

April 22, 2020

**We will strengthen our photocatalytic coating service with
antiviral and antibacterial effects for housing**
**- Clean your houses with our patented photocatalytic technology for
newly built houses and already lived ones!**

BURN REPAIR CO., Ltd. (Representative Director and President: Yoshinori Fujimoto; Head office: Shinjuku-ku, Tokyo; hereinafter referred to as BURN REPAIR) of the CANDEAL Group, which repairs, renovates, maintains, and manages residential and commercial facilities, has been providing photocatalytic coating services mainly for facilities. As interest in this service is growing, especially from new home buyers, BURN REPAIR has decided to switch its service to a higher quality photocatalytic coating service (i.e., "Reconaguard Air Refresh") with "antiviral and antibacterial" effects and gradually strengthen the service provision system.



Image of photocatalytic coating service

**■ Background to strengthening service system for "Photocatalytic Coating Service (Reconaguard Air Refresh)"
for Housing**

Photocatalyst*1 has excellent antifouling, antiviral, antibacterial, anti-mildew and deodorizing effects, and is used for white tent roofs of dome stadiums, operating room walls of hospitals and smoking rooms. In addition, photocatalysis is "eco-friendly" in terms of both the environment and economy, as it can prolong the cleanliness of facilities with light energy and significantly reduce maintenance costs. For these reasons, we have been offering this services for housing. Recently, expectations for photocatalytic coatings that keep living spaces clean have increased and inquiries have been on the rise, and we have decided to strengthen our service system across the country. It is said that the effect of photocatalysis for housing is further enhanced by applying it to both room walls and ceilings to create a larger space

The content of the press release is at the time of the announcement. Please note that the information may differ from the latest information.

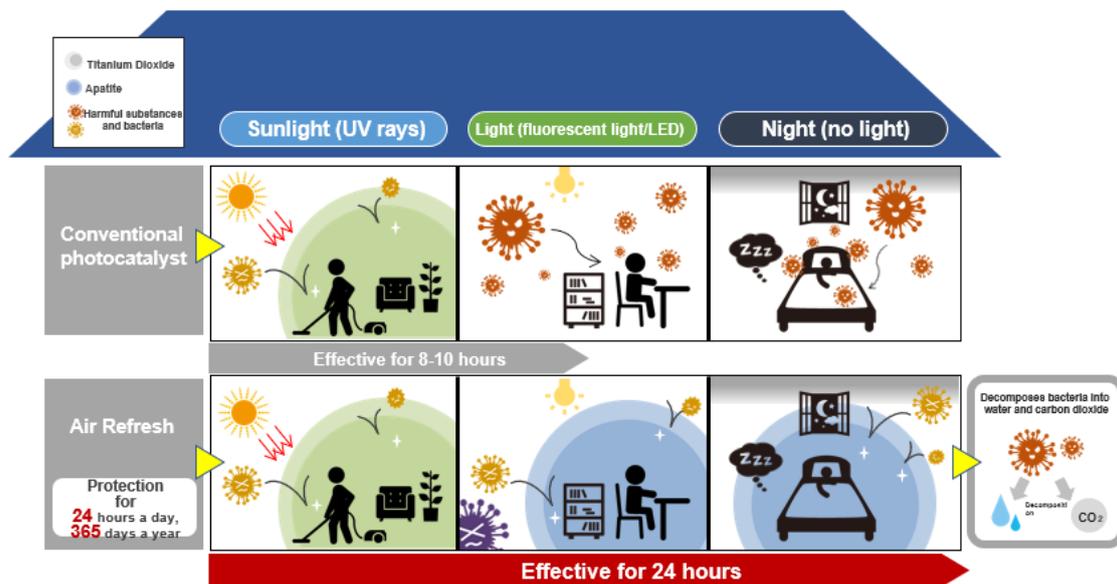
covered with photocatalysis.

