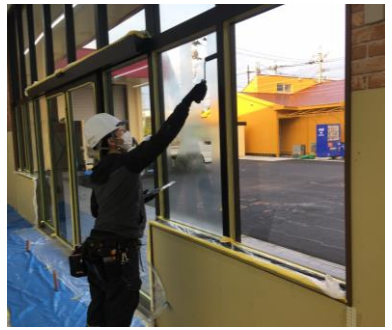
What is IRUV Cut Coat H-SC?

Sketch Nano.Ph

Thermal Paint | Heat & UV Cut Coat | Anti-fouling Coat

What is “IRUV Cut Coat H-SC”?

IRUV Cut Coat H-SC is a coating product that improves the heat shielding of glass windows. The coating leads to 20~30% of Energy Savings on air-conditioning energy consumption cost.



【 5mm thick single glass 】

【Before Coating】

UV rays Cut Ratio = 18%

Visible Light Transmittance =88%

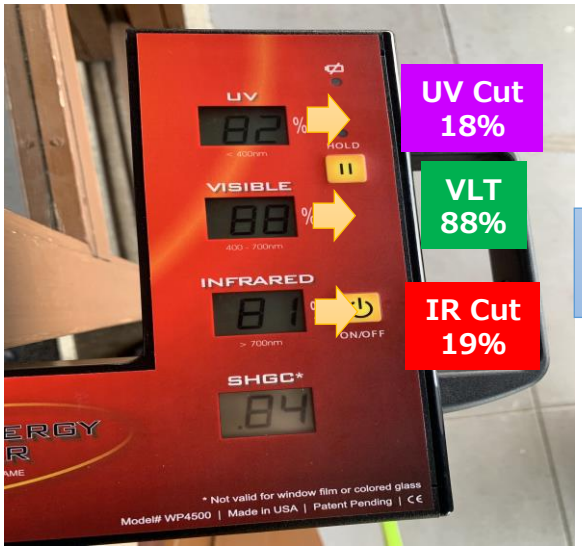
Near Infrared rays Cut Ratio= 19%

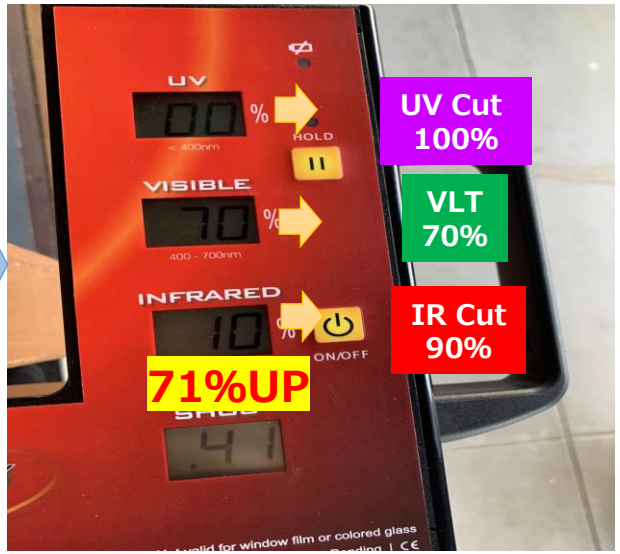
【After Coating】

・UV rays Cut Ratio = 100%)

・Visible Light Transmittance ratio =70%

・Near Infrared rays Cut Ratio = 90%

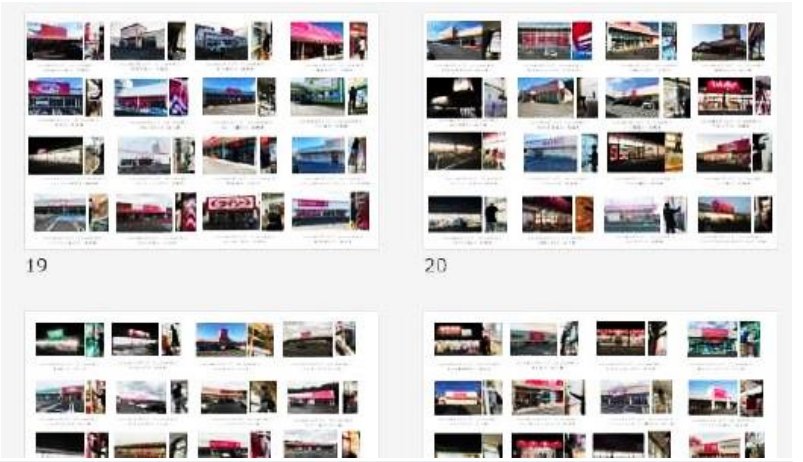


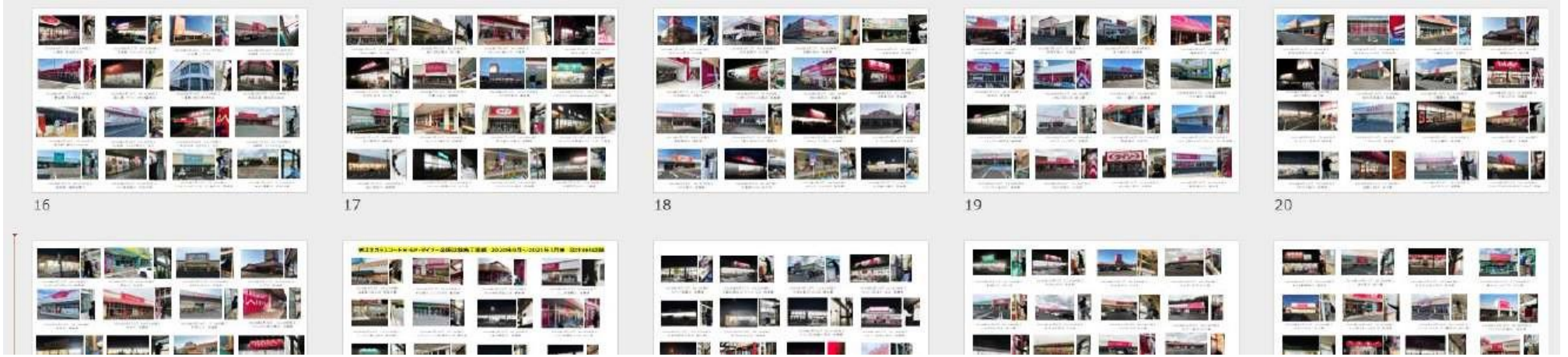


Satisfied Customers across Japan

100Yen Shop DAISO

40-100 SQM of Glass Window panes per shop of more than 1200 Daiso Branches across Japan from November 2019- August 2024.





Satisfied Customers across Japan

DRUG STORE MORI (Only New Store)

approximately 100-150 SQM of Glass Window panes per shop of more than 80 DRUGSTORE MORI Branches across Japan from April 2020- August 2024.





2020年12月26日 鹿児島春山店108㎡
2021年2月28日 大分三重町店137.04㎡
2021年3月6日 熊本大津町店110.53㎡





2021年5月28日 鹿児島川辺店133.66㎡
2022年6月5日 佐賀大和店 124.59㎡
2021年7月13日 宮城七北田店 112.72㎡





2021年8月30日 佐賀巨勢店 98.48㎡
2021年9月14日 長崎福田店 109.5㎡
2021年10月15日 鹿児島国分広瀬店 113.76㎡










2021年11月4日 鹿児島草牟田店 115.31㎡
2021年11月16日 徳島石井店92.21㎡
2022年1月7日 宮城角田店 110.65㎡
2022年1月25日 福岡和白丘店 115㎡
2022年1月30日 大分明野店 119.74㎡
2022年1月25日 福岡和白丘店 115㎡
2022年1月30日 大分明野店 119.74㎡
2022年2月19日 山口柳井店 86.92㎡










2022年2月23日 熊本田迎店 105.93㎡
2022年2月24日 愛媛東大洲店 121.86㎡
2022年2月24日 諫早高来店 115.57㎡
2022年2月28日 大分鶴居店 107.28㎡
2022年3月2日 長崎広田店109.29㎡
2022年4月14日 宮城古川若葉店105.36㎡
2022年2月28日 大分鶴居店 107.28㎡
2022年3月2日 長崎広田店109.29㎡
2022年4月14日 宮城古川若葉店105.36㎡










2022年4月29日 宮城・名取閖島店91.42㎡
2022年5月11日 愛媛中ノ庄店 78.35㎡
2022年5月13日 愛媛久万ノ台店103.3㎡
2022年5月22日 福岡筑後野店129.05㎡
2022年6月8日 佐賀、鳥栖村田町店 108.6㎡
2022年5月22日 福岡筑後野店129.05㎡
2022年6月8日 佐賀、鳥栖村田町店 108.6㎡
2022年9月5日 福岡浦志店 31.86㎡

