintenance cost are challenge for the regular cleaning of the tunnel.

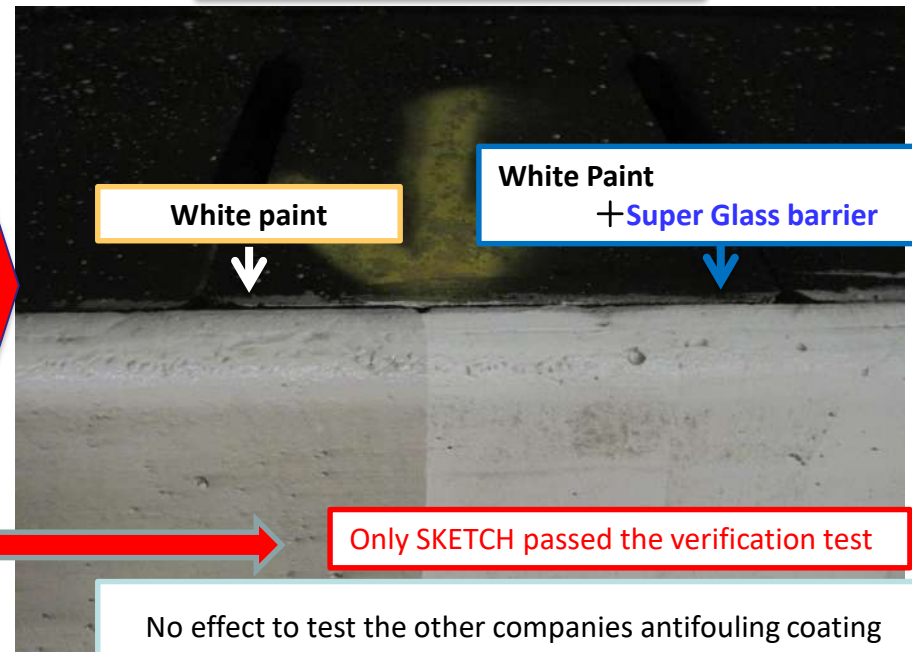
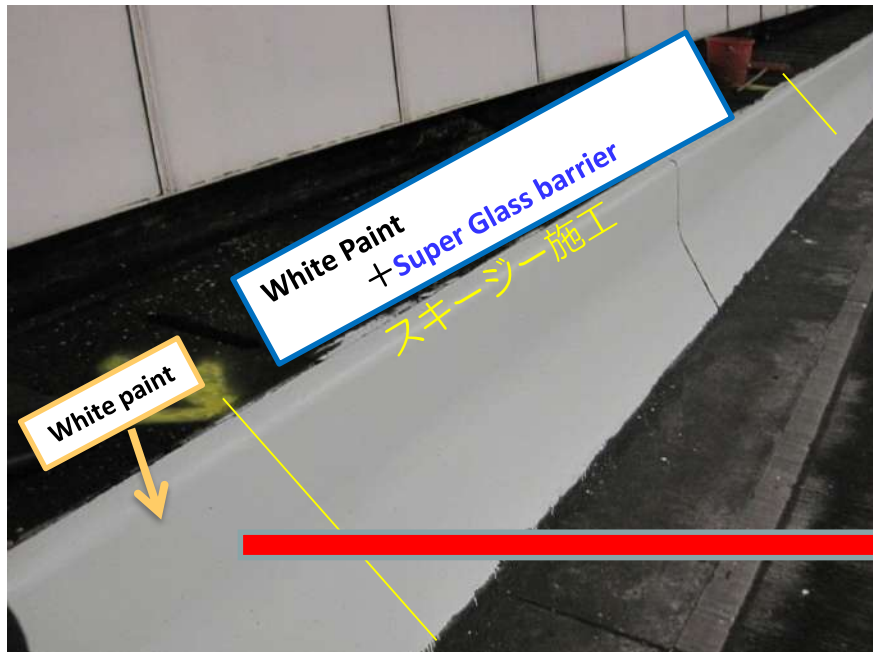
It has been developing new cleaning methods such as more effective cleaning agents and cleaning machines. Nevertheless it is not possible to significantly reduce the traffic blockade period, and did not find the new cleaning method.