* 1: A substance that uses "light energy" to cause a chemical reaction to break down organic compounds in the same way that plants emit oxygen through photosynthesis

■ **Characteristics of photocatalytic coating service for housing (Reconaguard Air Refresh)**

1. Effects last for 24 hours 365 days × 3 years!
2. Surprising antibacterial efficacy and its abundant validation data
3. Effective in both sunlight and fluorescent and LED lighting!
4. Abundant track record for housing and commercial facilities
5. Reliable as it uses a material that is friendly to the human body and the environment

Effective even at night when there is no light! A completely new photocatalytic coating whose effects last for 24 hours!



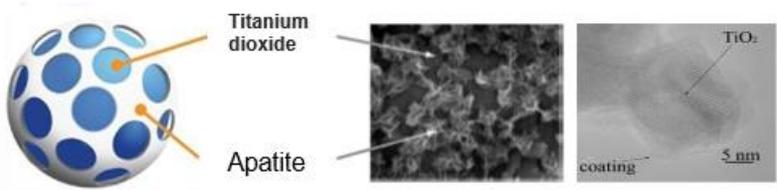
*It also reacts to incandescent light bulbs (halogen and mini-krypton bulbs) and LED which do not react with conventional photocatalysts!

■ **Reason for the high quality - patented technology-**

This product, produced by a domestic manufacturer, has a patented technology*² called "Apatite Coated Titanium Dioxide," in which two components, apatite and titanium dioxide, work 24 hours to provide antiviral and antibacterial effects, as well as mold and stain protection, VOC (volatile organic compound) removal, and deodorizing effects. As it is composed of safe components that are not harmful to the human body, there is no need to worry even if it adheres to small children, pets or food. We have a record of adoption in a number of industries and fields, including residential and commercial facilities, hotels, schools and nursery schools, restaurants, railroad vehicles, large cruise ships, and senior housing and care facilities.

* 2: Method of manufacturing apatite complex, and its complex and environmental purification materials [Patent number: 3975270], National Institute of Advanced Industrial Science and Technology (AIST)

Patented technology "Apatite Coated Titanium Dioxide"



Apatite absorbs bacteria and organic compounds.

Titanium dioxide decomposes and removes the bacteria and organic compounds absorbed on apatite using the power of light.

■ Service Overview

Service name: Reconaguard Air Refresh

Service locations*3: Room walls, ceilings, curtains

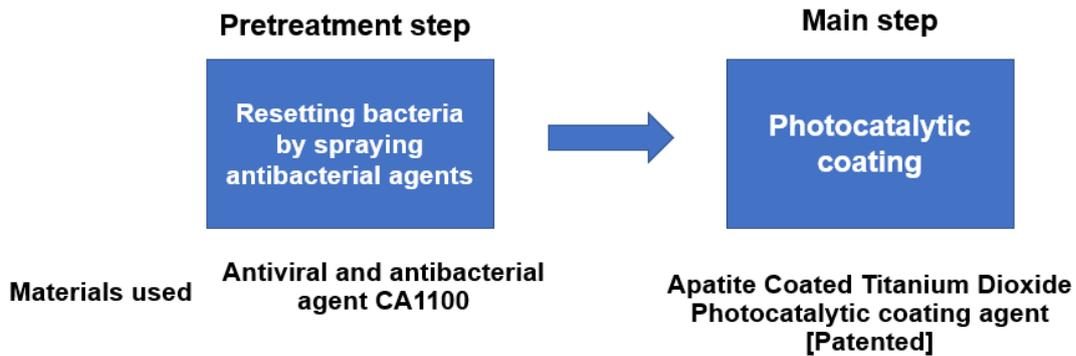
*3 Application on tiles, glass, enamel, and floor surfaces is not recommended.

Service Launch Date: Under offering

Service area: Nationwide

URL: <http://www.burn-repair.co.jp/service/air-refresh/>

[Main Steps of "Reconaguard Air Refresh"]



[Application Examples of Reconaguard Air Refresh]



Kitchen, Living room



Living room



Switches for lights, etc.

