

A glass coating for more comfortable life

Heat-shielding • energy-saving

UV-cut • Antibacterial



ECO-GLASS COAT

Patent No.

6060338

6048952

Patented

Developed and patented jointly
with Nagoya Municipal Industrial
Research Institute.



Acquired in 2009 HG-150
Verification No. 051-0810

Acquired in 2010 HG-200
Verification No. 051-0920

Reduces
electricity
cost

Increases air
conditioner's set
temperature by

2°C

Saves energy
by

20%



Have a comfortable
summer and winter



Has a lot of “green” properties.

Energy-saving
Annual energy-saving effect about 20%
Saves electricity cost by 20 % by improving air conditioning efficiency.

Heat shielding
Heat-shielding and thermal effect
Filters heat waves and reduces radiant heat.

UV cut
UV Blocks 99%
Filters UV light by 99%. Also repels insects.

Antibacterial
NEW! Antibacterial effect
Inhibits growth of bacteria and molds

Thermal effect
Heat-shielding and thermal effect
Reduces outflow of heat from the room during winter

F☆☆☆☆
Not subject to Building Standards Act

Condensation reduction
Condensation reduction
Reduces condensation by reducing the temperature difference between inside and outside the room.

Ministry of the Environment ETV Program
Verification No. 051-0810
Verification No. 051-0920

Eco-Glass Coat was

developed through 20 years of experience.

It is a well-balanced product in terms of **cost, benefit, and durability!**

What is Eco-Glass Coat?

Eco-Glass Coat is a heat-shielding coating agent for window glass containing nano-dispersed metal oxide (patented product). Once cured, it forms an even, transparent film that cuts heat waves and UV lights.

A record of success is a sign of trust

We have 20 years of experience and track record of continuously developing products that meet customers' needs. Eco-Glass Coat was born based on an out-of-the-box thinking to meet the needs of the ecology and energy-saving aspirations of the time. We pursued the best quality in terms of beautification, performance, durability, and economic efficiency. We will continue to respond to our customers' requests while taking on new challenges and making efforts, so that we can hear our customers say "we are glad we did it."

CONTENTS

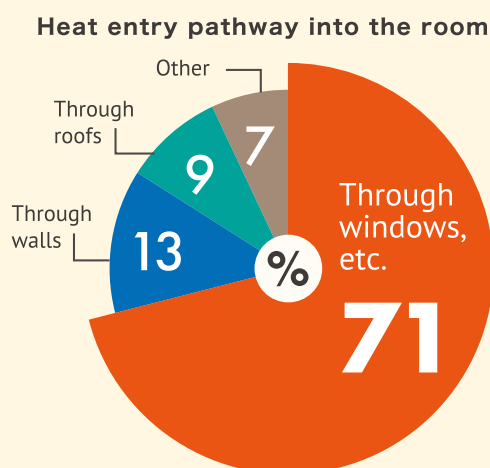
- 1
- 2 **Most of the heat comes in from the window.**
Dramatically cuts down heat waves, which are the cause of temperature increase, while letting the bright light go through.
- 3 **Cooler in summer and warmer in winter**
Reduces condensation / Heat transmission experiment
- 4 **Cuts down harmful UV lights by 99%!**
Discoloration prevention / Antibacterial effect / Protecting skin from UV light / Phototaxis of insects / Video introduction
- 5 **Various types of coating agents are available.**
Performance curve / Optical properties / Coating film characteristics / Comparison by type / Please feel free to ask us anything.
- 6 **Application process flow**
Flow of application (sponge coat)
- 7 **Demonstrative examples**
Energy-saving effect / Fuel-efficiency improvement effect / Heat-shielding and thermal effect / Temperature difference measurement / User's voice / Photo gallery

Back cover [Q&A Frequently asked questions](#)

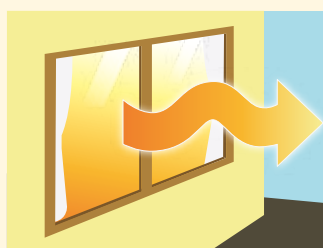
Where does the uncomfortable heat come in from?

Most of the heat comes in from the window.

In summer, heat mostly comes in through the window.



Also in winter, heat mostly goes out through the window.



About 50% of the heat outflow happens also through window glass.

36% to 80% of the surface area of the walls of the modern buildings are made up of windows. More than 70% of the heat inflow as well as about 50% of the heat outflow happens through window glass.

Source: A material published by Japan Construction Material & Housing Equipment Industries Federation, Energy Building Material Popularization Center

Eco-Glass Coat

dramatically cuts down the heat waves, which are the cause of temperature increase, while letting the bright light go through.