- ◆ Application Date: January 2013
- ◆ Verification Date: July 2013 (after 6 months)  
June 2014 (after 1year and 5 months)

- Subject: Tunnel in Hong Kong
- Date: Jan.2013
- Material: Concrete painted surface



July 2013 (after 6 months)





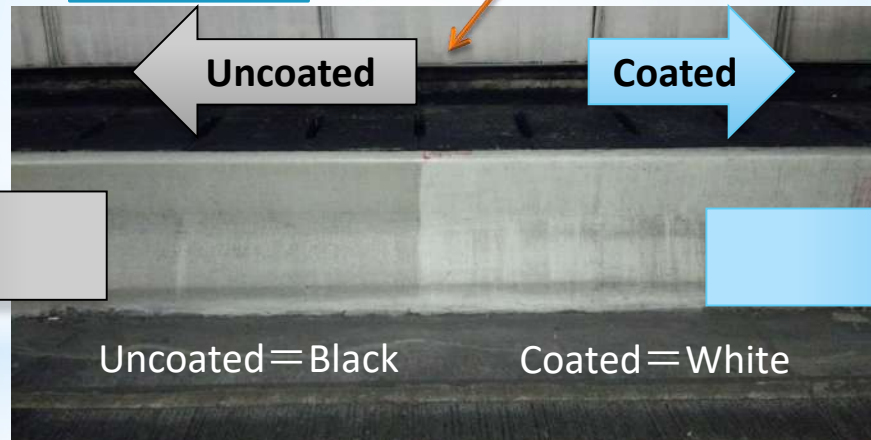
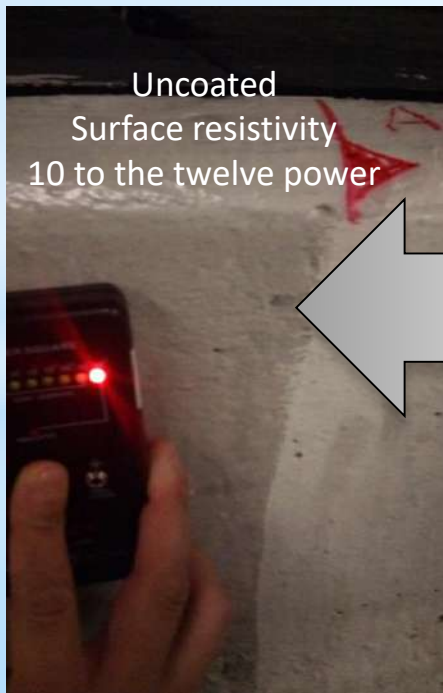
June 2014 (after 1 year and 5 months)

Current Status)

There are the differences of dirt adhesion as measured by resistance value meter and visual inspection, coating film and the effect are still remaining.



Expansion



Since the coated surface has less adhesion of soot dirt, such as exhaust gas, it looks white than non-coated parts.

= Antistatic effect is maintained.

# Outdoor Unit Cover Coat and Super Glass Barrier Application on Dec 26<sup>th</sup>,2018



Painting  
Outdoor Unit Cover Coat



Applying  
Super Glass Barrier on the Half

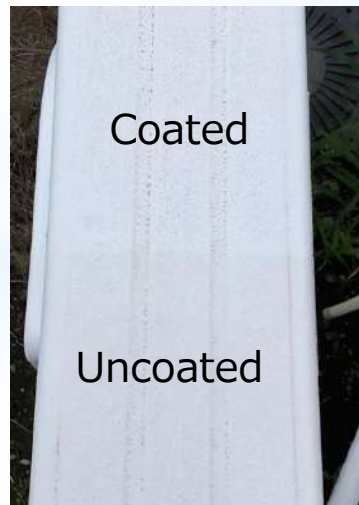
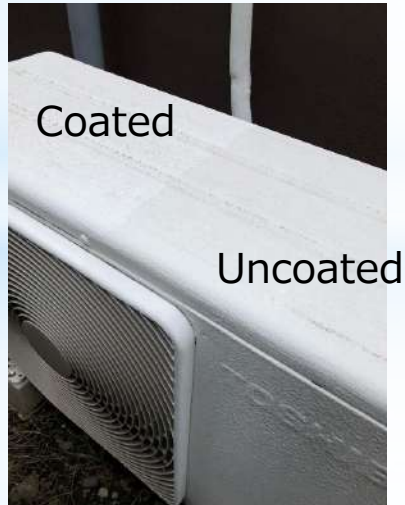
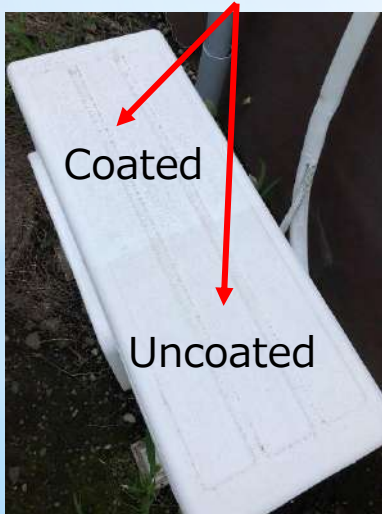


After application

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## Performance verification on July 12<sup>th</sup>,2019

