



OPTIMUS

Paint for sustainable future

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01 Profile



Profile - History & Certification

History

- 1985 Established Hoei Sangyo Co., Ltd.
- 1987 Started manufacturing and selling melanin paints for elevators for bicycle frames.
- 2000 Started manufacturing and selling heat insulating coatings and heat insulating coatings.
- 2004 Established "Big Power Supply" in Thailand country Started manufacture and sale of special paints.
- 2006 ISO9001:2008 Certification Registration Certification Registration Range: Paint manufacturing
- 2009 Started research and development of PHOTOCATALYST paints by joint development of Sakai City and Osaka Prefecture University.
- 2012 Company brand "OPTIMUS" up the city Sales Company "Optimus Inc." established
- 2014 Opened Tokyo branch



Certification

- 2006 ISO9001:2008 Certification registration
Scope of certification registration: Paint manufacturing
- 2011 Certified as a "Sakai Environmental Challenge Company" by Sakai City
- 2012 Selected for support subsidy for manufacturing small and medium-sized enterprises and small business prototype development, etc.
- 2013 Sakai Gishu Certification
- 2014 Ministry of Economy, Trade and Industry Kinki Bureau of Economy, Trade and Industry
The 3rd "New Collaborative Business Plan" was adopted in FY2013.
Selected for the 2013 Small and Medium Enterprises/Small Businesses Manufacturing/Commerce/Service Innovation Project
- 2015 In FY2014, the new collaboration support project was adopted by the Kinki Bureau of Economy, Trade and Industry, Ministry of Economy, Trade and Industry.
Selected as one of the Ministry of Economy, Trade and Industry's "300 small and medium-sized businesses that do their best"



PAINT TO SAVE THE PLANET



02 Manufacturer



Manufacturer - Hoei Sangyo Co., Ltd.

Hoei Sangyo Co., Ltd.

Established on the 23rd January 1185

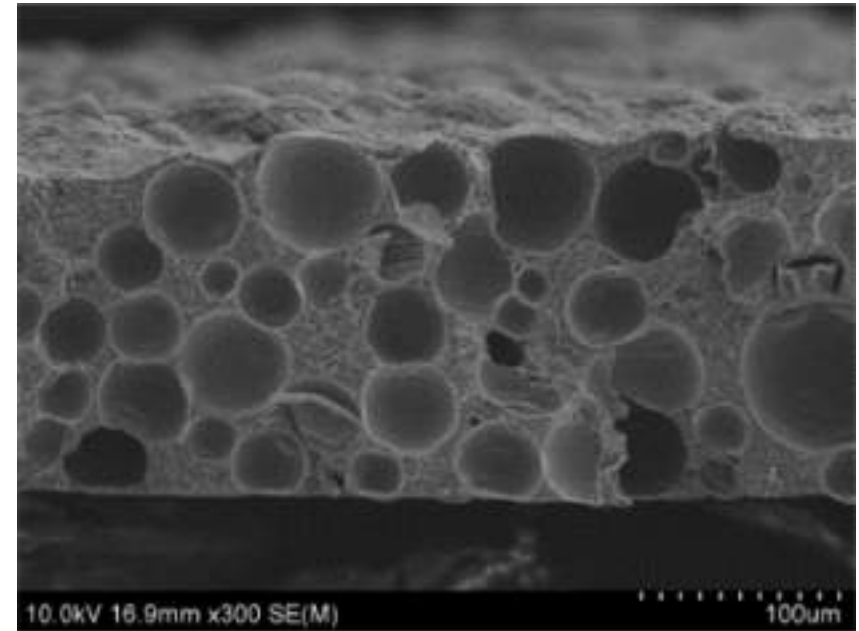
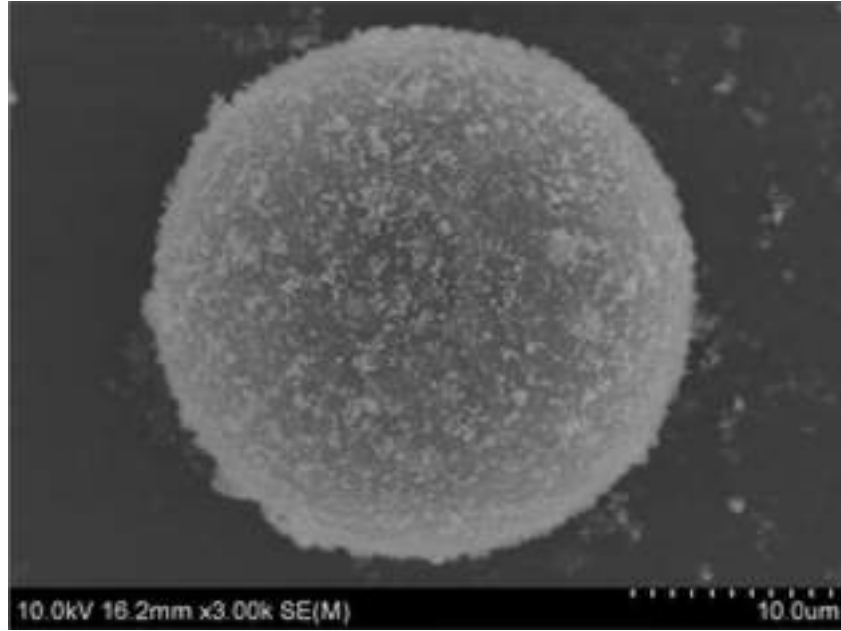
Location : 94 Oonoshiba-cho, Naka-ku, Sakai city, Osaka