Heat-shielding and thermal effect



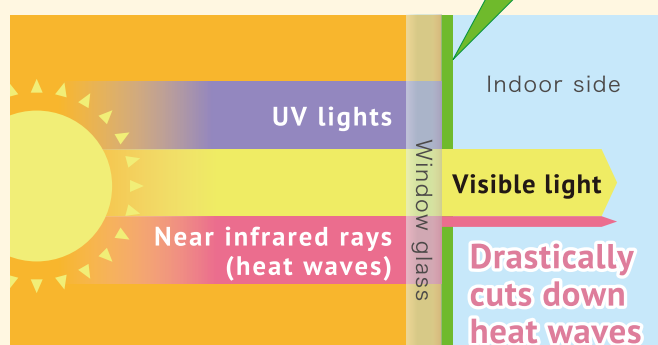
Examples of room temperature reduction realized by heat-shielding effect ▶ **P.7~10**

Eco-Glass Coat is applicable to existing glass surfaces. The transparent coating film cuts down the near infrared rays (heat waves) of the sunlight, which are the cause of temperature increase.

It not only prevents heat increase due to radiant heat during summer, but also keeps room temperatures warm during winter. As the air conditioning efficiency will increase, reduction of power consumption can be expected all year round.

Conceptual figure of heat wave filtering

Coating film of Eco-Glass Coat



Eco-Glass Coat Check Point

Improves interior environment with Eco-Glass Coat.
Saves about 20% of energy annually.

Cooler in summer

& warmer in winter

Save
energy
wisely

Examples of cases that led to reduction of power consumption

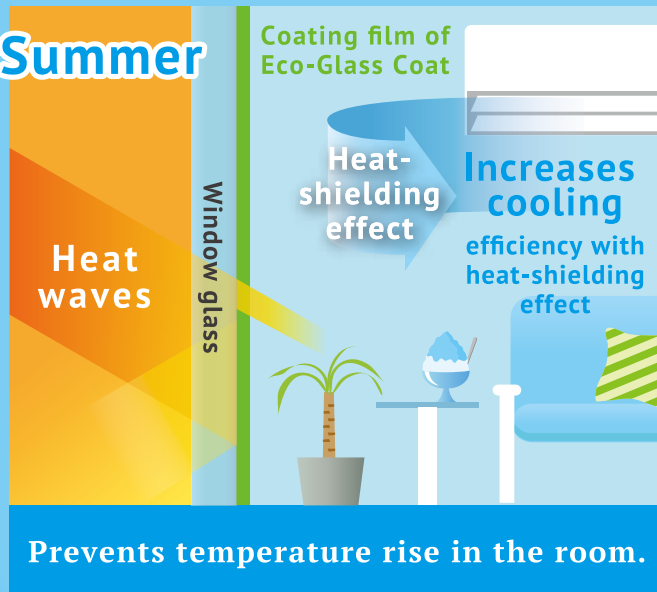
Power consumption was reduced by about 25%! ▶ **P.7**

Power consumption was reduced by 19.6% year-on-year ▶ **P.8**

Stay comfortable year-round. Eco-Glass Coat works in both summer and winter.

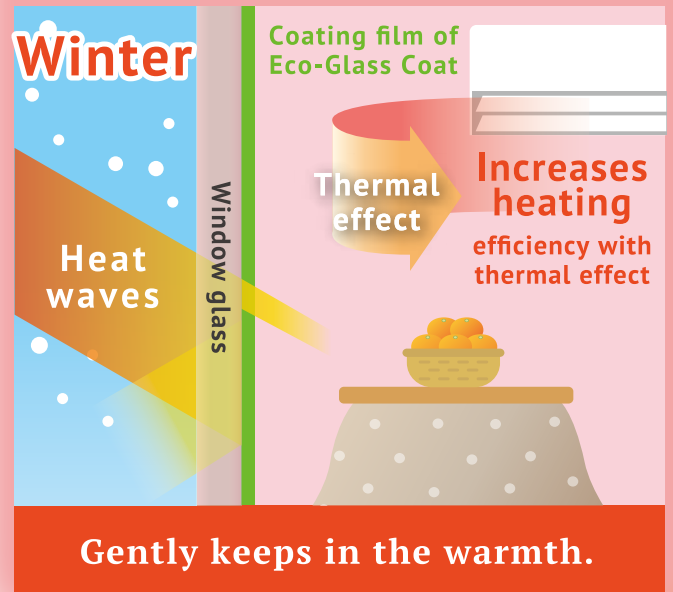
Dramatically cuts down near infrared rays (heat waves) which is the cause of burning heat.

Summer



Invites sunlight while keeping in the heat from the heater.