### Super Glass Barrier

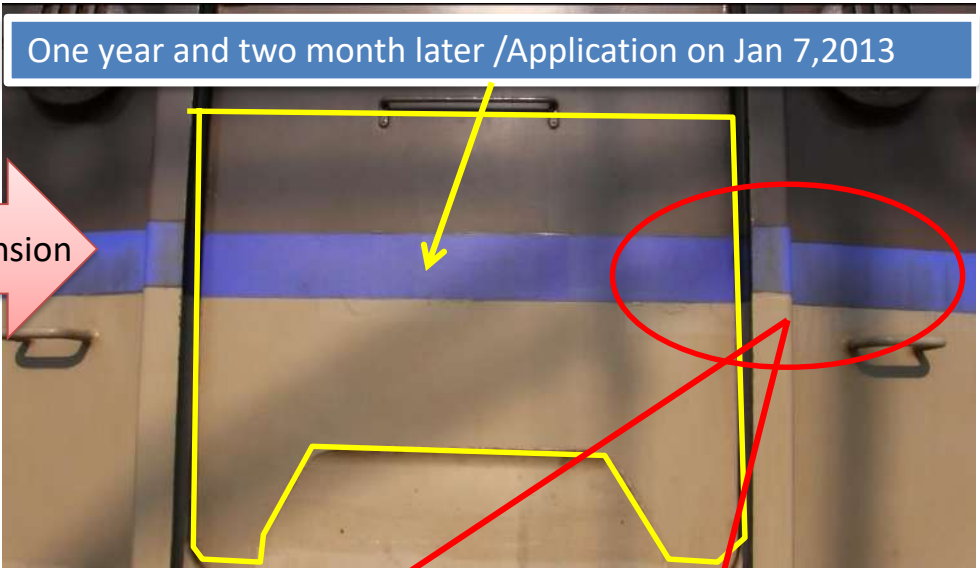




# Case 11) On March 13, 2015, The Final Verification of anti-fouling coating at West Japan Railway

Verification purposes) Although the side of the railway vehicle can be washed by machine, rear and front of the vehicle hand washing cleaning with deck brush. To verify if the number of regular cleaning maintenance is reduced by the antifouling coating.

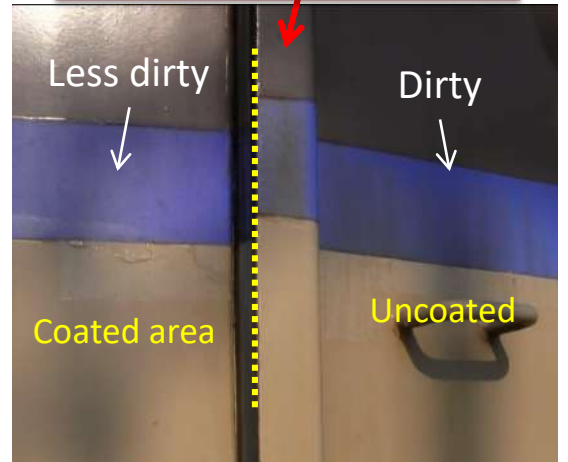
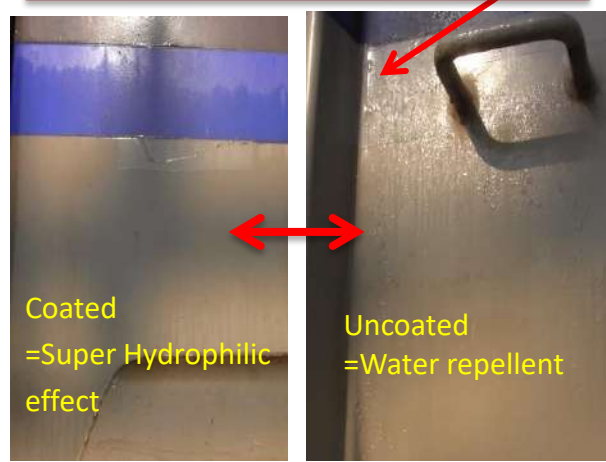
Result) After one year and two months, the coating maintained. Dirt adhesion amount is small and easy to clean up.



The verification of dirtiness

The verification of Hydrophilic

Cleanness of the surface



# Adopted antifouling coating on the body surface of Nishitetsu bus in March 2017

Purpose) Since the connected buses can't enter inside the wash machine and can not be cleaned, the long-term aesthetic maintenance effect of the bus body surface was evaluated by the antifouling effect of our coating solution. 18 pcs of connected bus of Nishitetsu was tested, Finally they adopted not only connected bus, but also normal bus. Implementation on painted body surface and cutting sheet surface.



Polishing as cleaning



Applying Primer



Applying coating solution





# Case 12) Renewal & Beauty Maintenance business

## Clear view with Water stain remover and super-hydrophilic self-cleaning coating





Subaru exhibition airplane



JR West bus



Ena tunnel



Hinachi dam



Tokyo nursing home



Shop in Tokyo



Car dealership





# Case 14) Coating for cars

Snow removal effect

No effect

Effect

Uncoated

Coated

Super Hydrophilic states

Thawing promotion effect

No effect

Effect

Uncoated

Coated

★Application test to the wheel  
One year later



Uncoated



One year after the application

★Application to  
the side mirror