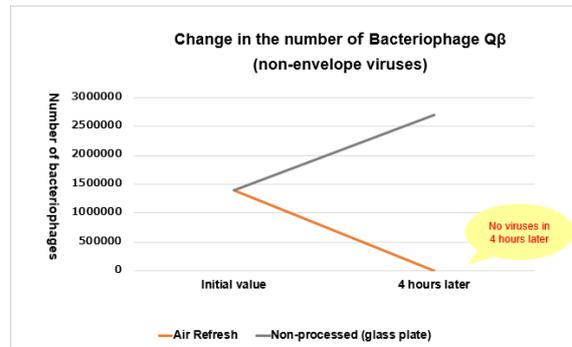
<Various inspection data related to this product

① Antiviral effect

[Antiviral test]

Test with Bacteriophage Q β (non-envelope viruses) *4

Antiviral activity*5: 5.3



Research by Japan Food Research Laboratories

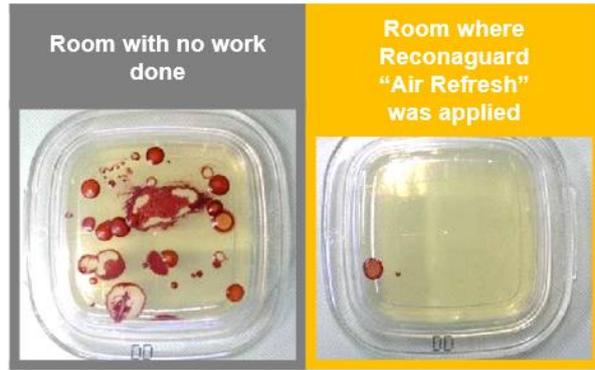
*4 Viruses that do not have an envelope (fat-free membrane). It is strong against alcohol.

*5 Photocatalysis Industry Association of Japan has been evaluated as having an anti-viral activity value of 2.0 or higher.

② Antibacterial Effects of Visible Light Testing

[Test for falling bacteria in the room]

Red dots are bacteria at common rooms. After the application, the growth of bacteria is suppressed.



Research by Industrial Technology Research Laboratories

3. 24-hour degradation in the dark as well as in artificial light such as fluorescent light

The conventional photocatalysts can only be used in places where sunlight hits, such as exterior walls. However, this product works well in rooms where sunlight cannot penetrate easily, windows with UV-cutting glass, incandescent light bulbs (halogen and mini-krypton bulbs), fluorescent lamps, and LED lights.

Furthermore, even at night when there is no light, such as while sleeping, apatite works by absorbing bacteria firmly, and decomposes and removes the source of virus, bacteria and smell when the light hits.

<Activity of Titanium Dioxide>

	Reconaguard Air Refresh		Old-type photocatalyst	
	Titanium Dioxide Effect	Apatite (Absorption effect)	Titanium Dioxide Effect	Apatite (Absorption effect)
Sunlight	◎	◎	◎	×
Natural white fluorescent lamp	○	◎	△	×
Incandescent lamp	△	◎	×	×
LED (natural white)	◎	◎	△	×
LED (light bulb color)	○	◎	×	×
Fluorescent lamp (daylight)	○	◎	△	×
No light	× (*1)	◎	×	×

*1: It shows effects after apatite absorbs and collects viruses and bacteria floating in the air for 24 hours.

*2: Calculated based on peak wavelengths based on various spectral distributions.

Performance evaluation: When the radical dissipative ability in the ultraviolet region is assumed to be 100% ◎: 70~100% ○: 40~70% △: 20~40% ×: 20% or lesser

Research by BURN REPAIR

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<For Reference>

Data to verify the effectiveness of "the antiviral and antibacterial agent CA1100" in resetting bacteria, which is a pretreatment step.