Winter



Eco-Glass Coat
Check Point

Cooling/heating efficiency will increase and air-conditioning load will be reduced. It will directly lead to reduction of power-consumption throughout the year.

We tried
Test

Condensation mitigation effect

Condensation
reduction

Leaving the dew condensation may result in growth of molds and ticks, or may cause sick house syndrome. Eco-Glass Coat minimizes the temperature difference between inside and outside the glass and prevents moisture beads from forming on the glass, thereby reducing dew condensation.

Observation of a house window (Figured glass in the bathroom)



Observation/test result

In both cases, many water droplets formed on the unapplied surface, but droplets were obviously minimized on the surface on which Eco-Glass Coat was applied.

Simple test using a drinking glass



Observed the droplets on the surface of the glass 30 minutes after putting ice cubes in the water.

We tried
Test

Heat-shielding effect

Shields heat

Eco-Glass Coat filters heat waves and prevents temperature rise.

Measured the temperature of the heat from the light transmitted through the glass panel.



test result

Resulted in temperature difference of about 10°C. It is evident that Eco-Glass Coat effectively prevented transmission of the heat.

Eco-Glass Coat is effective in cutting UV lights coming through the window!

Cuts down harmful UV lights by 99%.



Reduces damages to furniture, product, and your skin, while also repelling insects!

Prevents discoloration and deterioration

For prevention of color change and deterioration of curtains, carpets, and products.



UV irradiation test

Irradiated UV light on a piece of newspaper through a glass panel on which Eco-Glass Coat is applied.

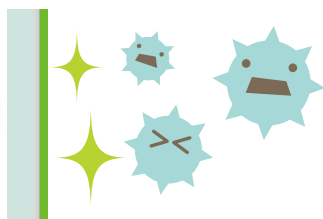


Test result

Color change of the part covered by the glass plate was mitigated. It is obvious that Eco-Glass Coat is blocking UV light.

Secure antibacterial effect

Inhibits bacteria and molds on the glass surface with its antibacterial effect.



This is the first heat-shielding coating agent for windows to have antibacterial effect. Recommended for facilities where a lot of people gather such as offices, public facilities, and gyms, or for places that need to remain clean, such as hospitals and nursing homes.

Eco-Glass Coat Check Point

Eco-Glass Coat is the first heat-shielding coating agent for windows to have antibacterial effect.

Protects your skin from UV light that comes in through the window.

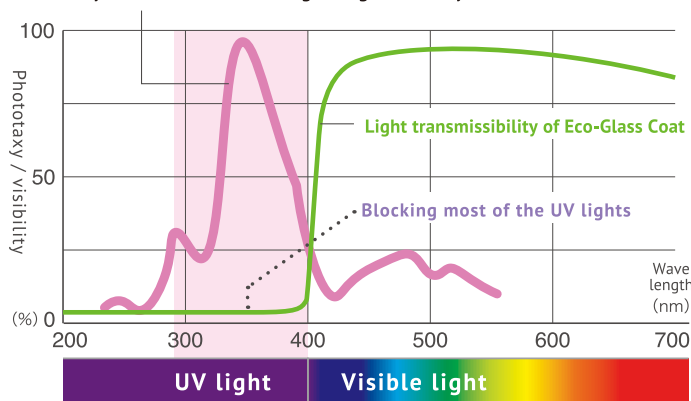
UV light can cause skin troubles such as spots and freckles and diseases such as skin cancer. Eco-Glass Coat protects your skin health by blocking UV light coming in through the window.



Prevents outflow of the UV light of interior lightings and prevents insects from gathering around the windows.

Phototaxis of insects Insects are attracted to UV light which is 300 to 400nm wavelength (phototaxis). A lot of UV lights are generated from interior fluorescent lamps. Many insects are attracted by those UV lights and sit on the window glass.

Relative visibility of various insects Typical relative visibility curve known in lighting industry.



Wave length that attracts insects



*Insects with compound eyes or phototaxis, or mosquitos attracted to carbon dioxide won't be attracted to UV light.

For daily maintenance, we recommend using our special cleaner, smaco. It has lasting dirt-protection and antibacterial effects.



To learn more about or to purchase smaco, please contact our sales rep.