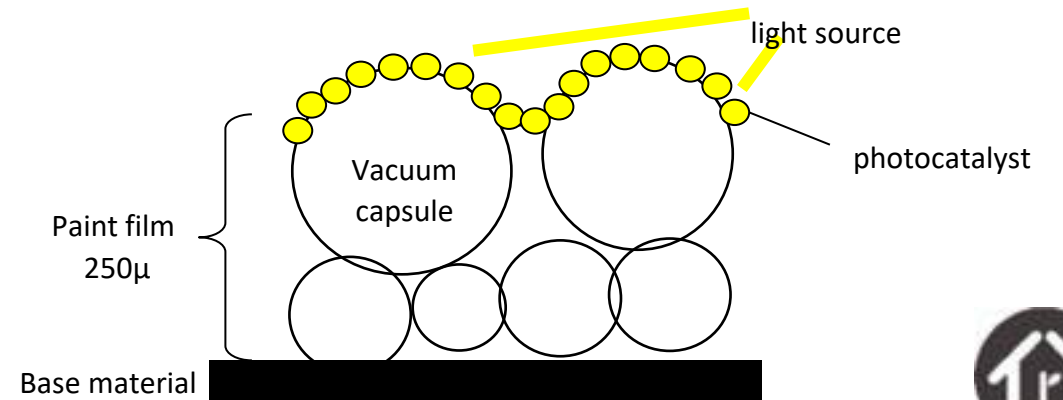
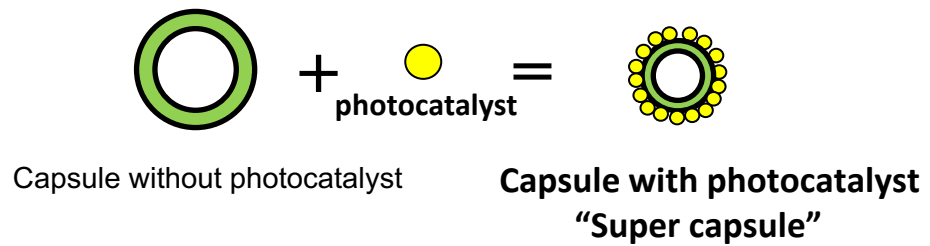
03 Our technology



Our technology - Photocatalyst

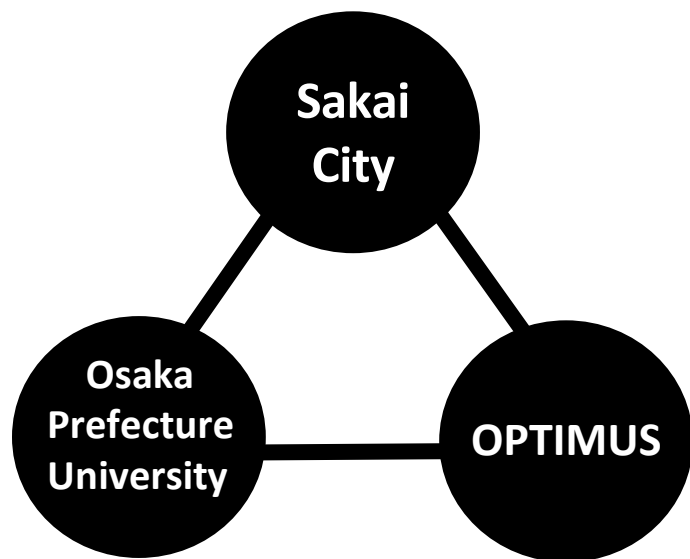


"Capsule loaded with photocatalyst: Super capsule"



