Proposal for Antifouling Coating in Accommodations

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Introduction

Entering an era when energy-saving and environmental efforts are requisite

Recently, in the accommodation business, environment-conscious efforts include the promotion of energy savings, reduction of waste, and the promotion of green procurement. Some efforts for roof greening, employment of LEDs, and installation of solar panels have not been easy to implement in terms of cost and labor.

The proposal we make is easy to introduce into cleaning, which accounts for a large portion of the accommodation business, and leads to enforcement of the energy-saving and environmental efforts.

Water-Based Completely-Inorganic AD-Tech COAT

Water-based completely-inorganic coating agent

AD-Tech COAT

Patents acquired (one in Japan, one in the U.S.)

Completely-inorganic hydrophilic antifouling coating agent based on water and silica

Completely inorganic: Composed of nano-size silica, inorganic additive and water only.

Workability: Allows you to wok easily and briefly to finish beautifully. Overcoating and repair are also easy.

Eco-friendliness: Carbon free, VOC free, no distasteful odor caused by volatilization

Hydrophilicity: Coated surface of inorganic base material has high hydrophilicity brought about by silica and absorbent.

Safety: Water-based inorganic chemical compound in neutral regions, friendly to people and the environment, and noncombustible

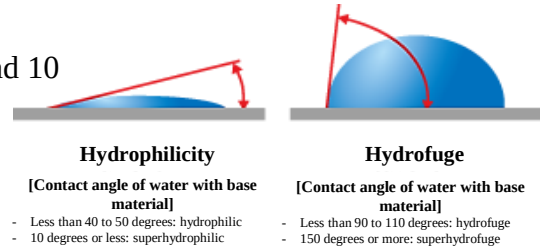
Appearance: Slightly opaque transparent liquid (it will be transparent after application because it is ultrathin film)

Transparency: 50-nm ultrathin film whose light refractive index is lower than that of glass improves transparency.

[What is hydrophilicity?]

The contact angle of water with base material of 50 degrees or less is generally called hydrophilic and 10 degrees or less is called super hydrophilic.

* The contact angle varies depending on the surface condition of the base material.



Hydrophilicity

[Contact angle of water with base material]

- Less than 40 to 50 degrees: hydrophilic
- 10 degrees or less: superhydrophilic

Hydrofuge

[Contact angle of water with base material]

- Less than 90 to 110 degrees: hydrofuge
- 150 degrees or more: superhydrofuge

[Advantages of hydrophilicity]

● ● It is possible to obtain a self-cleaning effect in which contamination can be removed by rain or showers.

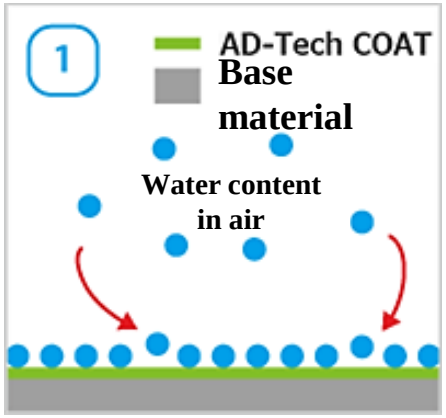
● Water droplets do not remain on the surface, enabling prevention of annular stains due to the lens effect.

● It is possible to wash away oil stains with water.

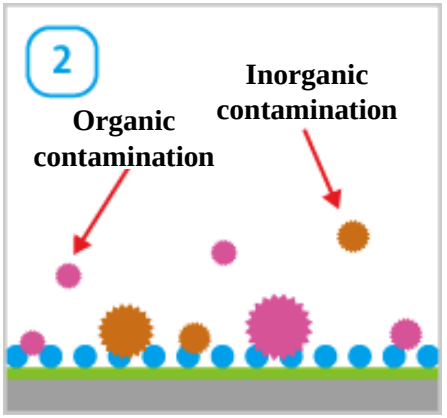
Features of Water-Based Completely-Inorganic AD-Tech COAT

Mechanism of hydrophilic antifouling

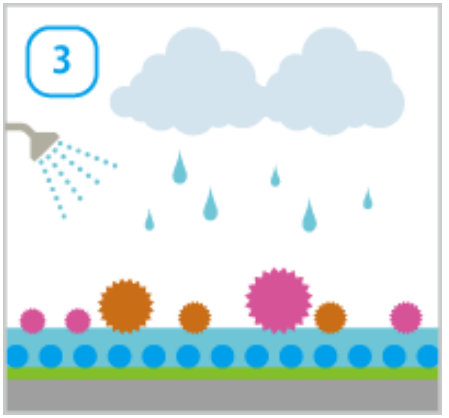
The extremely fine texture (irregularities) formed on the surface of the film due to the coating and the water film formed through absorption of water in the atmosphere make the contamination float. When water is poured there, the water in the film swells due to the added water and the contamination floats away with the water. In addition, film containing water makes dust unlikely to attach due to its antistatic effect.