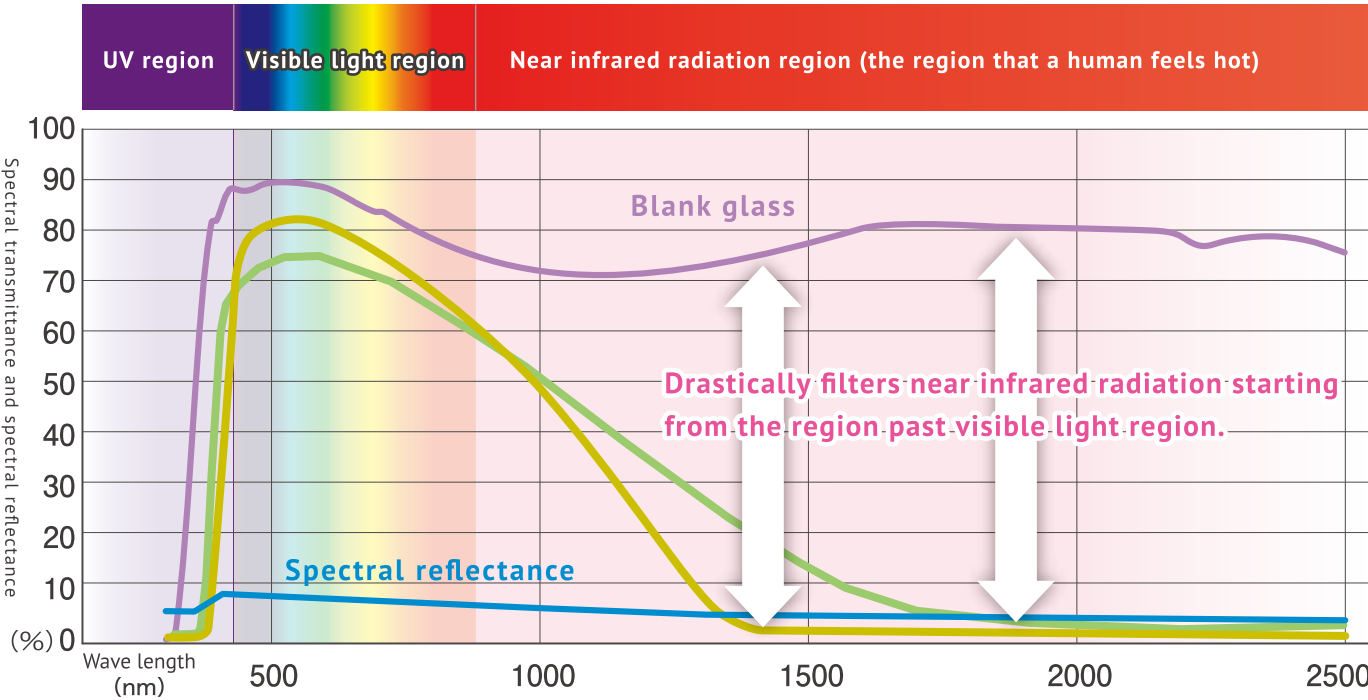
Eco-Glass Coat Promotion Video

This is an introduction video of Eco-Glass Coat showing experiments, application processes and model examples.

This video also shows energy-saving example of the office building (Hirose Building) listed in P.8 of this brochure.

To access the video, please scan the QR code on the right. A YouTube video will open.





Optical properties of Eco Glass Coat

Grade	Description	UV region	Visible light	Sunlight region		Shielding coefficient	Heat transmission coefficient
		Transmit	Transmit	Transmit	Reflect		
HG150 series	Top grade with superior transparency and heat-shielding effect.	0.6	82.5	54.8	5.8	0.78	6.0
HG100 series	A budget-friendly version with good transparency and heat-shielding effect.	0.6	75.0	56.3	5.7	0.79	6.0

Coating film characteristics of Eco-Glass Coat

Coating film characteristics	Item	Characteristic	Test condition
	Adhesion	100 / 100	Cross-cut adhesion test
	Water resistance	○	Dipped in water at 40±2℃ for 24 hours
	Moisture resistance	○	At 50±2℃ for 24 hours at 98% RH
	Alkali resistance	○	Dipped in 1% NaOH solution for 24 hours
	Acid resistance	○	Dipped in 5% SO4 solution for 24 hours
	Weather resistance	○	Sunshine weather meter (1000 hours)

Comparison by type

Comparison by type	Compared for	Eco-Glass Coat	Film
	Workability	◎	○
	Appearance	○	○
	Performance	◎	◎
	Weather resistance	◎	○

We can prepare an agent that matches your purpose. It can be used in various fields such as for automobile glass, not just for construction glass. Please feel free to contact us if you have any requests or questions like “I want to improve insulation of this part!” or “is it possible to....?”

Example of automobile fuel efficiency improvement ▶ P.8

We value feedbacks from application sites and conduct a lot of research to maintain the performance that users can actually feel the effect. Our efforts in developing a unique product with superior optical heat-shielding properties and durability have been highly recognized and we have been awarded a patent for Eco-Glass Coat. Eco-Glass Coat can be applied through “easy 3 steps” using “sponge coating method,” with which careful and meticulous application is possible.

Quick and easy application and beautiful finish are the characteristics of Eco-Glass Coats.