Our technology - Photocatalyst

Industry-government-academia
Joint development

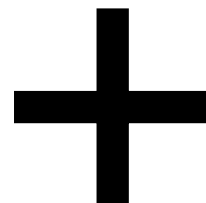


Japanese patents

Exterior paint Patent No. 5711717

Interior paint Patent No. 6027394

International patents



**Create a sustainable world
with Optimus paints!**



04 Patent



Patent



United States



United Kingdom



Switzerland



Hong Kong



Germany



France



EU



China



05 Line up



Line up

For exterior
OPTIMUS WHITE PAINT



For interior
OPTIMUS INTERIOR PAINT



For interior, antivirus
OPTIMUS INTERIOR MEDICAL PAINT



For exterior, heat insulation
HYDRO THERMO & DARK THERMO



06 OPTIMUS WHITE PAINT



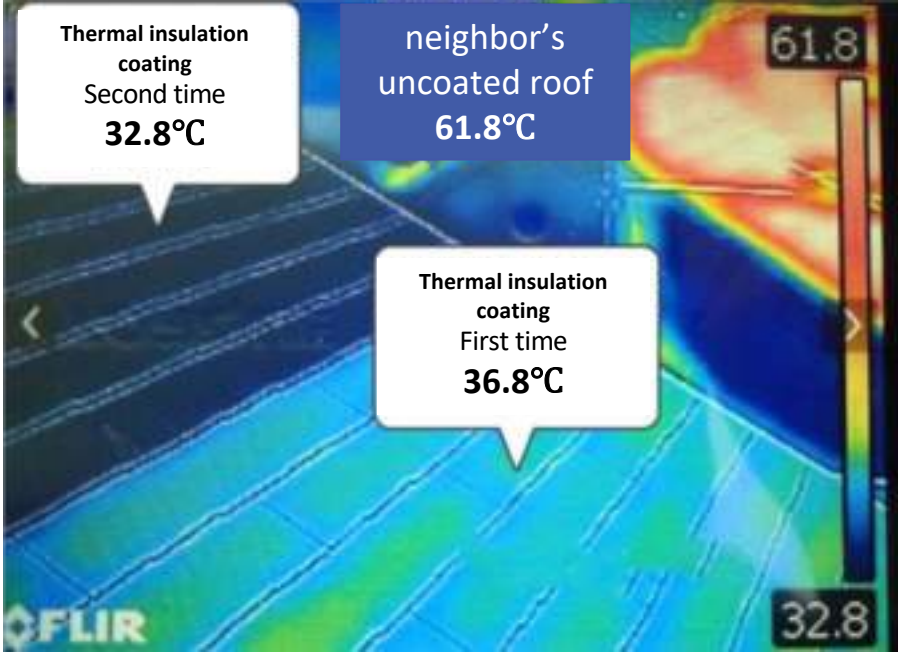
OPTIMUS WHITE PAINT

Features



Thermal insulation

temperature difference **-29°C**



OPTIMUS WHITE PAINT - Aging

October 2018
(immediately after completion)



October 2022
(approximately 4 years after construction)



Paint used

OPTIMUS WHITE PAINT、 DARK THERMO

location

Shinjuku-ku, Tokyo

Construction period

October 2018

function

self cleaning

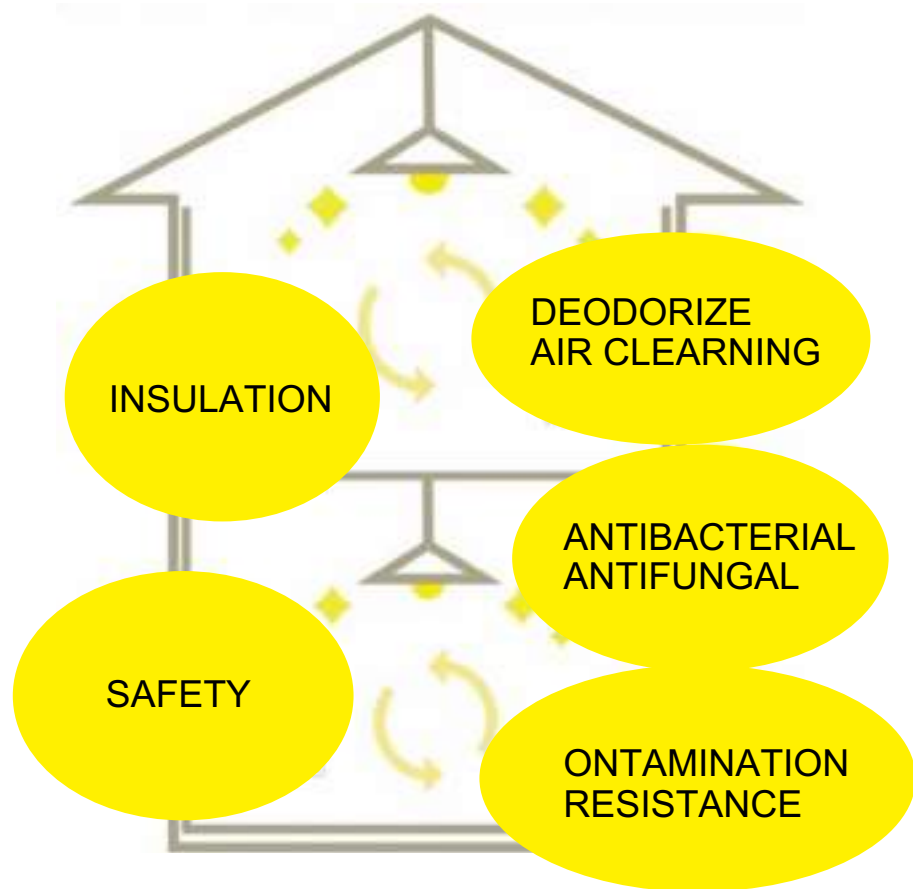


07 OPTIMUS INTERIOR PAINT




OPTIMUS INTERIOR PAINT

Features




That's why the inside of the room is always clean and safe!