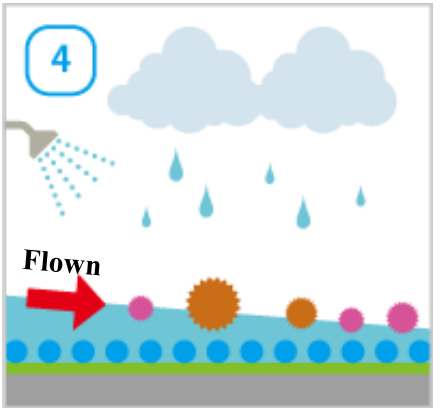
AD-Tech COAT exhibits its effect immediately after its application to the target base material, and absorbs water from the air onto the coating surface forming the water film.



As the surface of the base material is covered with a water film, attached contamination floats on the water film.



When rain or showers are poured over the coating surface, it exhibits an affinity to the water below and the contamination further floats.



When rain or showers are is further poured over the coating surface, the contamination floats away with the water.

Features of Water-Based Completely-Inorganic AD-Tech COAT

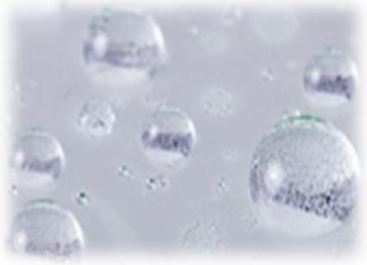
Durability, weather resistance

As AD-Tech COAT is based on silica and uses water as a solvent, it contains no chemical compounds that cause deterioration from ultraviolet rays. Therefore, the film remains unless the base ages. A weather resistance test demonstrates that little deterioration and discoloration occur due to ultraviolet rays for over 20 years. Also, it tightly adheres to inorganic base material due to hydrogen bonding, and its film is resistant to friction, such as cleaning, so it will not detach even by brushing of train car washing machine.

Suppression of reflection, transparency

When a solar panel (glass part) let sunlight pass through it, light reflection loss occurs due to the thickness of the glass. However, by changing the quality of the glass surface through the coating process, reflection of useless light has been successfully suppressed.

Suppression of reflection leads to improvement of transparency.



Excellent workability

As this product is one-pack type, you can start work immediately.

As it does not contain any harmful substance, it is odor free and safe and secure.

You do not need to wait after work, and the hydrophilic effect is exerted immediately after coating.

Anticipated Effects through Introduction

Reduction of contamination attachment

As the antistatic effect suppresses generation of static electricity, attachment of contamination can be reduced.

Shortening of cleaning time

As contamination is in a floated state on hydrophilic film, contamination can be easily removed.

Decrease of use of detergent

As water only is required for cleaning after coating (neutral detergent in some cases), use of detergent can be reduced.

* If a detergent other than neutral detergent (strong alkali, strong acid) is used, even when the coating agent is not damaged, the base material will be damaged and therefore the coating agent will not remain.

Provision of safe and secure place

Decrease of use of detergent containing organic solvents leads to provision of safe and secure places.

Ease to work

As this product is completely inorganic, it is harmless and odor free, and enables you to work in a safe and secure manner. With no time to wait after work, it is easy to introduce.

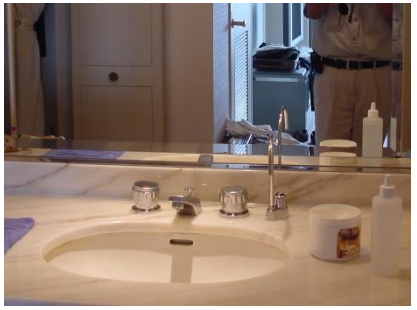
* On portions where the effect of this product has decreased, you can easily conduct maintenance by yourself.

Applicable Locations

Window glass

Mirror

Washing bowl



Toilet

Bathtub

Bathroom

Smoking room

Kitchen

Elevator

Exterior wall

Wall paper

As this product is easy to apply and harmless, it can be widely used in every part of accommodation facility.

Application Case Examples

■ Location: Hotel Limani　Window glass


■ Location: Hotel Nikko　Bath tub in guest room


■ Location: Hotel New Otani　Smoking room


■ Location: Hotel New Otani　Bathroom in guest room