Satisfied Customers across Japan


【Amazon Odawara warehouse】


【HOTEL in Hokkaidou】


【KEWPIE Mayonnaise headquarters 】


【 Kawasaki Heavy Industries Technical Development Division 】


【Tokyu hospital】


【 Kagoshima District Legal Affairs Bureau Kirishima Branch 】


【 Ministry of Internal Affairs and Communications 】


【 Hotel Japan Shimoda 】


【 Sapporo Beer Chiba Factory 】

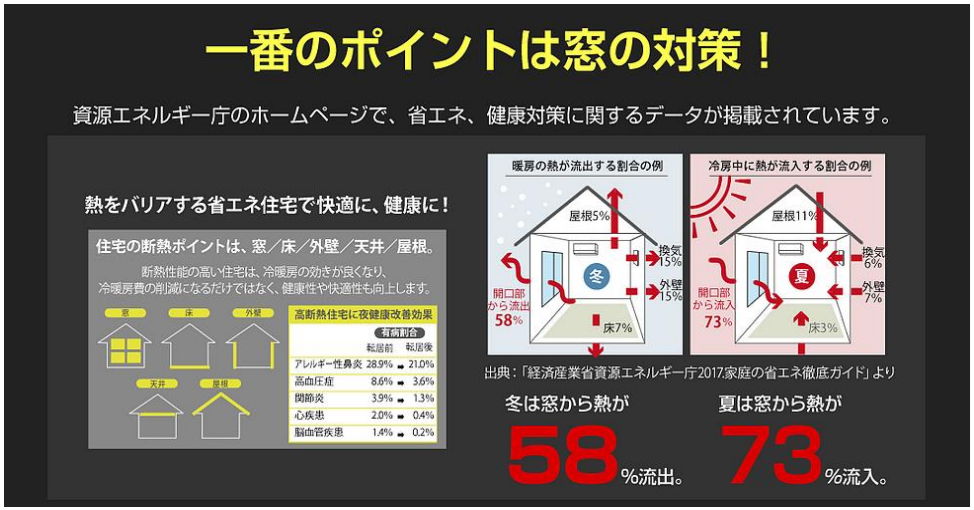

【 Tokyo Gakukan Niigata High School 】

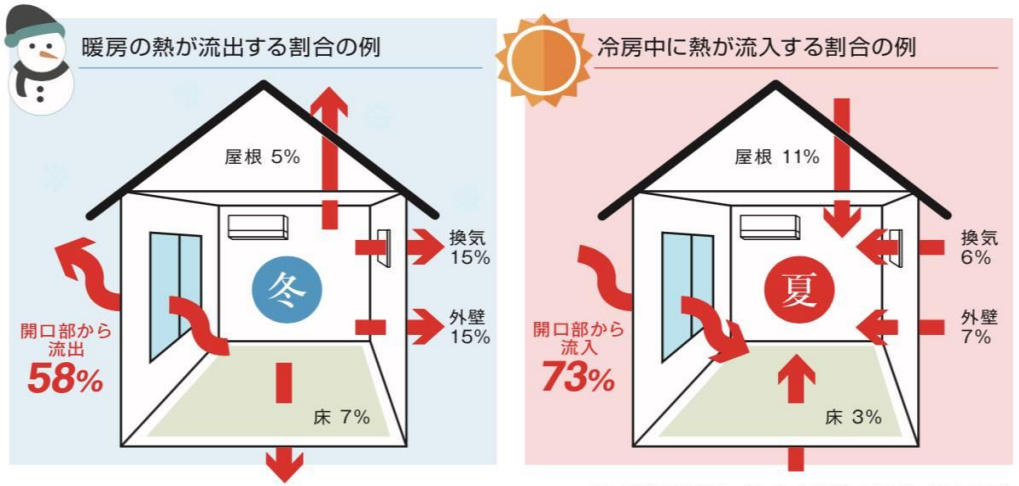

【 Edogawa City Hall 】


【 Japan Atomic Energy Agency 】

The most important point in energy conservation and insulation measures for buildings is insulation of window glass

経済産業省
資源エネルギー庁
Agency for Natural Resources and Energy

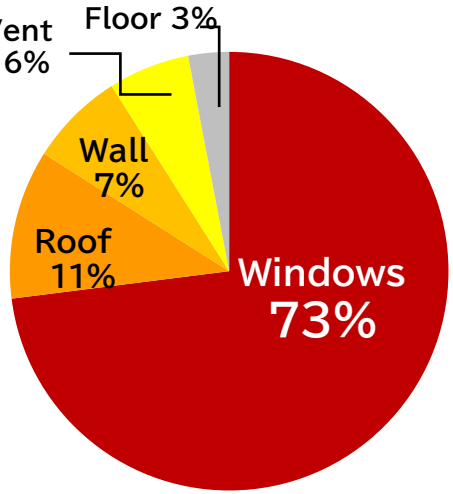




出典;資源エネルギー庁2017年家庭の省エネ徹底ガイド

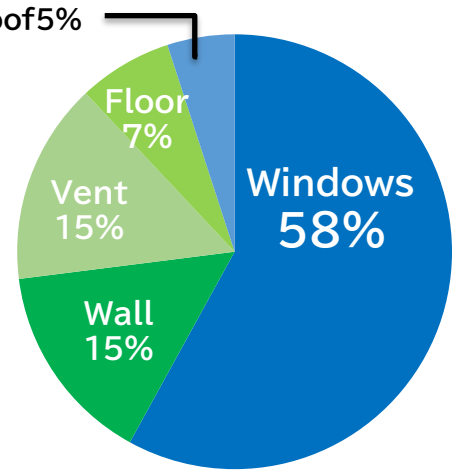
●The rate at which heat enters during cooling

Summer



●The rate at which heat escapes from the window during heating

Winter

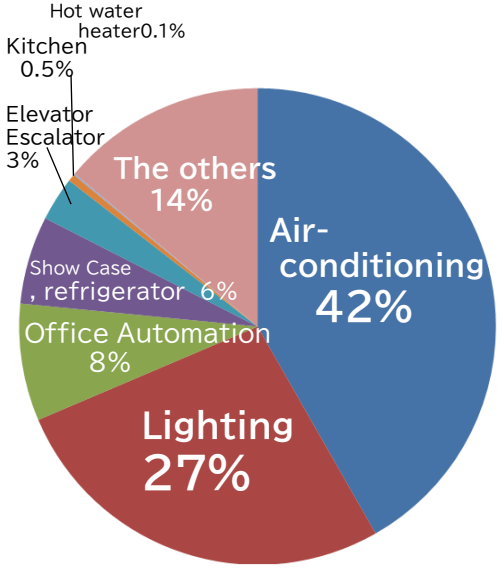


Reference material: Importance of thermal insulation on glass windows

It is a well established fact that air-conditioning units energy consumption is the biggest in both commercial and residential buildings.
Measures to lower the energy consumption of air-conditioning units will mean big energy cost savings.
How will we make air-conditioning more efficient?
For that, we must pay attention to windows where heat comes in and out of a building.

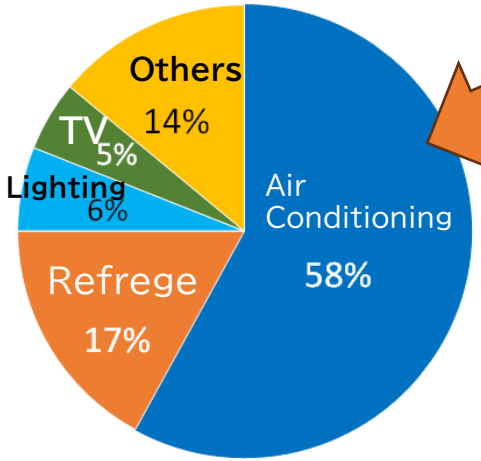
In the case of office building

Demand Structure of 2PM at office building



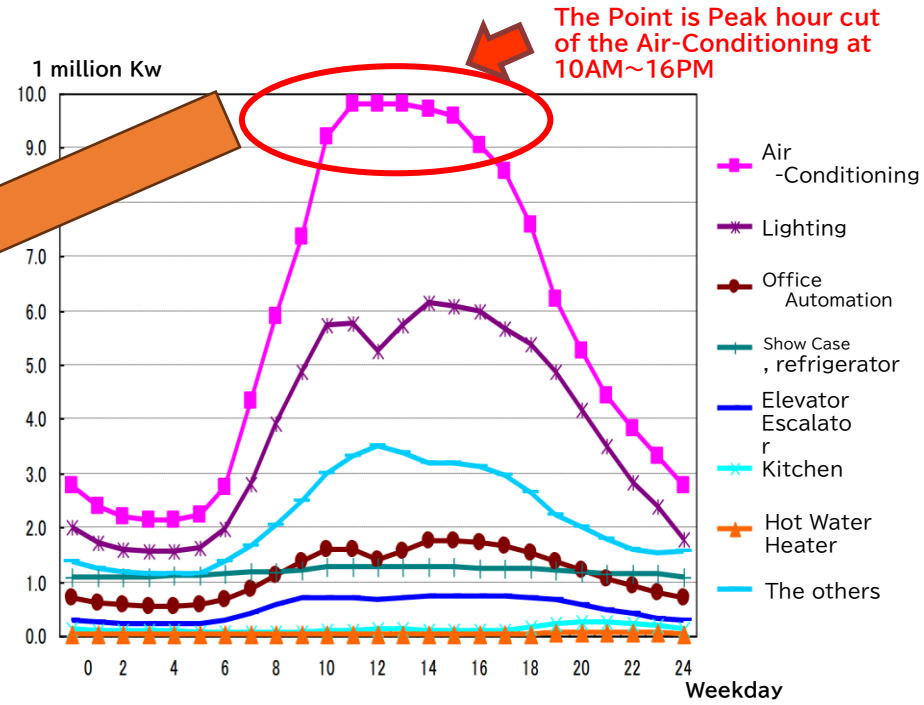
In the case of house

Average of all households in general households, power consumption ratio by usage



Assuming temperature conditions at 14:00 on July 23, recording the peak peak demand (59.99 million kW) in 2010

Demand for electric power at hourly intervals



The Information From Agency for Japanese Natural Resources and Energy on May,2011

Source: Estimate from Agency for Natural Resources and Energy

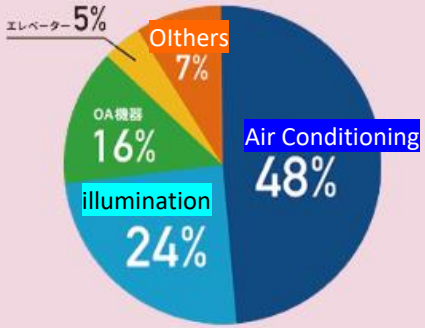
Reference materials Breakdown of electricity consumption in each industry

年間電気代削減（省エネ）率

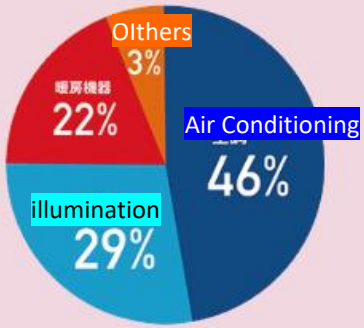
Annual electricity bill reduction rate

各業界別電気代の内訳

Office building

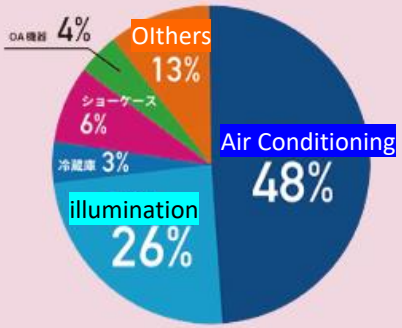


Restaurant



11.5% Reduction

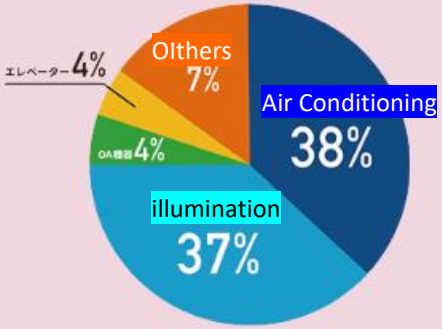
Retail store



12% Reduction

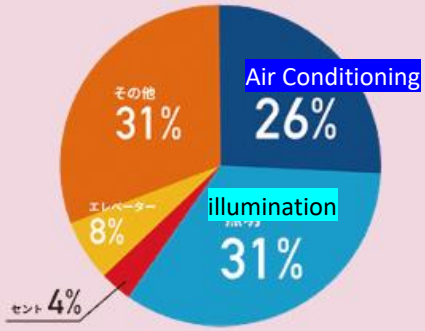
Air conditioning ratio 48% x energy saving rate 25%
= 12% energy saving of electricity bill

ホテル Hotel 旅館



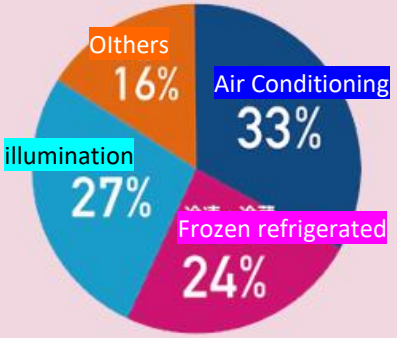
9.5% Reduction

Hospital



6.5% Reduction

ドラッグストア Drug Store



8.25% Reduction

自社の年間電気代に上記%をかけた金額が業界平均の省エネ額になります。

IRUV Cut Coat H-SC Advantages on Glass Windows

Heat-blocking effect:

Increases near-infrared cut rate by approximately 90% or more.
Near-infrared cut of 90% or more is achieved
Reduces direct solar heat during summer by approximately 8℃ to 15℃.