TIPS

Odor tends to ascend.




Easy to apply

Even to the ceiling

Deodorant effect

OPTIMUS applied on the ceiling deodorizes odor that ascends with steam in the air. OPTIMUS is relatively high in viscosity, and thus, easy to apply on the ceiling.

Can be applied on top of wallpaper

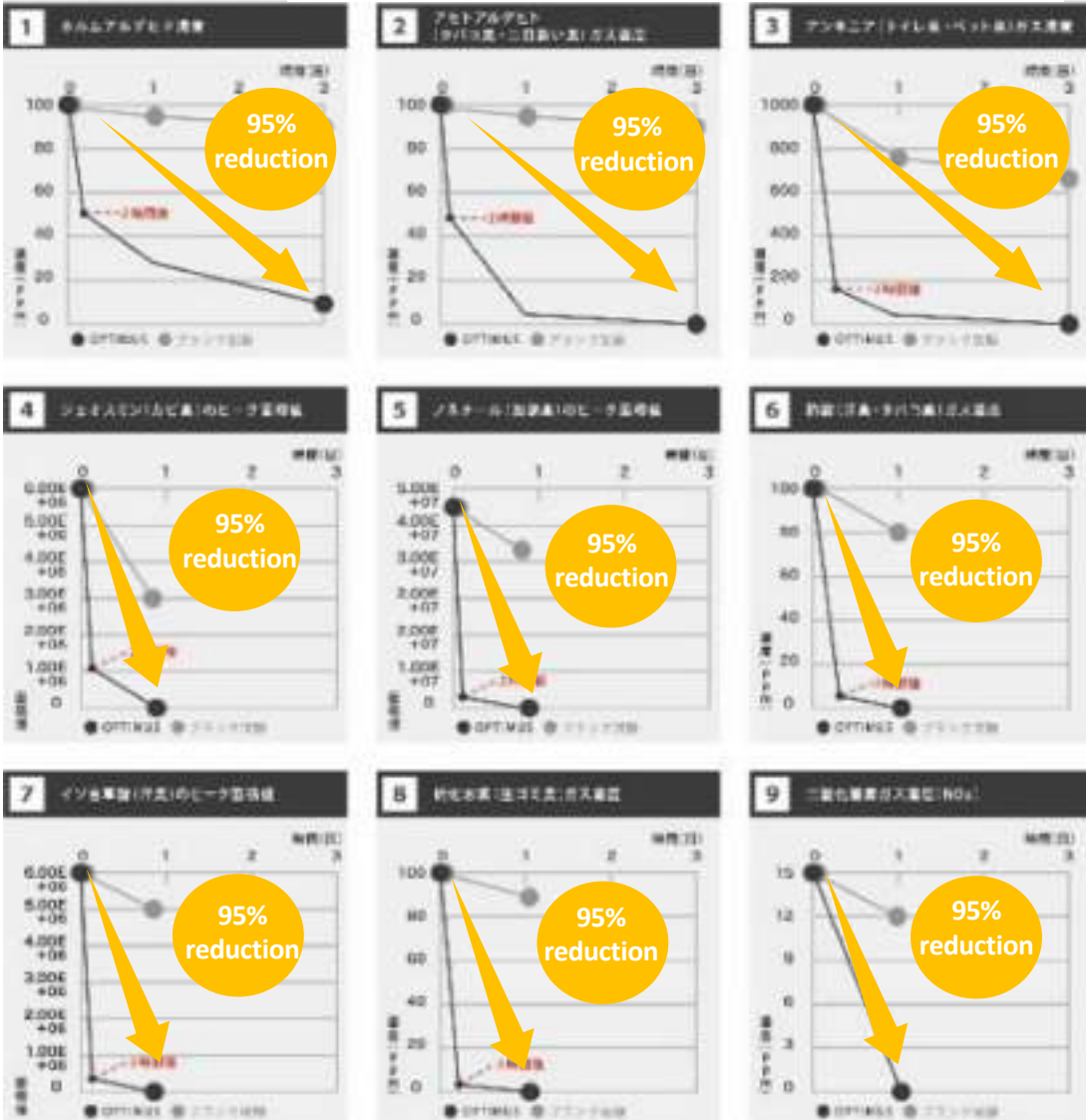


OPTIMUS may be applied on top of, and requires no peeling off of wallpaper, making it optimal for remodeling.