Patent No.
6060338
6048952



This is a high-performance agent that is easy to use for everyone.

Eco-Glass Coat has been developed and patented jointly with Nagoya Municipal Industrial Research Institute.

Application process flow



Meeting

We understand your requests, budgets, and other matters through interviews. We also check the details of the application using a check sheet.



Check and done Check the finish of the coating film, and done.

We will also explain you how to perform daily maintenance.

STEP Easy 3 steps

1 Glass surface cleaning



2 Masking



3 Coating (Sponge coat)



You can view the application process in **YouTube** video.



Communication fee must be paid by the customers. Please note that the video may not be viewable depending on your device or Internet connection.

Clean the glass surface before coating.

First we fully protect the surrounding area.

Carefully apply the coating agent by “sponge coating method”, which is a quick and most adequate method for the agent.



Exterior



Interior

Application date May 28, 2008
Area 70m²
Grade Eco-Glass Coat HG150

To measure the difference in power consumption of air conditioners between before and after the application of Eco-Glass Coat, we performed a demonstration experiment for a year. The data from the application year was compared with the data from the previous year.

Power consumption data

Power consumption (kwh) based on the bills issued by Chubu Electric Power Co., Inc.

Month	2007, not applied.	2008, Eco-Glass Coat was applied	Year-on-year 2007-2008
7	4,513	2,518	▲1,995
8	5,179	4,368	▲811
9	6,109	4,257	▲1,852
10	4,202	3,010	▲1,192
11	2,622	2,026	▲596
12	1,740	1,212	▲528
1	1,828	1,738	▲90
2	1,936	1,481	▲455
3	2,107	1,292	▲815
4	1,368	1,196	▲172
5	1,430	1,253	▲177
6	2,392	2,011	▲381
Total	35,426	26,362	▲9,064

Buildings designed to maximize the view from the window sometimes have sunlight issues. Maison de Jardin, a restaurant that serves creative French cuisine, is one of them; it had been troubled by the sunlight coming in from their spectacular window.

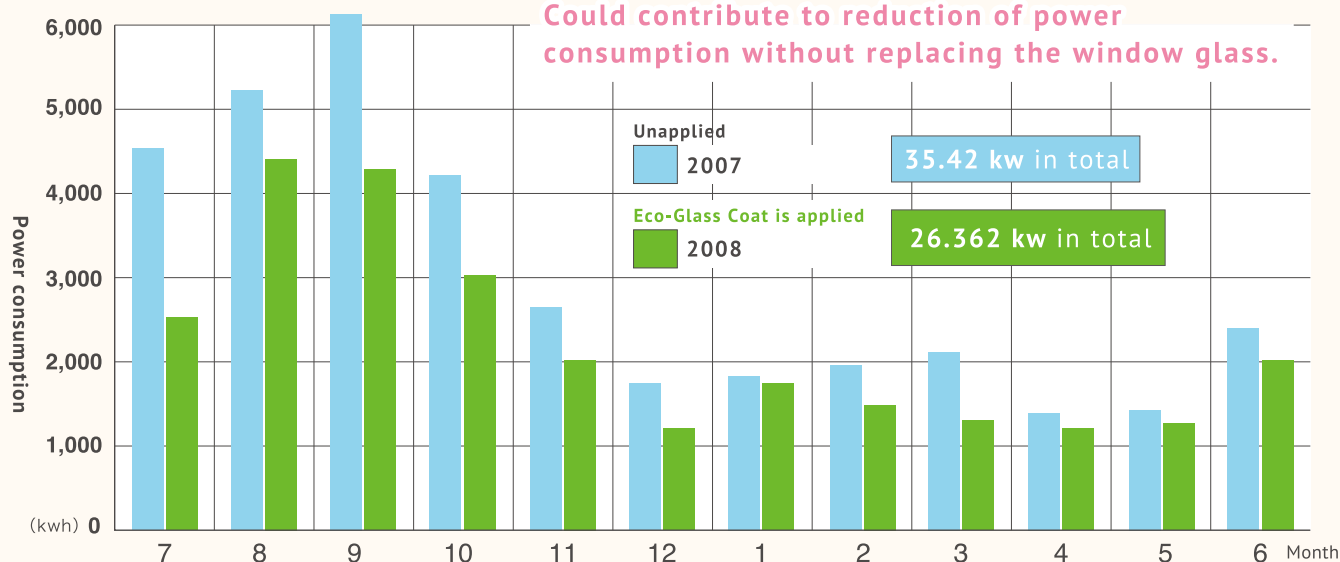
The sunlight coming into the restaurant was sometimes too strong for the customers, and even though the air conditioners were turned on, they did not work well for the amount of electricity they consumed. In some cases they even had to move customers away from the window.