Ultraviolet Rays blocking effect:

99% UV-Rays blocked
Prevents fading of merchandise, flooring etc.
Deters flying insects with compound eyes

Condensation reduction:

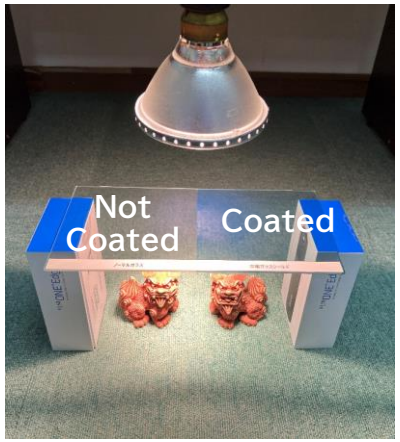
50% condensation reduction
Minimizes water dripping

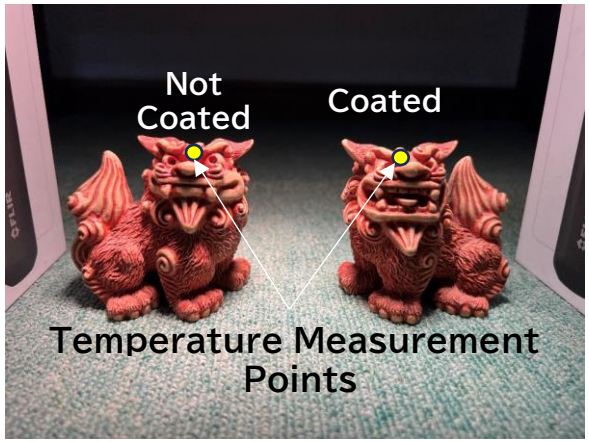
15-year weather resistance with a 10-year reinstallation guarantee.
2 times more durable and longer-lasting than regular window films.
* Reduces air conditioning load, resulting in energy savings of 25-30%.

Depreciation within 5 years (theoretical value).

**Note: The energy savings percentage may vary depending on specific conditions and factors.*
From the test results of the Ministry of the Environment demonstration certification project ETV.
https://www.env.go.jp/policy/etv/pdf/list/h25/051-1313a.pdf

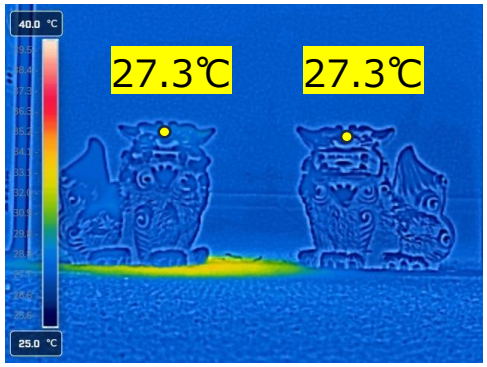
Comparison of normal glass and IRUV Cut Coat H-SC





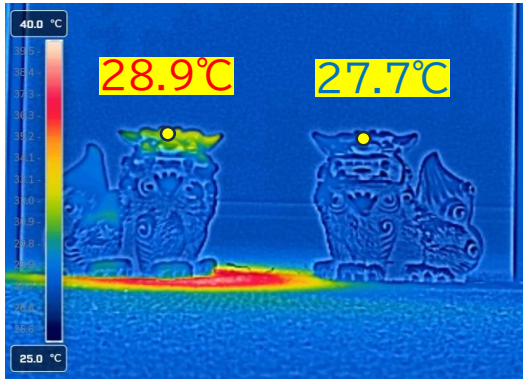
・A glass coating is applied to half the area of normal glass.
・Assuming we wanted to measure the temperature inside a room, we shone a light through the glass onto an ornament to measure its temperature.
・The thermal image also confirms that it effectively blocks infrared radiation.

Immediately after the light turns on



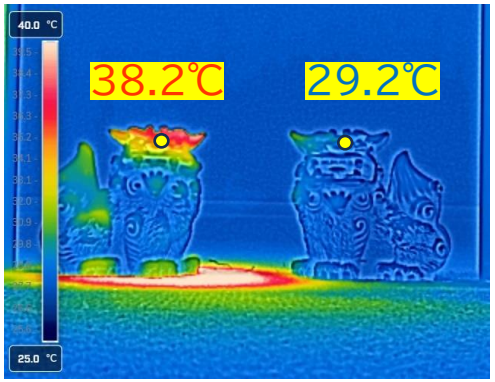
Temperature difference
None

1min later



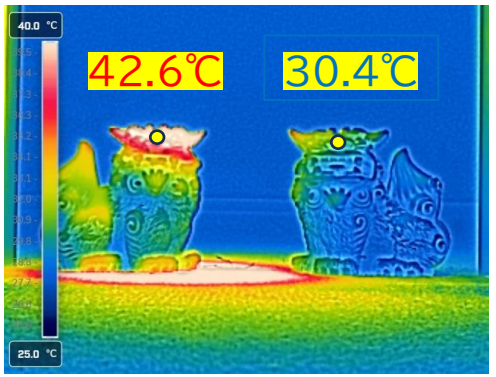
Temperature difference
1.2℃

5min later



Temperature difference
9.0℃

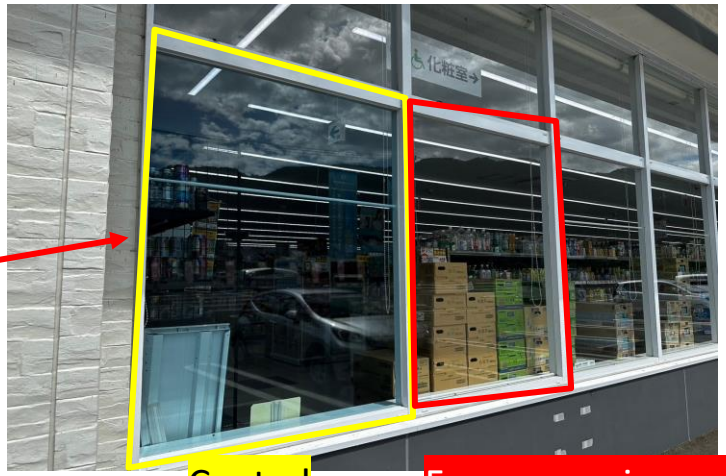
10min later



Temperature difference
12.2℃

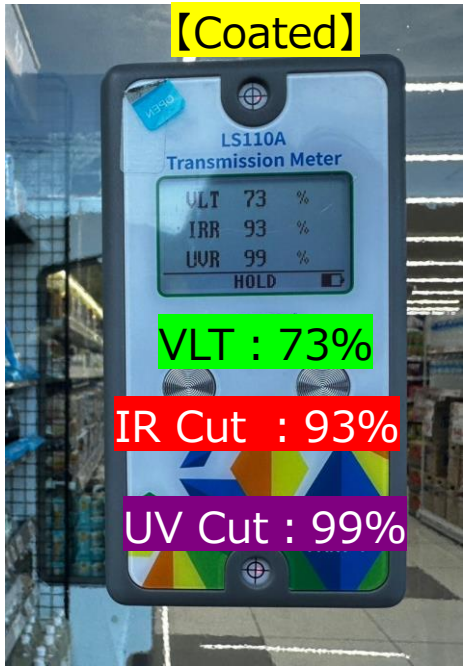
Test application to window glass at a certain drug store on July 30, 2024