OPTIMUS INTERIOR PAINT - Evidence

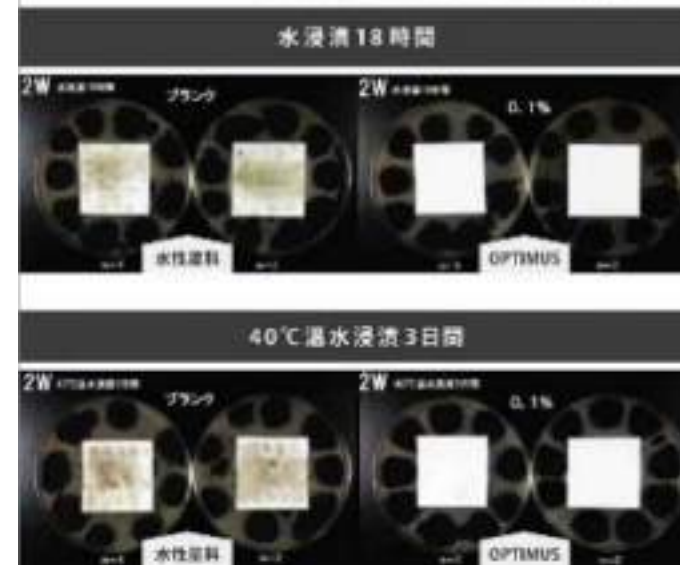
Deodorizing effect 99.9% decrease after 2 hours



Antibacterial effect Dead after 8 hours

菌名	生菌数	光照射(照射強度0.25mW/cm ²)	
		8時間後結果	
		ブランク	OPTIMUS
大腸菌	1.0 × 10 ⁴	8.5 × 10 ⁴	<10
黄色ブドウ球菌	1.4 × 10 ³	2.3 × 10 ⁴	<10

Anti-mold effect No mold even after 76 hours



JIS standard test results at Osaka Prefectural Industrial Research Institute, etc.



OPTIMUS INTERIOR PAINT - Works

- Chichibu City, Saitama
Prefecture Single-family house
Construction: 2018
NC006 white



- Osaka
prefecture detached house
Construction: 2020
NC002 urban gray ,NC003 Light gray



- Minato Ward, Tokyo
Atre Takeshiba
Construction: 2020
Toning



- Chuo Ward, Tokyo
Tokyo Midtown Yaesu
Construction: 2022
Toning



- Kameoka City, Kyoto
Starbucks Kameoka Ekimae store
Construction: 2021
NC003 beach sand



- Kita Ward, Tokyo
Aoba Nursery School Nishigaoka
Construction: 2017
NC006 white



08 OPTIMUS INTERIOR MEDICAL PAINT

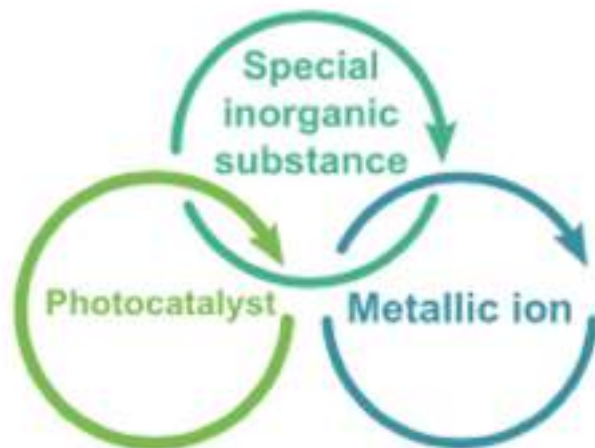


OPTIMUS INTERIOR MEDICAL PAINT

Features

ANTI-VIRUS	ANTI-BACTERIA	AIR CLEANING
DEODORANT	MOLD-PROOF	THERMAL EFFECT

The 3 components co-act to thoroughly inhibit the growing of viruses and bacteria