To improve this situation, they decided to apply Eco-Glass Coat.

Demonstration result The data from the applied year shows that, although there are subtle variances due to the environmental factors, the power consumption of air-conditioners was reduced by as much as 25.5%. Even after factoring in the regional difference in electricity unit cost, more than 200,000 yen was saved annually in this case.

Power consumption was saved by about 25%!

Comparison graph



Office building

Sanyo Kogyo Group Shinjuku Hirose Building [Shinjuku, Tokyo]



Energy-saving
effect



Appearance up to 2009



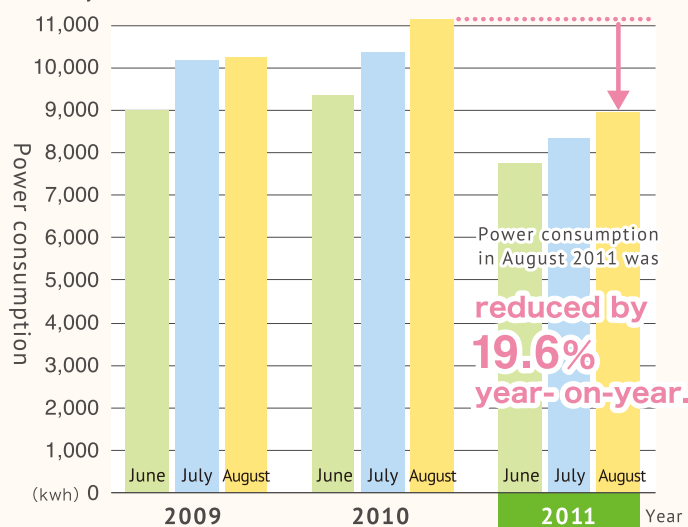
After placement of solar panel

- 1985 Installed Achilles sign
- 2009 Removed the sign (to follow the landscape regulation of Tokyo)
- 2010 Installed solar panels. Became an environmentally-friendly building.
- 2011 To make it even more environmentally-friendly, the following measures have been implemented to contribute to the 15% energy-saving target of the government.

1. Heat-shielding coating of window glass
2. Introduction of highly-efficient lighting
3. Use of LED for guide lights
4. Use of LED for entrance lights
5. Introduction of highly-efficient packaged air conditioners
6. Use of LED for elevator hall lighting

Contributed to environment with heat-shielding coating!

Energy consumption in June, July, and August in the last three years



Power consumption data Shinjuku Hirose Building Based on the bills issued by TEPCO (kwh)

	June	July	August
2009	90,216	101,640	102,522
2010	93,510	103,692	111,420
2011	77,526	83,332	89,580
2010-2011 reduction %	▲17.09	▲19.64	▲19.60

Two-grade lower air conditioners now work enough.

Taxi

Higashijima Taxi [Okinawa City, Okinawa]



Fuel-efficiency
improvement
effect



Compared fuel efficiency between before (2009) and after (2010) the application of Eco-Glass Coat.

	August		September	
	2009 Unapplied	2010 Eco-Glass Coat has been applied	2009 Unapplied	2010 Eco-Glass Coat has been applied
Travel distance (km)	6,612	7,015	6,081	7,409
Fuel consumption(L)	1,360.50	1,311.71	1,241.80	1,296.36
Average travel distance per 1L (km)	4.86	5.35	4.90	5.72
Fuel consumption per 1km (L)	0.20	0.18	0.20	0.17
Fuel consumption at the same travel distance as 2010 (L)	1443.42	—	1512.99	—
Fuel cost (Unit cost 65 yen)	93,822yen	85,261yen	98,344yen	84,263yen
Difference in fuel cost	8,561 yen		14,081 yen	



[Test vehicle] Toyota Comfort (LP gas car 1.99L)

Demonstration result In 2010, when we applied Eco-Glass Coat on the vehicle's window glass, fuel efficiency improved in both August and September. Travel distance also became longer in 2010.

Eco-Glass Coat works well not only for building glass, but also for vehicles.

Company meeting room

A Industry, Co., Ltd. [Nagoya City, Aichi]

Measured the temperature of the adjacent two rooms of the same size, one with Eco-Glass Coat and the other without, for 12 days.

Measurement period: From 1pm on April 24, 2005 to

5:30pm on May 6, 2005

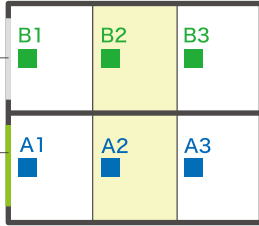
Grade: Eco-Glass Coat HG150

Thermometer locations in each room.