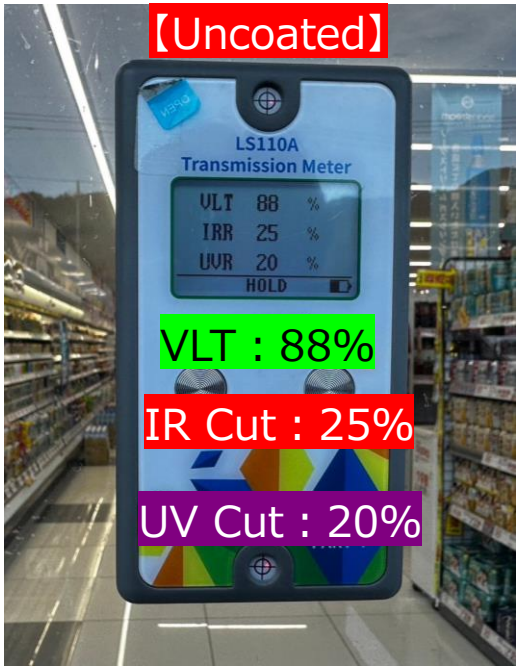
Test application coated



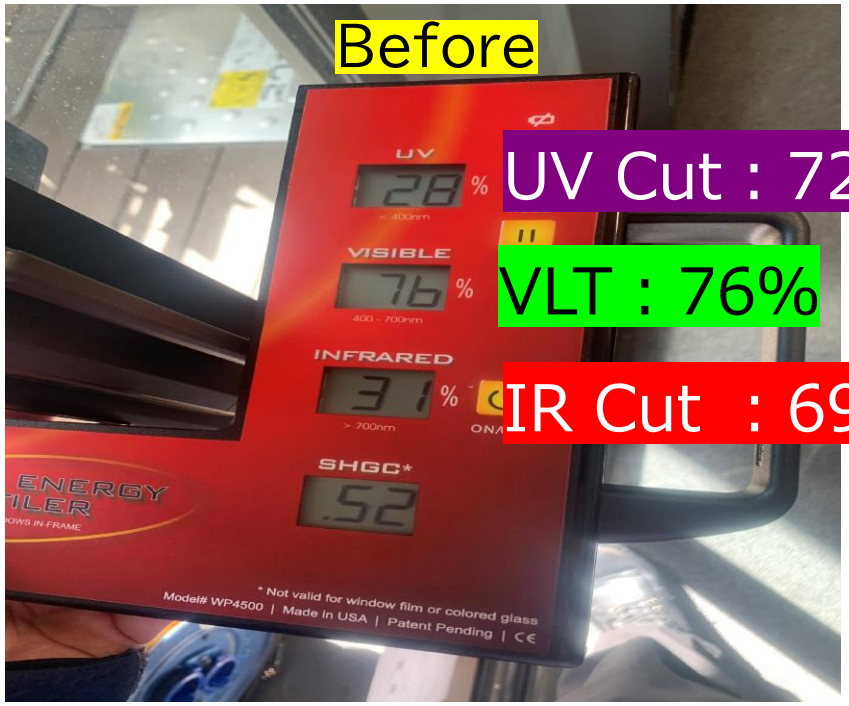
Coated

For comparison, uncoated





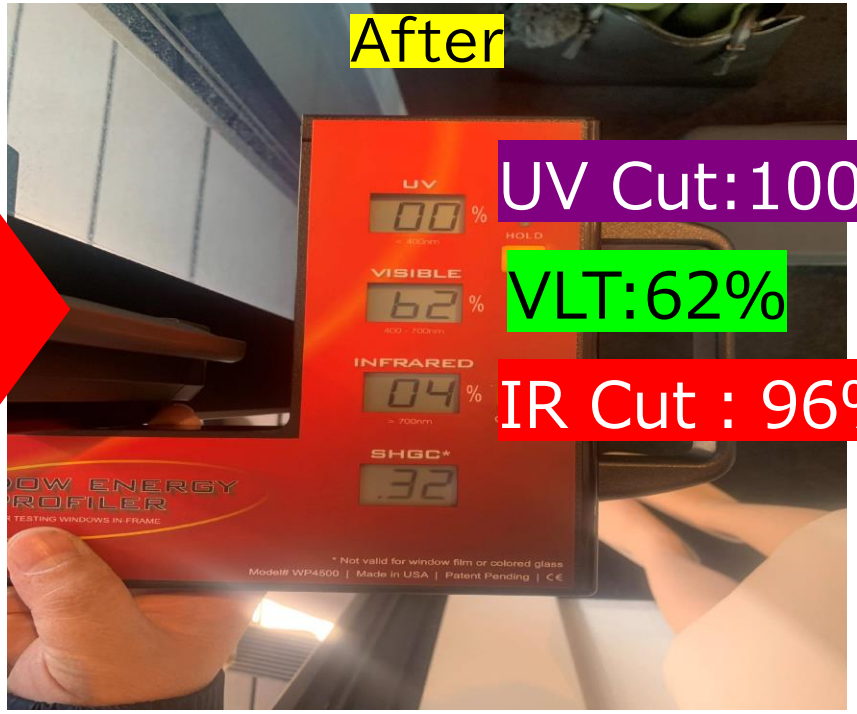
After applying on LOW-E double glazing Glass



UV Cut : 72%

VLT : 76%

IR Cut : 69%



UV Cut:100%

VLT:62%

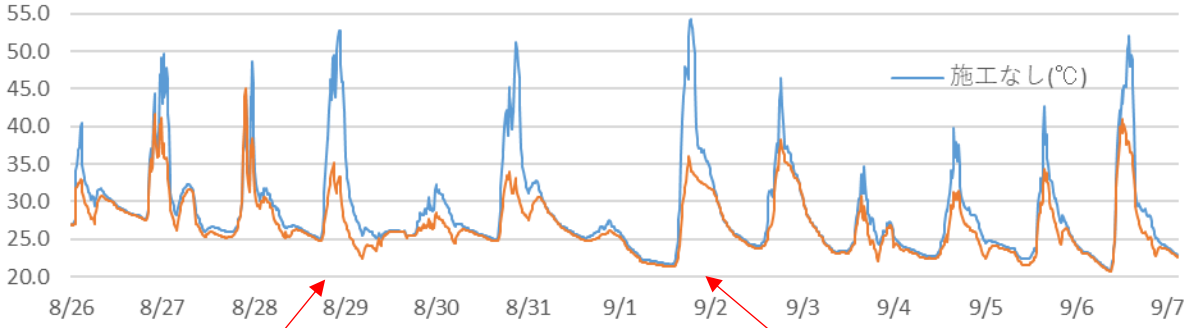
IR Cut : 96%

Temperature comparison between Showroom's Coated and Uncoated area.

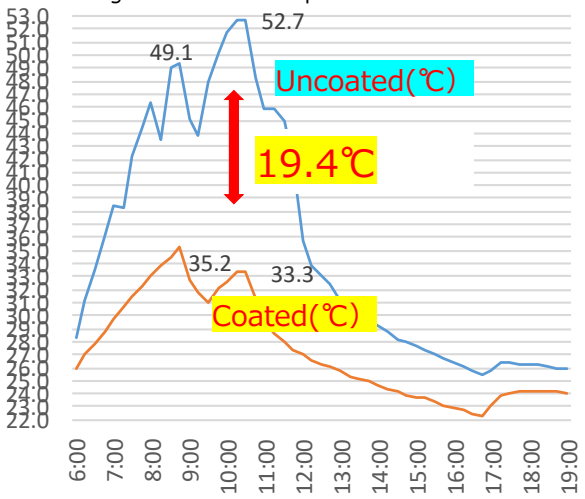
Temperature measurement period:
August 26, 2021 to September 7, 2021

<Coated area> <Uncoated area>

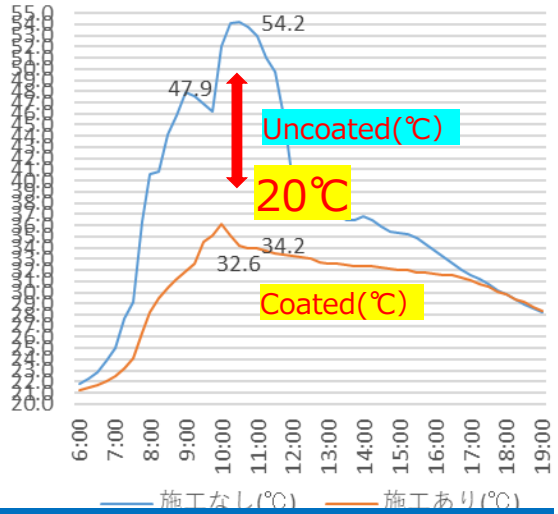
Maximum temperature difference: 19.4℃ ~20℃



■ Aug 29 Outside Temperature 21.0～29.7℃



■ Sep 2 Outside Temperature 17.9～26.2℃



Because the building faces southeast, the temperature difference begins to appear at around 7:00 a.m. The amount of sunlight reaches its peak at around 10:30 a.m., when the temperature difference is greatest. "Until now, we couldn't use the showroom in the mornings because of the heat, but after the installation, we were able to block out a lot of heat."

Energy saving simulation with energy saving rate of 15% when it will apply all window glass of 92.79sqm

	Simulation of energy savings of 15% in summer and winter when IRUV Cut Coat is applied	Number	Unit		Number	Unit		Total	Unit
①	Average monthly electricity consumption*	23	JPY	×	25050	kwh	=	576,150	JPY
②	**Average monthly air conditioning costs assuming average summer air conditioning ratio of 25%*2**	576,150	JPY	×	25%	%	=	144,038	JPY
③	Monthly energy saving cost in summer when energy saving rate is 15%※3	144,038	JPY	×	15%	%	=	21,606	JPY
④	Average annual energy savings in summer (6 months) when energy saving rate is 15%*4	21,606	JPY	×	6	months	=	129,634	JPY
⑤	Average monthly electricity consumption*	23	JPY	×	25050	kwh	=	576,150	JPY
⑥	**Average monthly air conditioning costs assuming average winter air conditioning ratio of 25%*2**	576,150	JPY	×	25%	%	=	144,038	JPY
⑦	Monthly energy saving cost in winter when energy saving rate is 15%※3	144,038	JPY	×	15%	%	=	21,606	JPY
⑧	Average annual energy savings in summer (4 months) when energy saving rate is 15%*4	21,606	JPY	×	4	months	=	86,423	JPY
⑬	Total annual energy savings for summer and winter	129,634	JPY	+	86423	JPY	=	216,056	JPY
⑭	Application price: Coating area x 10,000 yen (excluding tax)	92.79	sqm	×	11,000	JPY	=	1,020,690	JPY
⑮	Amortization period	1,020,690	JPY	÷	216,056	JPY	=	**4.72**	**years**
⑯	Profit after depreciation (JPY) Coating has a durability of 15 years	10.28		×	216,056	JPY	=	**1,196,952**	**JPY**
⑰	Annual CO2 emission reduction (TEPCO CO2 emission coefficient: 0.396kg-CO2/Kwh)	0.396		×	9,394	kwh	=	3,719.93	kg
⑱	How many beech trees will be planted per year to absorb the same amount of CO2? (11kg/tree)	3,719.93	kg	÷	11	kg	=	338	pcs
⑲	How many trees will be planted over 15 years?	338	pcs	×	15	years	=	**5,073**	**pcs**