Works on the envelope virus

Envelope virus



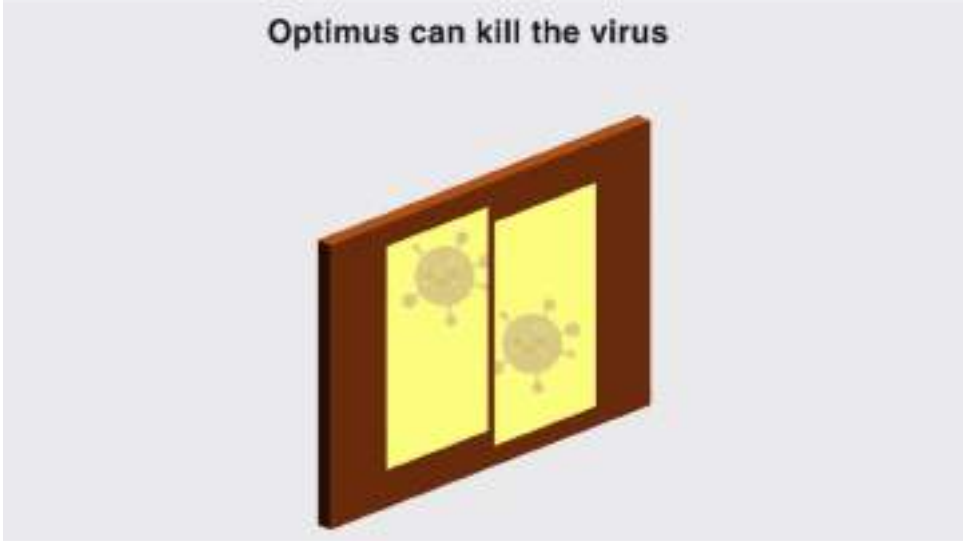
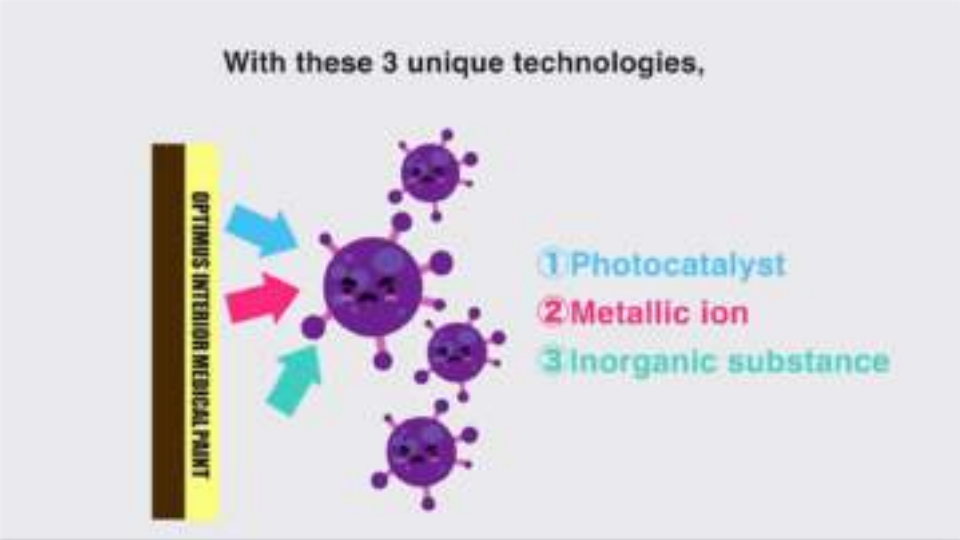
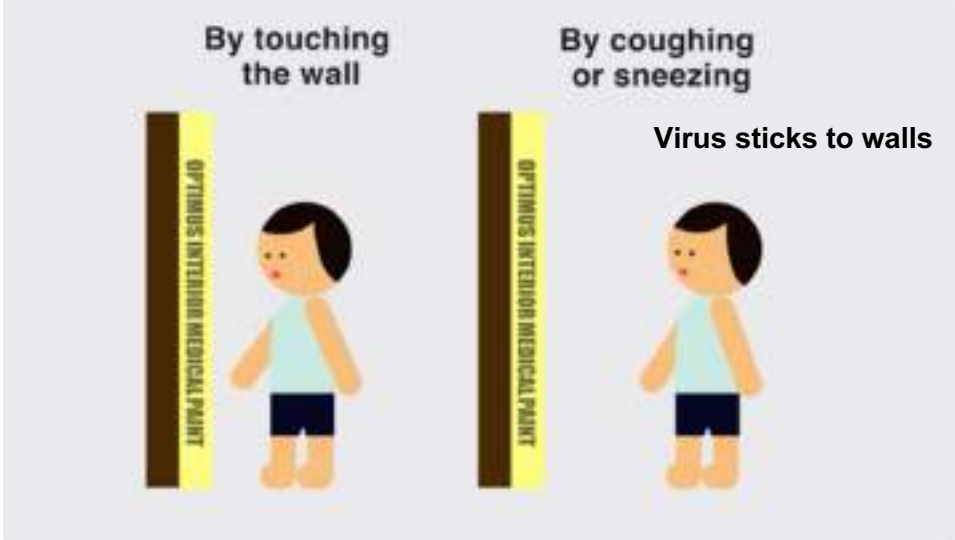
Covid-19 virus, cold sore, flu virus, etc.

The 3 components break into the membrane of the protein of envelope virus and inactivate the RNA (nucleic acid) inside the virus.

Viruses are generally tinier than bacteria, and there are also 2 types of viruses—those with a protein membrane called envelope and those without. **OPTIMUS INTERIOR MEDICAL PAINT** has been proved to have inhibiting effect on the viruses with an envelope (with a decrease rate of 99.9999%).



OPTIMUS INTERIOR MEDICAL PAINT – Effects



OPTIMUS INTERIOR MEDICAL PAINT - Works



Especially suitable for hospitals and schools for safe environment





**09 HYDRO THERMO /
DARK THERMO**



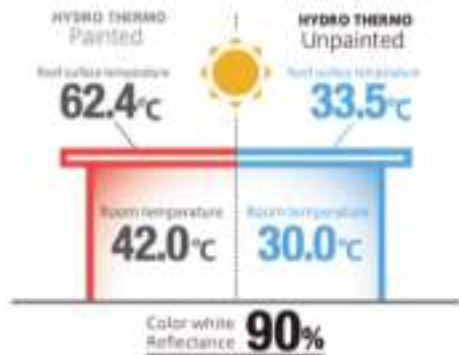
HYDRO THERMO & DARK THERMO - Features



HEAT SHIELDING / THERMAL INSULATION

Contains a complex oxide-based heat shielding (colored pigment), which exhibits a heat-shielding effect by efficiently reflecting the heat rays (infrared rays) contained in sunlight and decrease the surface temperature.