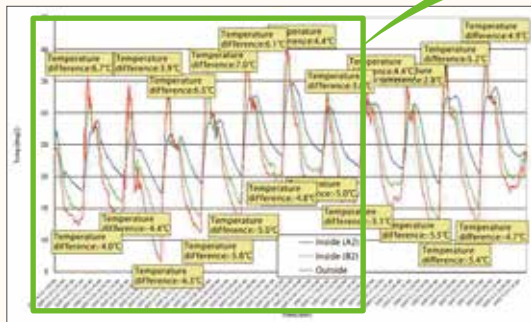
Regular window glass

Outside

Window glass on which
Eco-Glass Coat is applied



Temperature trend graph (whole period)

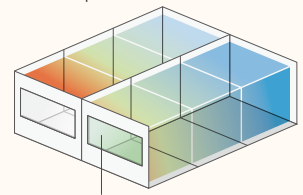


Enlarged
view



Heat-shielding and thermal effects

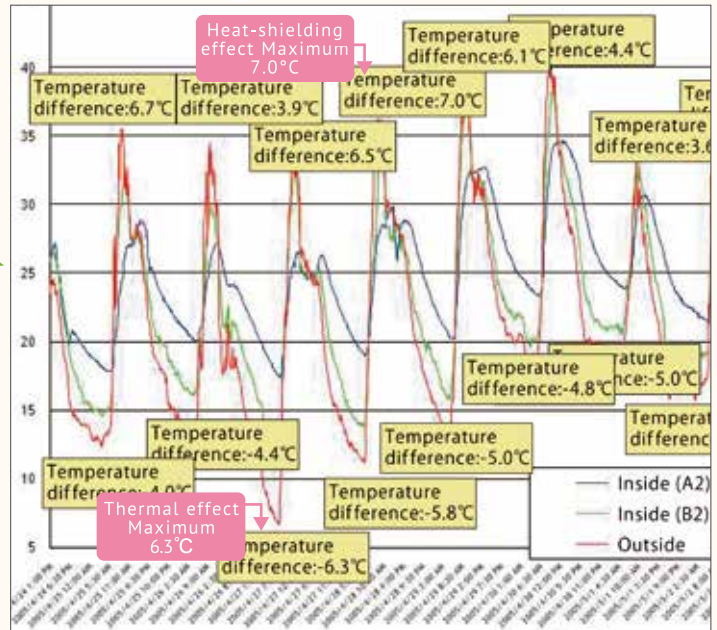
Conceptual figure of
daytime temperature



Eco-Glass Coat is applied

Demonstration result The daytime temperature difference between the room on which Eco-Glass Coat is applied and unapplied room was 7.0 °C at the most. At night-time, the maximum difference was 6.3 °C.

We can expect heat-shielding effect during summer and daytime, as well as thermal effect during winter and night-time.



Has a reputation for ease of use
and visible effect.

User's Voice

We chose Eco-Glass Coat over heat-shielding films because of its durability.

Mr. Y (General Affairs Department of an automobile parts development maker)

We applied it to the window glass of our plant and office. We also considered other heat-shielding measures, but we chose Eco-Glass Coat because of its low introduction cost and superior durability. So far electricity charge has been reduced, and we can't wait to see more effects in the future.



Now our customers often says, "it's not as hot as last summer."

Mr. N (Fitness club manager)

We applied it to the glass wall of our training room. As it is a large wall, the effect is even more obvious. We also appreciate that we have no more heat damage on our machines.

Measured the temperature by setting a data logger inside the window on which Eco-Glass Coat is applied and the unapplied window.
Measurement period: From June 4, 2014 to June 17, 2014

The following graph shows data from the period between 7am to 5pm of Sunday, June 15.