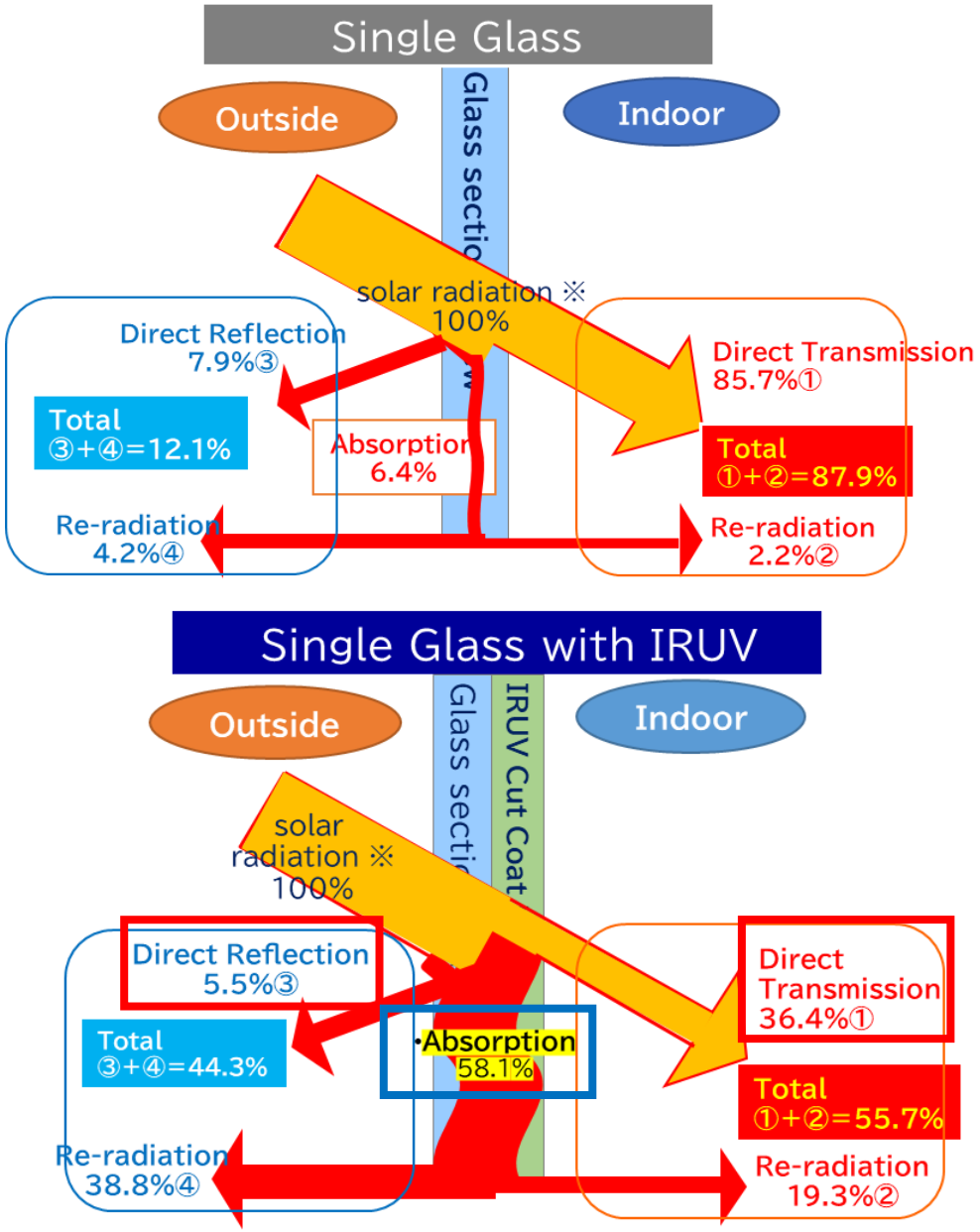
※ The unit price of 23 yen per 1kw is calculated based on the monthly average of 19 yen in 2024 * 1.2 times. (As a price increase in June) It is possible that the actual price is higher.

※2 According to government data on electricity usage at drugstores, the annual average is 33%, but we put the figure at the lower end of 25%.

※3 Normally, energy savings of 20-30% can be achieved by adjusting the room temperature by 2-3°C, but we have set it lower at 15%, an average value that results in 10-20% energy savings by adjusting the room temperature by 1-2°C.

※4 The assumption is that the facility will be used for 6 months from May to October in summer and 4 months from December to March in winter.

The mechanism behind the summer heat shielding effect



Optical property measurement test

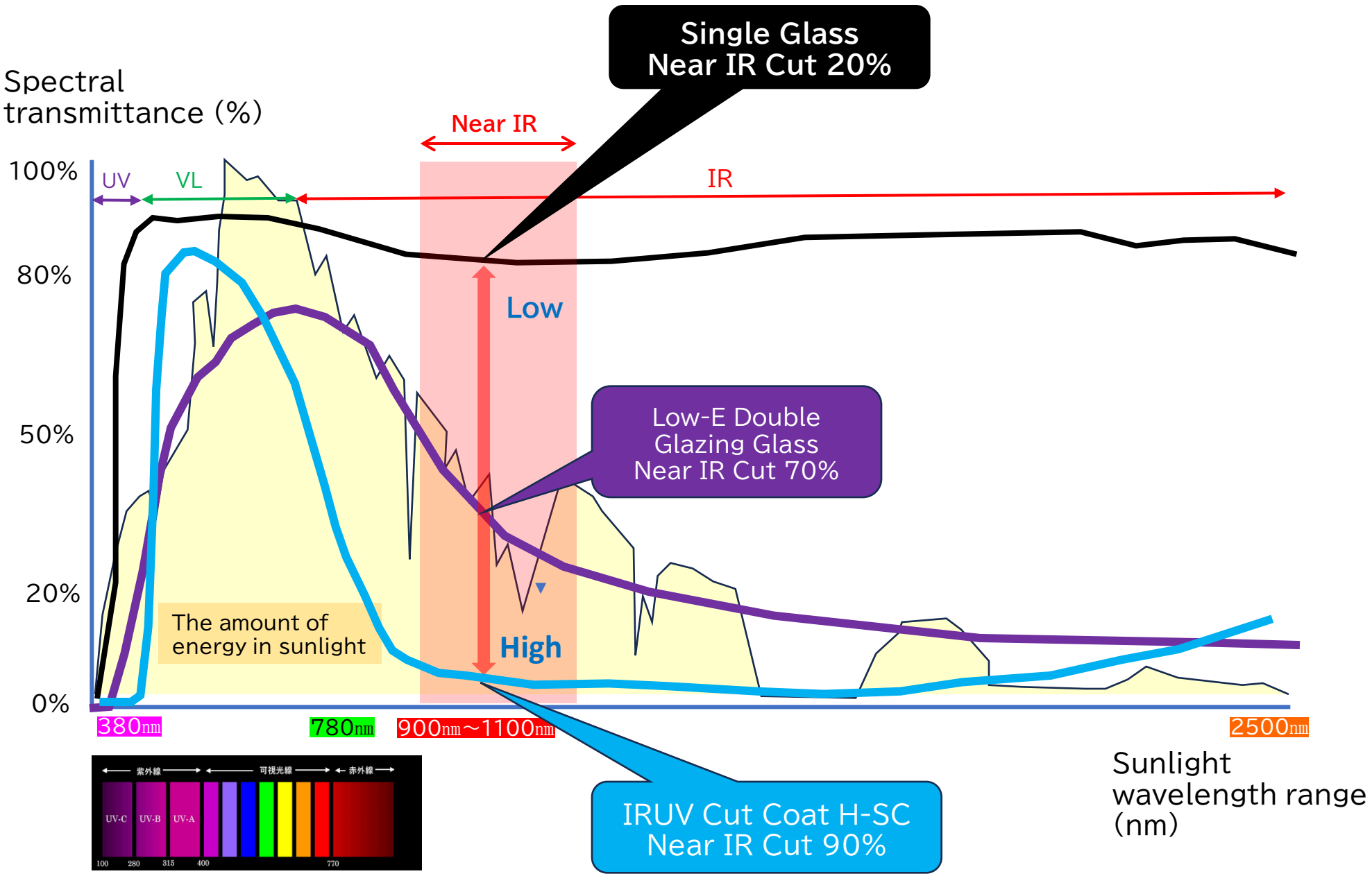
表 2　光学性能・熱性能試験結果（商品名：省エネガラスコート H-SC）

項　目				結　果
紫外線透過率		τ_{UV}	(%)	0.5
可視光線透過率		τ_V	(%)	72.4
可視光線反射率		ρ_V	(%)	7.0
日射透過率 Solar transmittance		τ_s	(%)	36.4
日射反射率 Solar reflectance		ρ_s	(%)	5.5
日射吸収率 Solar absorptance		α_s	(%)	58.1
室内側（塗布面）	垂直放射率	ε_{ni}	(−)	0.92
	修正放射率[a]	ε_i	(−)	0.862
室外側（ガラス面）	垂直放射率	ε_{no}	(−)	0.89[b]
	修正放射率[a]	ε_e	(−)	0.837
遮蔽係数		S	(−)	0.64
日射熱取得率		η	(−)	0.56
熱貫流率		U	[W/(m²·K)]	6.0

注 [a] 修正放射率は，JIS A 5759 表 15 に規定する係数によって換算した。
[b] JIS R 3106 附属書 JB の JB.2.1 による。

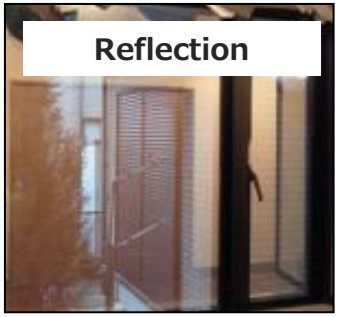
*Solar radiation = the entire wavelength range of ultraviolet, visible light, and infrared rays (0nm to 2500nm), not just infrared rays.

Comparison of optical properties and heat insulation performance with competitors



IRUV Cut Coat H-SC versus Window Film

	IRUV Cut Coat H-SC	Window Film
Durability/Lifespan	15 years	5-7 years
Appearance	Seamless due to roller application	Visible Seams due to fixed film size
Applicability on Uneven Glass	Applicable	Difficult to apply
Glass Appearance and Visibility	Reflectance is maintained Views and scenery is kept even at night	High Reflectance affects views at night
Shatter prevention	none	yes
Application conditions	Dust and other particles stick but can be repaired Solvent odor during application but dissipates after drying	Bubbles may form No odor

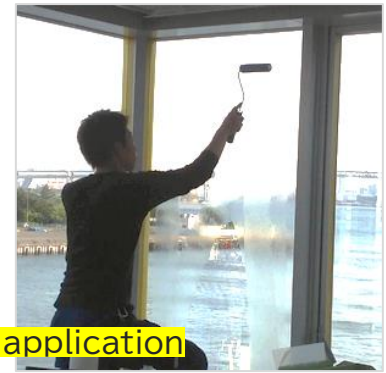


IRUV Cut Coat H-SC versus Window Film

	Sketch IRUV Cut H-SC	LA Window Film	DIY Tint Film
Price /SQM	₱ 4000.00	₱ 8000	₱600
Warranty/ Years	10 Years	5	0
Product Lifespan/ Years	15	5	1-2
Infrared-Heat Cut	90%	96	75
Ultra-Violet Cut	99%	99%	91%
Visible Light Transmission	70% and more	70% and more	40% and more
Tint/Color	Light blue	Light blue	Amber/Brown/blue
Application method	Paint Roller	Cut and stick	Cut and Stick
Application area	No limit	Film size limited	Film size limited
Reflection	No reflection	With Reflection	With Reflection
Smell	Solvent/ Alcohol	None	none
Shatter prevention	none	yes	yes