Comparison of hydrotherm coated roof and uncoated roof



It efficiently reflects the infrared region (380 nm to 2,500 nm)



Cross section of painted film of Hydro Thermo and Dark Thermo
The flexible balloons are lined up to increase thickness and provide insulation.

Lowers room temperature with two effects: heat shielding and insulation



HYDROPHILIC / STAIN RESISTANT

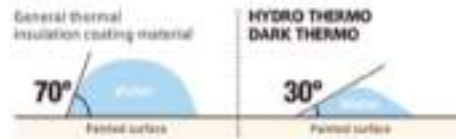
By combining the hydrophilic function (self-cleaning effect) with a unique paint formulation, it is possible to maintain heat shielding effects and low pollution properties for a long period of time.

Paint structure



Self-cleaning by the power of rain with hydrophilicity

When it rains on the water-friendly surface (the contact angle between the paint surface and the water is small), rainwater enters between the dirt and the paint surface, and the dirt attached to the paint surface floats up and washes away with the rainwater.



Maintains heat shielding effect and low pollution for a long time



WEATHER RESISTANCE AND DURABILITY

A paint containing acrylic and silicone resin that has excellent weather resistance and durability. No abnormalities occurred in the paint film after 3,750 hours of UV irradiation (equivalent to 15 years of outdoor exposure) after placing the test specimen in an accelerated weathering tester.

*Weather standard of JIS A-5675



Durability of paint

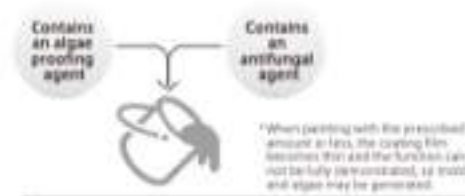


Long-lasting and resistant to deterioration and deterioration caused by weather



MOLD AND ALGAE RESISTANT

The combination of anti-algae / anti-fungal agent suppresses the occurrence of mold, algae and moss, so it is safe even in places where the sun does not hit or areas with high moisture along the sea. It can be used in a wide range of applications from large factories to residential buildings.