	Avian Influenza	Norovirus																											
Test institution	Livestock Microbiology Class, Department of Veterinary Medicine, Faculty of Agriculture, Kagoshima University	Japan Food Research Laboratories																											
Test method	Avian influenza virus and the antiviral and antibacterial agent CA1100 were mixed and sampled 0, 5, 15, and 30 minutes later. The viral load was measured in the supernatant after 5 minutes of centrifugation at 10,000rpm.	A viral suspension of feline calicivirus was added to the specimen and mixed to make it an active liquid. It was set to act indoors, and the viral titer of the active liquid was measured 30 minutes and 6 hours later.																											
Test results	<p>Approx. 297,000 out of approx. 300,000 viruses were inactivated!</p> <table border="1"> <caption>Avian Influenza Test Results</caption> <thead> <tr> <th>Time</th> <th>Untreated</th> <th>Our product</th> </tr> </thead> <tbody> <tr> <td>0 min.</td> <td>~10^{4.5}</td> <td>~10^{4.5}</td> </tr> <tr> <td>10 min.</td> <td>~10^{4.5}</td> <td>~10^{3.5}</td> </tr> <tr> <td>20 min.</td> <td>~10^{4.5}</td> <td>~10^{3.2}</td> </tr> <tr> <td>30 min.</td> <td>~10^{4.5}</td> <td>~10^{2.5}</td> </tr> </tbody> </table>	Time	Untreated	Our product	0 min.	~10 ^{4.5}	~10 ^{4.5}	10 min.	~10 ^{4.5}	~10 ^{3.5}	20 min.	~10 ^{4.5}	~10 ^{3.2}	30 min.	~10 ^{4.5}	~10 ^{2.5}	<p>30 minutes later, almost no virus was detected!</p> <table border="1"> <caption>Norovirus Test Results</caption> <thead> <tr> <th>Time</th> <th>Untreated</th> <th>Our product</th> </tr> </thead> <tbody> <tr> <td>0 min.</td> <td>~8.5</td> <td>~8.5</td> </tr> <tr> <td>30 min.</td> <td>~8.0</td> <td>~4.5</td> </tr> <tr> <td>6 hr.</td> <td>~7.5</td> <td>~4.5</td> </tr> </tbody> </table>	Time	Untreated	Our product	0 min.	~8.5	~8.5	30 min.	~8.0	~4.5	6 hr.	~7.5	~4.5
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Future Development

Going forward, we plan to strengthen our system for providing this service and implement it for homes nationwide. In addition, we plan to expand it to facilities with a large number of infants, nursing care facilities for the future, hospitals, commercial facilities, and other facilities.

The CANDEAL Group will continue to address the challenges of the building industry with the aim of fulfilling its social mission and liability as a leading company in the field of architecture services through photocatalytic coating services that are effective in antiviral and antibacterial effects for homes.

<About the CANDEAL Group>

The Group was the first in Japan to establish a "repair service" for residential repairs, providing one-stop repair services for all types of buildings, including detached houses, condominiums, commercial facilities, and cultural assets, such as interior construction materials, exterior walls, and furnishings, at a nationwide uniform rate (25,000 yen). It attracted attention as a service that increased the value of buildings by helping reduce the burden on construction sites and reduce the disposal of building materials. In addition to repair services, the company is currently expanding its "building service-related business" to all types of fields, including detached houses, housing complexes, and commercial facilities, using the exclusive building service network in the industry that covers the whole country. As of April 24, 2020, the Group gets more than 130,000 repair requests and consultations per year at 60 locations nationwide.

URL: <https://www.canddeal.co.jp/group/>

<Inquiries regarding this service>

BURN REPAIR CO., Ltd.	
Telephone	03-5227-1301 Reception time 9:00 to 18:00 (excluding Saturdays, Sundays and holidays)
Mail	order-east@burn-repair.co.jp
URL	https://www.burn-repair.co.jp/inquiry/general/form.cgi

<Media Inquiries regarding this service>

Please contact for photographs, materials, etc.

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* "Reconaguard" is a registered trademark of BURN REPAIR INC.