APPLICATION: IRUV Cut Coat H-SC versus Others

【Sketch・ IRUV Cut Coat】



Roller application

【Other Coating company】

Sponge Bar

Spray

Dripping

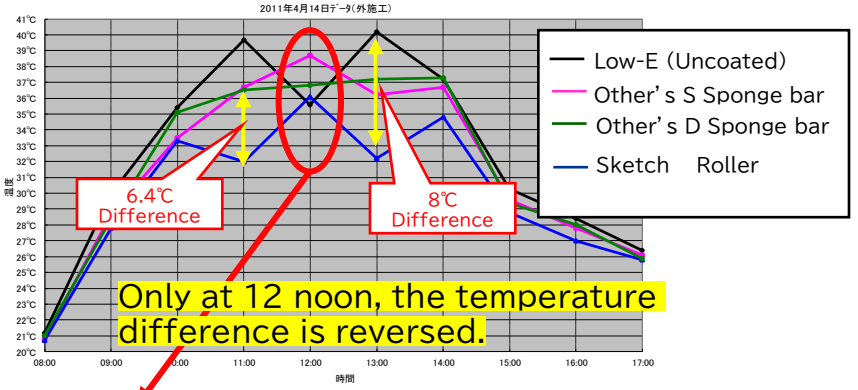
	Sketch IRUV Cut Coat H-SC	Other company
Application	Roller application	Sponge/ Spray/ Dripping
Near IR Cut %	90%～	~50%
Nano Material	CTO	ATO 90% or more (partly ITO)
Workability	Corrections and repairs can be made during application = uniform film thickness	Difficult to correct or repair during application = film thickness cannot be adjusted
Coating finish	There is almost no dripping or uneven coating	Dripping and uneven coating are likely to occur
Application amount per 1sqm	25g to 30g (no problem even if you apply more)	20-23g (if too much is applied, unevenness will occur, and the coating will be thin)
Large glass area of 3 sqm or more	Coating can be done by adding multiple people, with each person covering an area of 2sqm	Very difficult to apply
Removal coating film	Can be easily removed and restored to its original state using a special remover.	There is almost no remover.
Quality Control	Performance can be controlled with an error of within 2 to 3% no matter where you measure.	Performance may be poor because the film thickness differs between technical tests and actual film thickness.

Actual side by side comparison with other product brands for contract bid.

Test installation and temperature comparison of three companies side by side / A certain building in Tokyo with Low-E double-glazed windows, 3983.1 m2 (2011)

•A test application was requested by a general contractor for a building with low-E double-pane glass because the building was still hot inside. Window film wasn't considered due to heat-cracking thus, glass coating as a heat-blocking measure was considered. Three companies were selected, including ours. Simultaneous side-by-side test applications was carried out on the exterior glass window surfaces by the three companies. After application they verified the quality of the finish and installed temperature data logger inside the room to verify the coating agent with the highest heat-blocking effect including on uncoated glass surface. Logged data confirmed that our coating agent was the most effective in blocking heat despite that fact that our test glass windows was the only one not shaded by trees compared to the other competitors thus, winning the contact for product application on their building glass windows with total area of 3,983.1 sqm.

Comparison of temperature measurement data:
April 11th to 14th (below is data from the 14th)



Other company's S finish
Drips badly

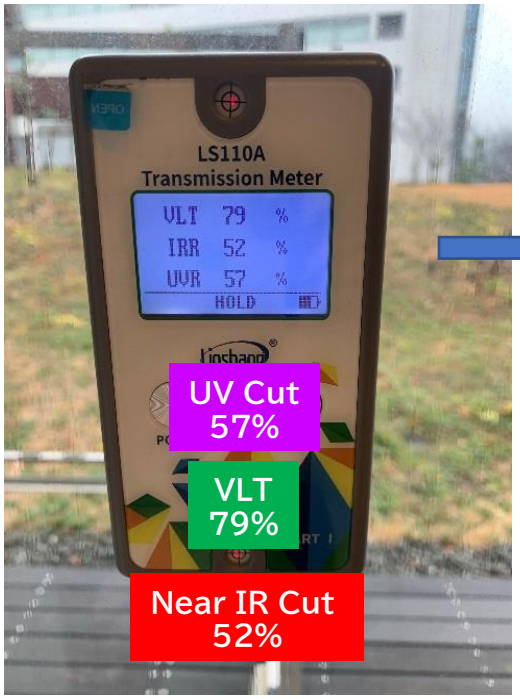
We found that all glass surfaces other than the areas where we applied the coating were in the shade, due to trees, so the temperature was low.

Problems with other brand's insulating glass coatings

Received an order to solve a complaint about Other's product application

In January 2023, A Certain Painting company installed 600sqm of a product of another company, on the windows of a data center in Kanagawa Prefecture, but there were serious problems with uneven coating and distortion of the view, leading to the customer rejecting the delivery. The construction company consulted us, and after carrying out a test installation on site, the customer gave us the OK, and we carried out the installation on an area of 900sqm.

After installation



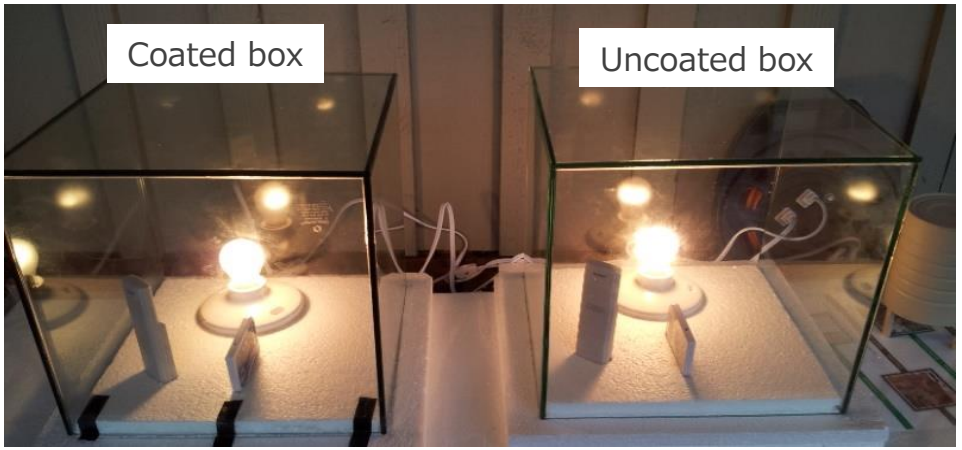
Uncoated

Energy Saving Performance in Winter

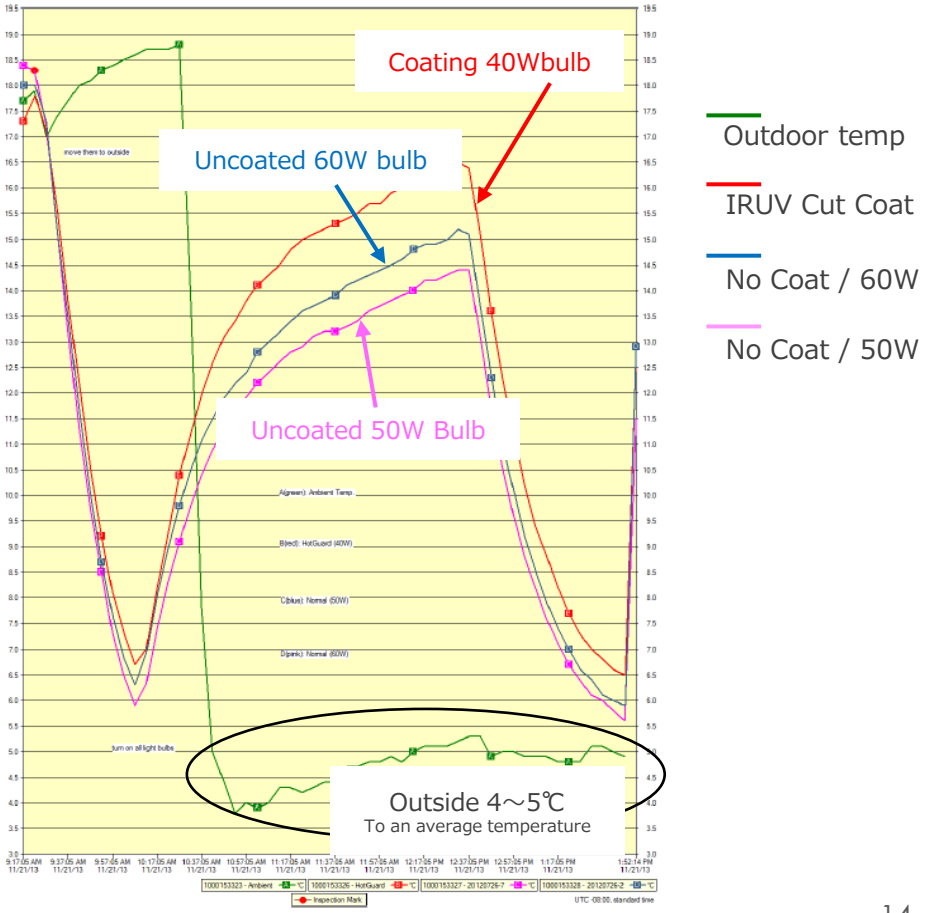
Heating heat energy

Heat escape prevention test in Canada

Glass box with a heat source (light bulb) and thermometer. As a result of measuring the transition of the temperature inside the BOX, Uncoated box and coated box installed outdoors, The temperature inside the coated BOX (40W) is the highest and suppresses heat escape compared to the uncoated BOX (50W, 60W). The coating warms the room with a small amount of heat, improving heating efficiency and showing a high energy-saving effect.