Button type
temperature
data logger

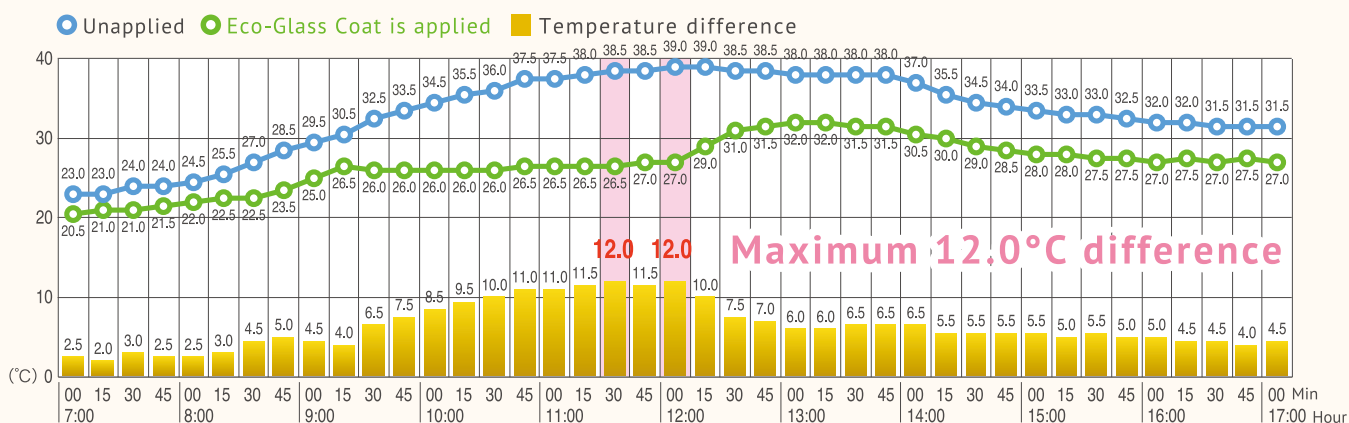
Demonstration result Maximum 12°C temperature difference was confirmed between the applied and unapplied cases. After application of Eco-Glass Coat, they could set the air conditioners at a temperature 1 to 3°C lower than before, which resulted in reduction of power consumption.



Store
appearance

Air-conditioning load was reduced, which led to reduction of power consumption. It also helps creation of the environment which is friendly to people and products.

Temperature trend graph



Examples of application

Photo gallery

Eco-Glass Coat is applied to the glass of various places including commercial facilities, plants, office buildings, schools, houses, cars, etc.



ECO-GLASS COAT Q&A

Answers to frequently asked questions

Q How much heat-shielding effect does it actually have?

A About 5 to 10°C difference has been observed between the glass on which Eco-Glass Coat is applied and the unapplied glass.

Q Does it get cold in winter?

A Eco-Glass Coat only filters near infrared radiation that causes burning heat. It won't get cold so please don't worry.

Q How many percentages of utility charges will it reduce?

A Generally, turning up the air conditioner by 1°C is said to reduce energy consumption by 10%. It fluctuates depending on the surrounding environment or conditions, but we can expect about 10 to 20% reduction of power consumption with Eco-Glass Coat.

Q Is there any type of glass to which Eco-Glass Coat is not applicable?

A Basically it can be applied to any type of glass, but the following types of glass need special attention.

Surface treated glass such as mirror glass

When the coating is applied to the treated surface, light reflection might become slightly random.

Ground glass

The glass will be transparent when the coating is applied.

Q How long does it take to apply the coating?

A It varies depending on the size of the surface area to be applied or surrounding conditions, but roughly 2 hours per 10 m³.

Q How many years will the coating film last?

A It depends on the grade of the coat and usage conditions, but usually it lasts for more than 10 years in general application (applied indoors).

Q What kind of places is it applied to?

A It is applied to all kinds of window glass at places where sunlight can be rather annoying, such as building windows and car windows.

Q Does it have shatterproof effect?

A The coating film doesn't have shatterproof effect. We have various other films as well so please contact us.

Q We would like an estimate.

A Please feel free to contact us at the contact information indicated in this brochure.

Q How should we perform daily cleaning?

A Please do not use metal cleaning equipment or abrasive cleansers. We recommend using the special cleaner, smaco, sold separately.



Special cleaner for Eco-Glass Coat, smaco.

To purchase smaco, please contact our sales rep.



For safe use

● When applying the coat by yourself, please read the instruction carefully before use. Store it away from heat and keep it away from fire when using.

■ The specifics of the services and the specification/performance/design of the product contained in this brochure are subject to change without notice. ■ Actual colors of the product may vary slightly from what appears in this brochure since they are printed colors. ■ Unauthorized copying from this brochure is strictly prohibited. ■ Eco-Glass Coat is a registered trade mark of Daiko Technical Corporation.

A glass coating for more comfortable life.

Eco-Glass Coat

search

To see latest information on Eco-Glass Coat, please visit our website.

For more information about our product, please feel free to contact us at the details below.

Developer/Manufacturer



DAIKO TECHNICAL Co.,Ltd

422-6, Shimogasa, Yoro-cho, Yoro-gun, Gifu, 503-1384

TEL +81-584-1135

FAX +81-584-1136

Official website of Daiko Technical

<http://www.daiko-tec.co.jp>

Scan the QR code to access our website ▶



Daiko Technical cooperates with the support program for Republic of Ghana.

Providing environmental, educational, and medical support to Republic of Ghana. Incorporated NPO HPEE JAPAN



Humanism Pacifism Education Ecosystem



To purchase or to make a request, please contact below:

Our business hours are from 9am to 12pm and from 1pm to 5pm.
(Except for weekends, holidays, and company holidays of distributors.)