Hydro Thermo / Dark Thermo mold resistance test

40°C warm water immersion for 3 days

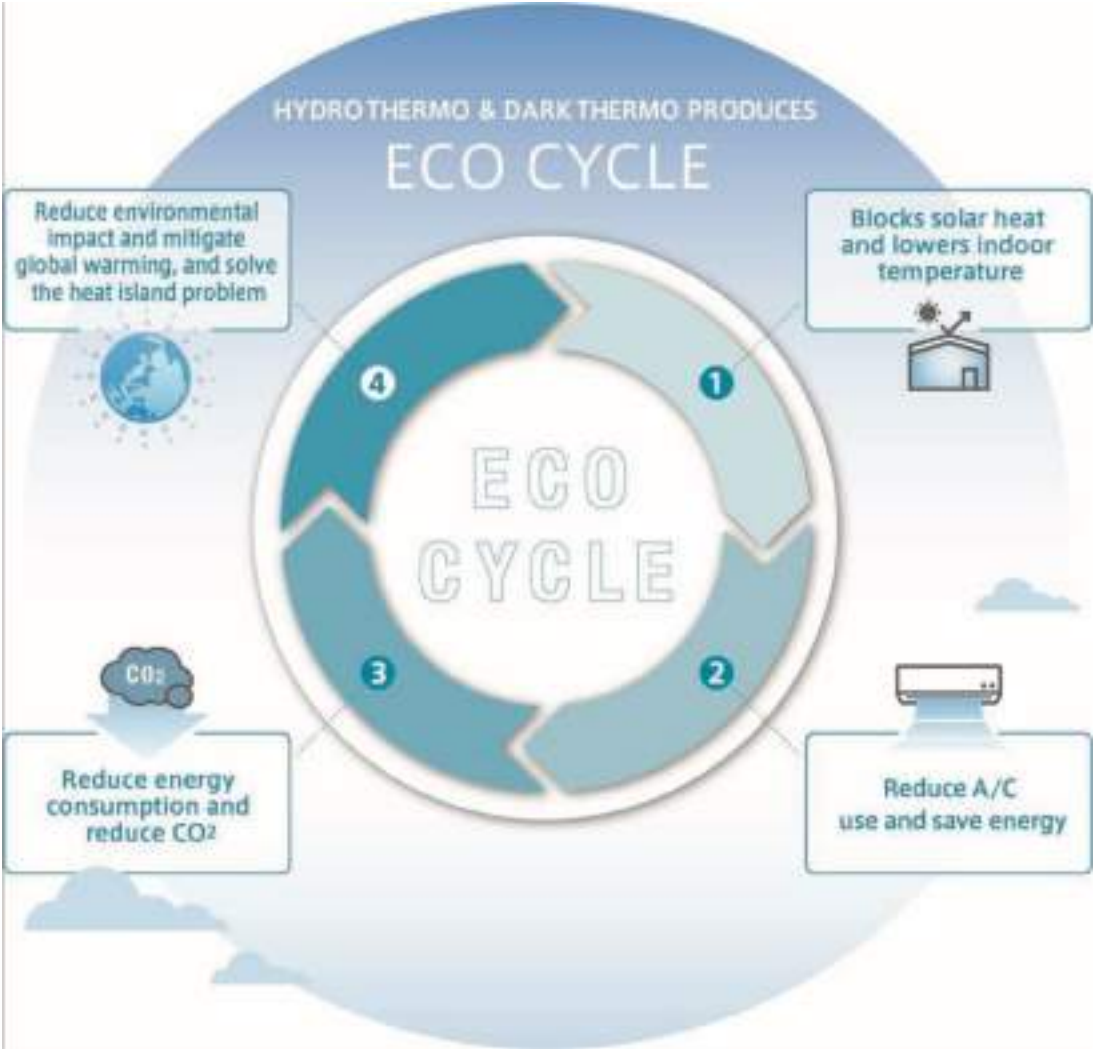


Test method: According to JIS Z 2911 mold resistance test method paint test Pre-treatment: 40°C warm water immersion for 3 days Investigation method: Investigate the degree of mold growth on the test surface

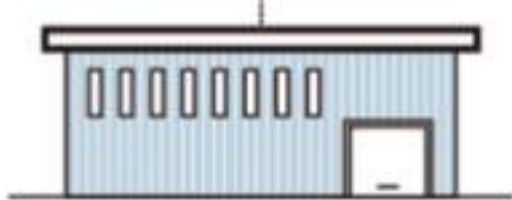
Can be used in various applications, regions, and environments



HYDRO THERMO & DARK THERMO – ECO Cycle



© CO₂ reduction effect and electricity cost reduction forecast
HYDRO THERMO / DARK THERMO



By preventing the intrusion of solar heat from the roof by painting the heat insulation and heat insulation paint of the hydro thermo, the amount of air conditioning used and the load are reduced, and the amount of CO₂ reduction and the amount of electricity cost reduction are calculated.

Reduced CO ₂ amount [Iron plate roof]	Unpainted	Painted	Reduced CO ₂ amount
	Amount of CO ₂ emissions	Amount of CO ₂ emissions	
	59 ton/Year	29 ton/Year	= 30 ton/Year
	<small>[Calculation method] Unpainted: CO₂ emissions = 1,493 kcal/m² × 100 years × 0.11 (CO₂ emission factor) × 0.0011 (conversion factor) × 1000 (unit conversion) = 179.33 ton/Year Painted: CO₂ emissions = 1,204 kcal/m² × 100 years × 0.11 (CO₂ emission factor) × 0.0011 (conversion factor) × 1000 (unit conversion) = 149.44 ton/Year</small>		

Electricity bill reduced amount	Unpainted	Painted	Electricity bill reduction amount
	Electricity bill	Electricity bill	
	2,935,666 YEN	1,415,164 YEN	= 1,520,502 YEN
	<small>[Calculation method] Unpainted: Electricity bill = 1,493 kcal/m² × 100 years × 0.11 (CO₂ emission factor) × 0.0011 (conversion factor) × 1000 (unit conversion) × 1000 (unit conversion) = 179.33 ton/Year × 1000 (unit conversion) × 16.5 (unit conversion) = 2,950,945 YEN Painted: Electricity bill = 1,204 kcal/m² × 100 years × 0.11 (CO₂ emission factor) × 0.0011 (conversion factor) × 1000 (unit conversion) × 1000 (unit conversion) = 149.44 ton/Year × 1000 (unit conversion) × 16.5 (unit conversion) = 2,455,860 YEN</small>		



HYDRO THERMO & DARK THERMO – Works



For roof, wall, factory, house, tank, container and etc.,



10 CURRENT PROJECT



CURRENT PROJECT

Started joint research with JAXA and Waseda University on photocatalytic antifouling paint for aircraft.

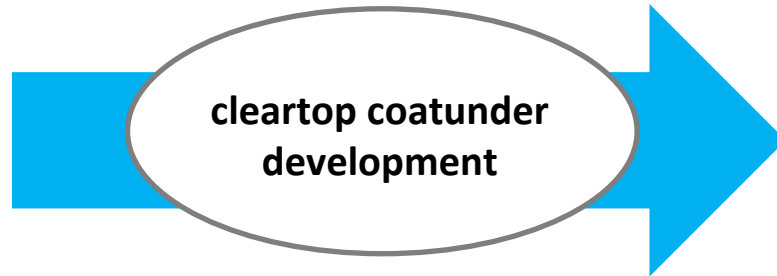
Scheduled for completion from April 2019 to 2024



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OPTIMUS[®]



Railway
Automobile expansion
to other fields



PAINT TO SAVE THE PLANET

Making the world more sustainable with paint.

Contributing to the carbon neutral era.



OPTIMUS CREATES THE FUTURE