■ Exam contents:
Prepare three 30cm square glass boxes and install it outdoors with a light bulb inside. Measure internal and external temperatures. One glass BOX is covered with a glass coat and 40W bulbs are used. The remaining two glass boxes were left uncoated, and 50W and 60W bulbs were installed.
■ Period: 9 am~1pm on Nov 21,2013
■ Test location: Vancouver, Canada
■ Outside temperature: 4 ℃ ~ 5 ℃, cloudy weather



Energy Saving Performance in Winter

Energy Saving for School

As a result of application at an elementary school in Vancouver, Canada and comparison with the air conditioning costs from 2009 to 2011, an average 16% reduction in air conditioning costs were demonstrated. Converting 16% into monetary amounts will reduce air conditioning costs by 5,472 Canadian dollars (approximately 474,200 yen) annually, so application costs can be amortized and recovered within 1.97 = 2 years. (8 years will be profitable due to durability over 10 years)




	2011			2010			2009		
	Gas Consumption	HDD Monthly Total	GJ/HDM	Gas Consumption	HDD Monthly Total	GJ/HDM	Gas Consumption	HDD Monthly Total	GJ/HDM
Jan.	459 GJ	427.5 HDM	1.074	358 GJ	334.2 HDM	1.071	549 GJ	491.5 HDM	1.117
Feb.	406 GJ	407.6 HDM	0.996	370 GJ	304.3 HDM	1.216	414 GJ	391.3 HDM	1.058
Mar.	**292** GJ	345.1 HDM	0.846	399 GJ	317.8 HDM	1.256	436 GJ	406 HDM	1.074
Apr.	288 GJ	320.2 HDM	0.899	253 GJ	253.2 HDM	0.999	233 GJ	266.4 HDM	0.875
May	201 GJ	211 HDM	0.953	150 GJ	185.3 HDM	0.809	121 GJ	166.4 HDM	0.727
June	76 GJ	82.4 HDM	0.922	86 GJ	91.6 HDM	0.939	44 GJ	28.4 HDM	1.549
July	29	HDM		51	HDM		179	HDM	
Aug.	30	HDM		21	HDM		167	HDM	
Sep.	51 GJ	56.8 HDM	0.898	54	81.4 HDM	0.663	64 GJ	73.5 HDM	0.871
Oct.	205 GJ	251.1 HDM	0.816	211	206.5 HDM	1.022	141 GJ	246.6 HDM	0.572
Nov.	382 GJ	385.6 HDM	0.991	441	386.8 HDM	1.140	602 GJ	326.1 HDM	1.846
Dec.	434 GJ	440 HDM	0.986	457	405.4 HDM	1.127	541 GJ	491.6 HDM	1.100
Total(4mo)	1072 GJ	1133.50 HDM	0.946	1163 GJ	1080.10 HDM	1.077	1348 GJ	1137.80 HDM	1.185

4) Magee Secondary

Date Job completed:	August, 2011	
Method:	IRUV cut Liquid Film	
Cost of Materials:		$10,800
Coated Area:	15% of glazing area	
Average Gas Consumption:		$38,000 /year
Heating Gas Consumption:		$34,200 (90% of Total Gas Consumption)
Energy Savings:		16.00% (Saving Target was 5% on heating, 10% on cooling)
Savings per year:		**$5,472.00 /year**
Payback (years):		**1.97 years**

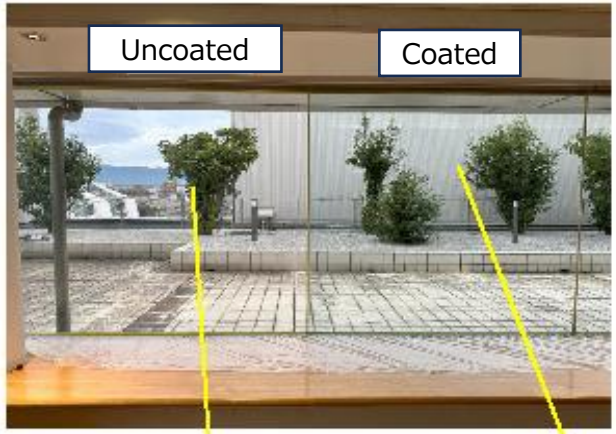
4 mo(Sep.-Dec.) comparison

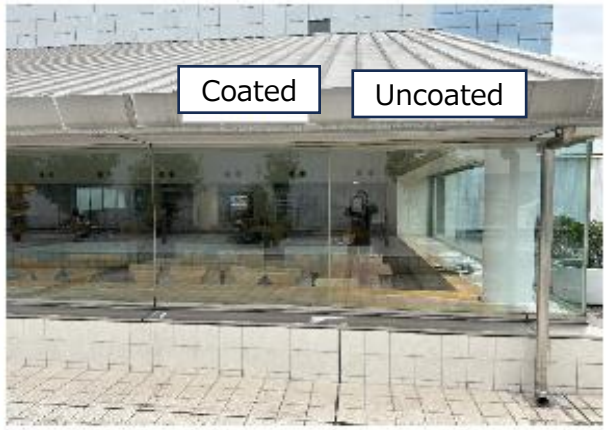
Savings 2011 vs.2010	12%
Savings 2011 vs.2009	20%
Ave.	16%

Comparison of surface temperatures of coated glass surfaces in winter (without direct sunlight)

Minami Ward, Kyoto City, November 11, 2023, 10:00, facing south

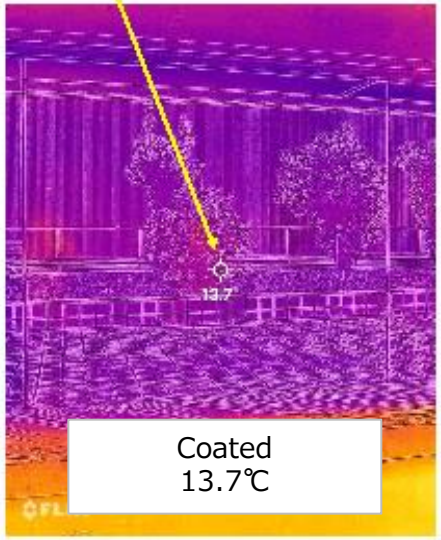
appearance

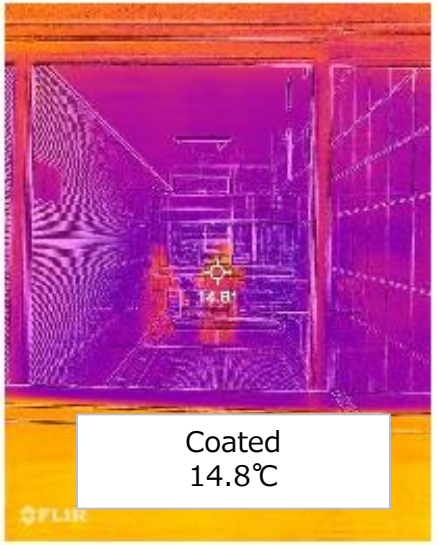




Uncoated glass 10.9℃
Coated glass next to it 13.7℃
Coated glass in the same room 14.8℃

The surface temperature of the uncoated and coated window glass surfaces next to each other is 13.7℃ due to the heat being pulled between them. The coated glass surfaces in the same room are 14.8℃.





It has been demonstrated that by absorbing heat from inside the room and raising the surface temperature of the window glass, it reduces the loss of heat through the window (insulating effect), prevents the window from getting cold, and inhibits condensation.

Insulation effect verification in winter (comparison of internal temperature with and without coating)

Measurement date:
February 26th, 19:00 - approx. 2 hours

Measurement location:
1st floor warehouse in Osaka city (shutter open)

Outside temperature: 10.6℃

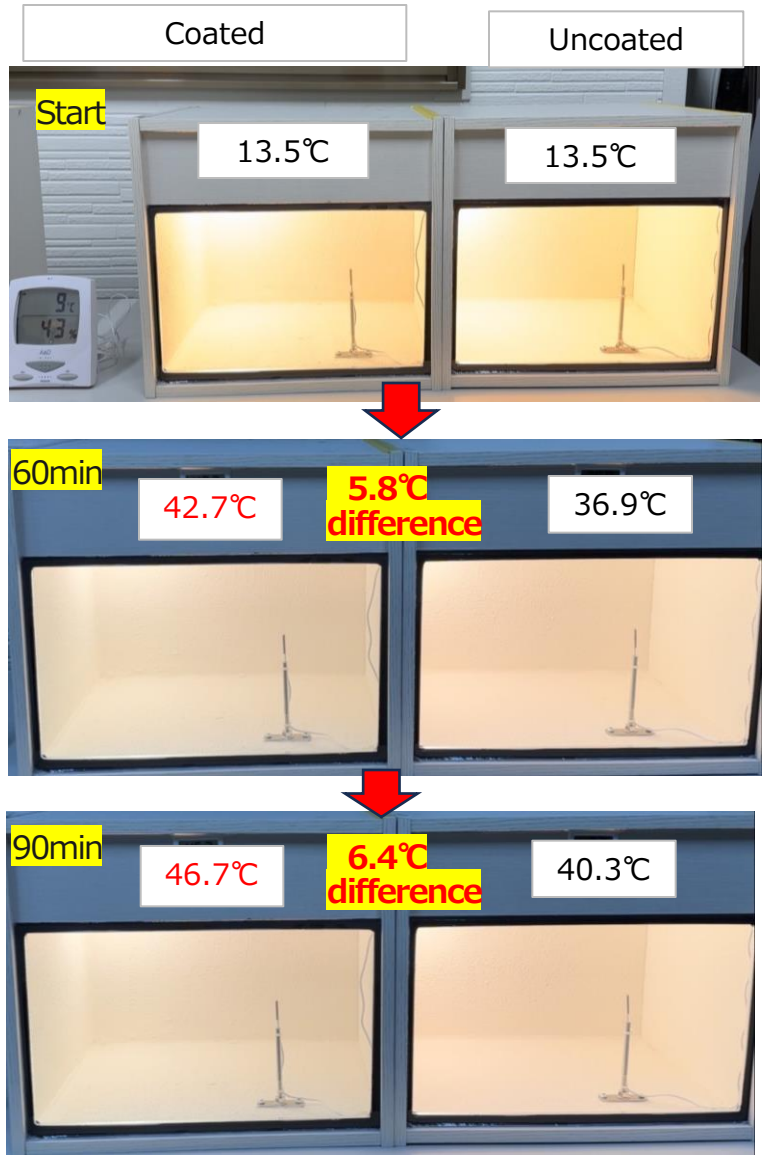
Measurement materials and conditions:
4 wooden boxes were made, the inside was coated with heat insulating paint (warm and cold far infrared shield), and various parts were sealed.
Glass size was 210 x 350 (mm) single plate 3mm and Low-E Pair Multi Super Clear S.

Glass coating was applied on the left side, and not applied on the right side.

A 100W krypton bulb and a thermometer were placed inside the box, and the temperature change inside the box over time was recorded on video.

