

Reynobond<sup>®</sup>  
Architecture



Reynobond<sup>®</sup> with  
EcoClean<sup>™</sup> Powered by HYDROTECT<sup>™</sup>



# Can a building really clear the air while it cleans itself?

## Cleaner air. Cleaner buildings. Significant innovation.



10,000 square feet of Reynobond with EcoClean has the approximate air cleansing power of 80 trees. That's enough cleaning power to offset the smog created by the pollution output of four cars every day.

*"Reynobond with EcoClean is perhaps the first true active green product in the architectural products marketplace."*

— Jay Kahn,  
Global Commercial  
Development Manager,  
Alcoa Architectural Products

Buildings are exposed to many organic contaminants. From bird residue to diesel fumes, architectural building panels are constantly exposed to organic material that makes their surfaces appear dirty. Yet there's another kind of organic material constantly bombarding buildings that is harder to see: NOx (nitrogen oxide). As the primary component of smog, NOx not only makes buildings dirty, it also threatens the quality of the air we breathe.

Now, Alcoa Architectural Products has developed a proprietary process that leverages HYDROTECT™ technology from TOTO® to apply a titanium dioxide coating, called EcoClean™, to the pre-painted aluminum surface of Reynobond®.

The result is the world's first coil-coated aluminum architectural panel that helps clean itself and the air around it.

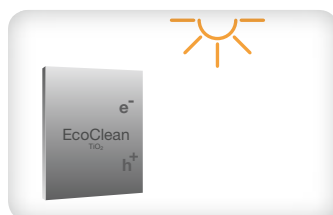
Electrons within the titanium dioxide are agitated by UV light, creating a higher state of energy. That excess energy transfers to oxygen and water molecules in the air to form free radicals, which attack any organic material on or near the EcoClean surface. These particles are then ready to be washed away with just the slightest bit of moisture, such as light rain or morning dew.

With EcoClean, the generated free radicals attack and break down the NOx in smog to a harmless nitrate. The result is a building that helps to clean the air while also protecting the building's surface. In fact, 10,000 square feet of Reynobond with EcoClean has the approximate air cleansing power of 80 trees. That's enough cleaning power to offset the smog created by the pollution output of four cars every day.

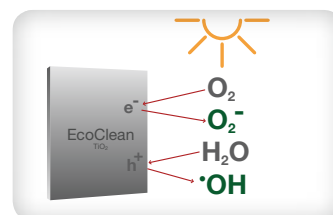
## “Build a building, save the world.”

It's the mantra that drove the development of Reynobond with EcoClean.

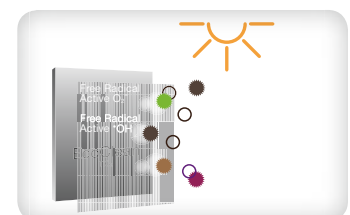
### The process



1 Electrons in the TiO<sub>2</sub> become energized by UV light.



2 These electrons transfer energy to oxygen and water in the air.



3 Free radicals are formed by the transferred energy (O<sub>2</sub><sup>-</sup>, \*OH).

## A super-slick surface means less dirt

Reynobond with EcoClean also allows the building to help clean itself. When exposed to UV light, the coating makes the surface of the building super hydrophilic, or water-loving, so rainwater and other moisture that hit the surface collapse flat instead of beading up. This allows the organic particles of dirt and grime to slide right off, creating a cleaner building, resulting in lower maintenance costs and a better image.

Architects and building owners who are looking for positive ways to impact the environment and keep building surfaces looking fresh over time will find EcoClean technology the smart, innovative way to combine form with function.

## Reynobond Architecture

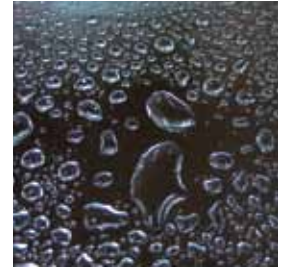
At Alcoa, Excellence in Innovation is a promise we fulfill every day by researching and developing new products that can make a positive impact on our customers and our world.

The innovations behind Reynobond with EcoClean are an example of this commitment. Alcoa began developing the coating technology in 2006, committing a team of more than 50 scientists and engineers to create a way to apply titanium dioxide to painted aluminum using a coil-coating process that would deliver all the self-cleaning and air-cleaning benefits of titanium dioxide without attacking the painted surface itself.

Alcoa combined science, application technology and decades of architectural experience to create a product that makes a positive impact on the environment.

## Available in more than 30 colors

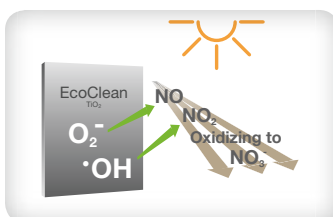
Please consult your Alcoa Architectural Products representative for specific availability.



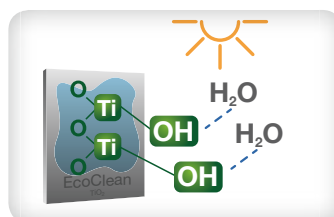
Panel without EcoClean



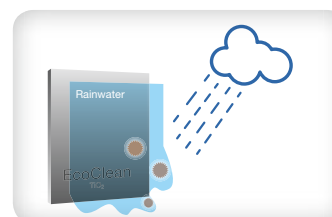
Panel with EcoClean



4 The free radicals attack and destroy organic matter via oxidation.



5  $\cdot\text{OH}$  free radicals called hydroxyls group on the surface of EcoClean.



6 The hydroxyls make the building surface super slick. Instead of beading up on the surface, the water collapses on the surface and runs off, undercutting dirt and grime.



HYDROTECT™

*TOTO's patented HYDROTECT™ technology protects our planet by drawing on sunlight, rainwater and other natural forces to help cleanse the global environment. Alcoa's breakthrough was determining how to apply that technology to pre-painted metal – creating the EcoClean™ coating.*



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