【 Comparison of coated and uncoated single glass 】

【 Comparison of coated and uncoated double glazing 】



inspection result

Coating the room drastically reduces heat loss.
= Proven insulation effect.
= Reduces cold zones around windows.
= Prevents condensation

Condensation Suppression in Winter

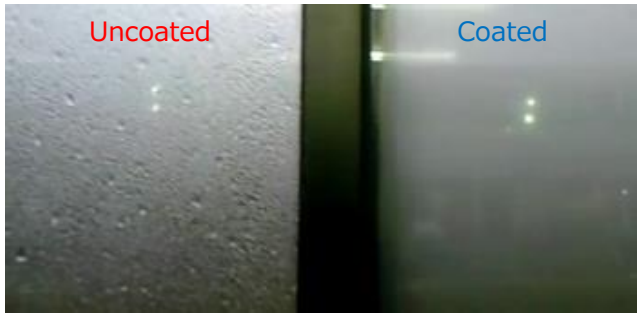
50% suppression of Dew Condensation in Winter

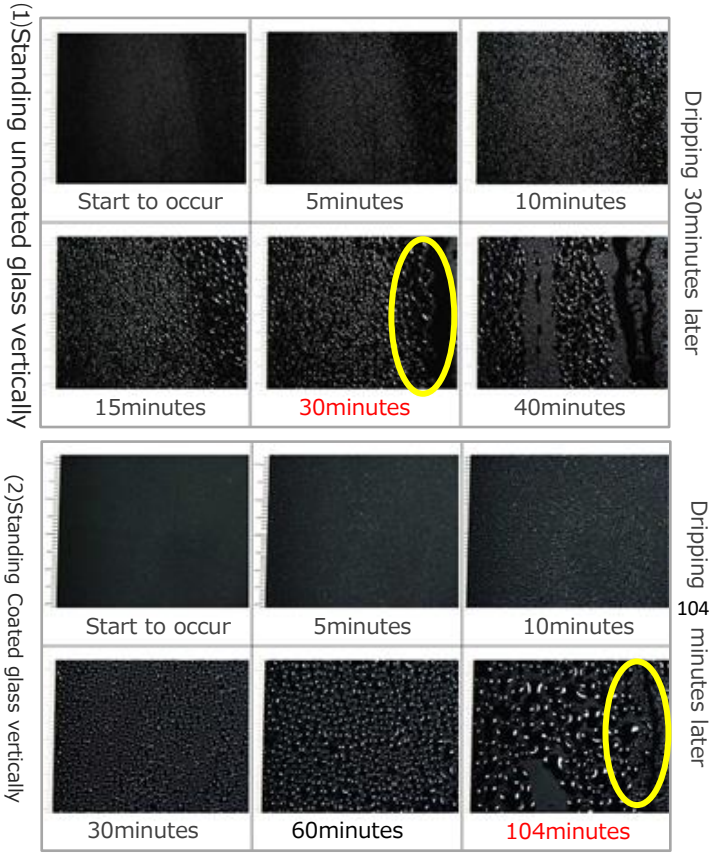
Condensation means that in the winter, moisture-containing air is cooled on the window glass and becomes water droplets. When coated, the glass surface absorbs heat, warming the glass surface and slowing down condensation. In addition, since the water retention of the coating surface itself is high, the time it takes for the water to drip is as follows: uncoated glass = 30 minutes, coated glass = 104 minutes.

High Environmental Engineering Co., Ltd.
"Experimental report on condensation" in July 2005

Test category	Time to start dripping
(1)Uncoated glass	30minutes later
(2)Coated glass	104minutes later

Difference in condensation state between coated and uncoated





To customers requesting Coating application work

Please note the following points regarding coating application.
We ask for your understanding and consent in advance.

•Note 1) There is a solvent/paint thinner odor during coating. If the window glass is fully opened, the odor will disappear in 2-3 hours, but if the window glass cannot be opened, the smell will remain until the next day. People who are sensitive to the odor are asked to go outside during the application until it dries.

•Note 2) Dust will adhere to the coating film until the surface dries (Drying time is 30 minutes in summer and more than an hour in winter).

•If we examine the product from a distance of at least 1 meter and there are no coating dripping or unevenness view, we will hand it over to the customer.

•Note 3) Coating wired glass is not recommended due to the possibility of thermal cracking. (The same applies to film paint-over).

•If the coating is applied at the customer's request and thermal cracks occur later, glass replacement will not be guaranteed.

•Note 4) For condensation prevention application, application can only be done during a time of the day where there is no condensation instance.

To customers requesting Coating application work

Please note the following points regarding coating application.
We ask for your understanding and consent in advance.

•Note 5) Coating will be done when the glass is not exposed to very high temperatures. High glass temperature will cause coating unevenness and distortion of glass view.

•Note 6) Do not touch the glass until the coating is fully dried in about two days.

•Note 7) It takes about 10 days in midsummer and about a month in midwinter for the coating to fully harden. After 1 month, glass windows cleaning can be done.

•Note 8) To clean the glass window, wash it with diluted neutral detergent or simply wipe with water.

•Please note that general glass cleaning products cannot be used as the coating has poor resistance to alkaline substances.

•Do not use abrasive or hard brushes or scraper when cleaning coated glass windows so as not to scratch or peel off the coating.

•Note 9) Stickers, films, sheets and other material with strong adhesives will peel off and damage the coating when they are removed.

•Note 10) We offer a 10-year guarantee on re-installation, conditions apply specially for exterior installations and film paint-overs.

Warranty details after Application (disclaimer) and cleaning precautions

Care Instructions After Coating

(Interior) Heat-blocking and UV-cut coating has been applied to this window glass.

(IRUV Cut Coat H-SC)

This window glass was coated with heat-blocking and UV-cut coating on April 25,2025

Please note the following precautions:

① Don't touch the window glass for about 2 days after coating.

② Don't clean the window glass for one month after coating.

③ Don't attach anything to the coated (interior) surface.

④ Don't avoid placing resin-based materials on the coated surface.

Maintenance Precautions After Coating

※ Be careful when opening or closing curtains for about one week.

※ Don't rub with materials that can cause scratches.

※ For regular cleaning, use water or diluted neutral detergent and wipe with a soft cloth if possible.

※Please avoid using alcohol-based, alkaline, or acidic cleaners.)

※When using a squeegee during cleaning, please ensure that the metal part does not come into contact with the glass surface.

※ Do not attach adhesive tapes, stickers, or posters.

application site	Ex.) ○○Wa r d ○○1-2-3、Tokyo Residence of Mr. Taro Yamamoto
Application Date	Ex) April 1, 2024
Area and place	Ex.) 18.9㎡（1 F Living･Kitchen、 2F, 3 Bed rooms、Toilet、Corridor)
Warranty period	10 years from the application completion date
Notes for cleaning	To clean the window glass, wipe it with water or a soft cloth with a diluted neutral detergent one month after the application is completed.
Warranty information	f peeling, cloudiness, or yellowing occurs within the warranty period, re-coating will be done on damaged section. *Conditions apply
Disclaimer (out of warranty	① Damage caused by the customer. ② Damage caused by special detergent or alkaline detergent for cleaning glass. ③ Damaged due to alcohol and other solvents ④When the coating film is intentionally damaged or peeled off ⑤Damaged or peeled off due to a natural disaster ⑥ When another product is applied over the coating ⑦ Exterior coating damage ⑧Coating applied on glass with uneven surface ⑨ Damaged caused by stickers and other products applied on top of the coating ⑩Glass replacement and cracked/broken glass ⑪Coating applied on materials other than glass.
Application original contractor company	**Subcontractor (Coating Product applicator)**

Technical Data

■ Optical property measurement test

表 2　光学性能・熱性能試験結果（商品名：省エネガラスコート H-SC）

項目				結果
紫外線透過率		τ_{UV}	(%)	0.5
可視光線透過率		τ_V	(%)	72.4
可視光線反射率		ρ_V	(%)	7.0
日射透過率		τ_e	(%)	36.4
日射反射率		ρ_e	(%)	5.5
日射吸収率		α_e	(%)	58.1
室内側（塗布面）	垂直放射率	ε_{ni}	(−)	0.92
	修正放射率 a)	ε_i	(−)	0.862
室外側（ガラス面）	垂直放射率	ε_{no}	(−)	0.89 b)
	修正放射率 a)	ε_e	(−)	0.837
遮蔽係数		S	(−)	0.64
日射熱取得率		η	(−)	0.56
熱貫流率		U	[W/(m²·K)]	6.0

注 a) 修正放射率は，JIS A 5759 表 15 に規定する係数によって換算した。
b) JIS R 3106 附属書 JB の JB.2.1 による。

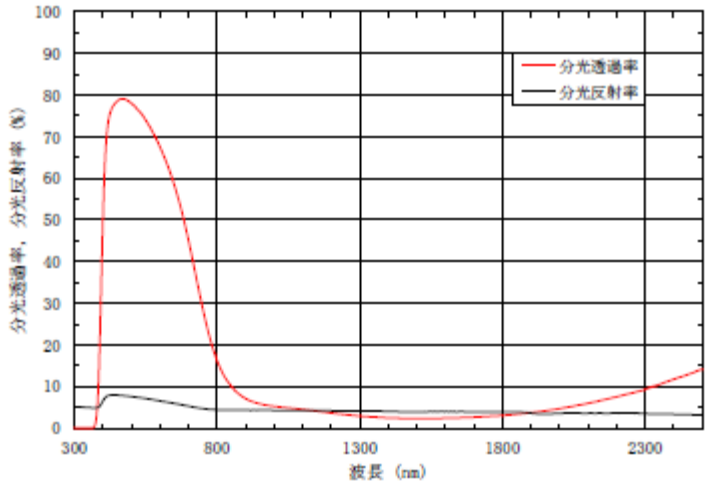


図 1　分光透過率及び分光反射率測定結果（商品名：省エネガラスコート H-SC）

■Durability

『IRUV CUT COAT test report-002』『IRUV CUT COAT test report-003』

KOKANKYO Engineering Co., Ltd. in April 2006

"Weather resistant coating agent test report"

Tested by a xenon lamp weather over (equivalent to approximately 10 years) 2580 hours

Test Result	The change is not accepted by a color, a film.

March 2008 DAINICHISEIKA Color & Chemicals Mfg. Co., Ltd.

Super UV irradiation testing and pencil hardness test

Yellowing, cloudiness, and evaluation

	Blank	100 hour	200 hour
Sample①	○	○	○
Sample②	○	○	○

■Adhesion

『IRUV CUT COAT test report-002』

KOKANKYO Engineering Co., Ltd. in April 2006

"Weather resistant coating agent test report"

Item	Method	Result	Standard
Boiling water resistance	1hour boiling water immersion	○	
Gasoline resistance	Gasoline rubbing 200	○	
Solvent resistance	Xylene rubbing 200	○	
	0.1 sodium hydroxide	○	
Chemical resistance	5% sodium hydroxide	×	
	10% nitric acid	○	
	10% sulfuric acid	○	
Adhesion	Cross-cut adhesion test	100/100	JIS K5400

Technical Data

■Safety

・Volatile Organic Compounds (VOC)

『IRUV CUT COAT test report-004』

Japan Food Research Laboratories Co., Ltd. in August 2006

"Formaldehyde test"

Analysis of test items	Test result	Detection limit	※Note 1	Method
Formaldehyde emission	0.12mg/L			Absorption spectrophotometry

※ Note 1. JIS K5601-4-1: 2003

・Combustion test

『IRUV CUT COAT test report-005』

Japan Railway Rolling Stock & Machinery Association in October 2004

Test number 16-526K

During combustion of alcohol		After combustion of alcohol	
Ignition	No	After flame	—
Wear flame	No	Residual dust	—
Smoke	No	Carbonization	60mm discoloration
Force of flame	—	Deformation	No
Remarks			
Assessment	Non-combustible		

Tested with No.151-83 Ordinance of the "Ministry of Land, Infrastructure, Transport and Tourism"