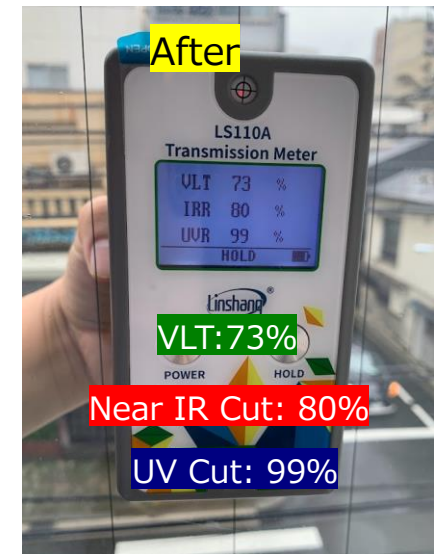
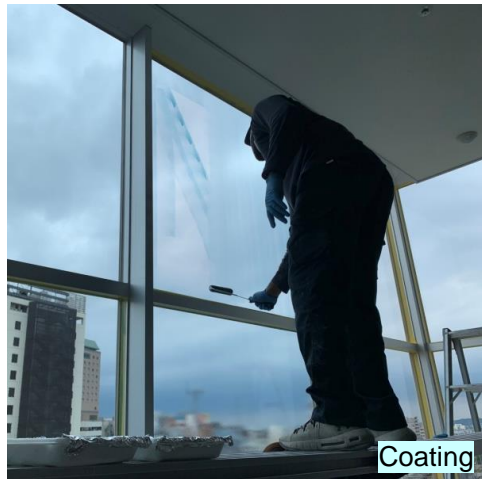


World No.1 Sales Record in Thermal insulated Nano Coating



Window glass coating for heat-blocking, insulation, and UV protection.

What is IRUV CUT COAT H-SP?



No.1 market share in the window glass coating industry,

Sales to more than 30 countries overseas.
Over 1 million sqms of application results



Cost-effectiveness is very high for application cost of Heat cut counter-measurement of window glass.

- ① With a near-infrared cut rate exceeding 90%, it is the industry's most affordable at 10,000 yen per sqm in Japan.
- ② Window film lasts twice as long with a durability of 15 years.
- ③ Comes with a 10-year reinstallation guarantee, film not included.
- ④ Depreciation within 5 years, followed by a positive value for the remaining 10 years (theoretical value).
- ⑤ It is also possible to restore the original condition using a dedicated adhesive remover, making it ideal for tenants.
- ⑥ A track record of over 15 years.

From 2020 to 2024, we have a wide range of nationwide application achievements. This includes the ongoing application in 1,100 Daiso stores across the country and the ongoing application of 70 new stores for Drugstore.



In addition, we have a multitude of achievements in various sectors including government offices, schools, hospitals, hotels, golf courses, and more.



Solve the following problems with window glass heat shielding measures:



Hot in Summer

The summer sun is scorching, and the air conditioning isn't effective



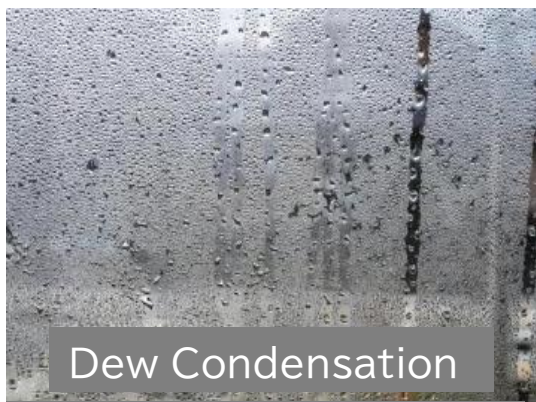
Cold in winter

"In winter, the area near the windows is chilly, and the indoors feel cold. The heating takes a while to kick in."



Strong UV rays

"The UV rays are causing severe deterioration of the floors and carpets. Also, there's noticeable UV degradation of the displayed merchandise."



Dew Condensation

"The condensation on the window glass is severe, constantly causing water to drip and corrode the floor."



Electricity bill

"The air conditioning costs have increased due to the soaring electricity bills."



Installation Cost

Replacing window glass is expensive at 40,000 to 50,000 yen per square meter.

Heat shielding/insulation for windows Energy saving products & cost comparison

- | | | | |
|--|---|--|--|
| (1)Low-E
Double glazing glass
¥45,000/m ² ~ | (2)Attached inner sash
Low-E
¥40,000/m ² ~ | (3)High performance film
¥18,000/m ² ~ | (4)Other coating
¥15,000/m ² ~
¥22,000/m ² |
|--|---|--|--|



Amortization plan within 5 years (for corporations)



Highly transparent and highly heat shielding type

IRUV Cut CoatH-SP **1m²12,000JPY**
In Japan (10m² or more)

“IRUV Cut Coat H-SP” is a heat-blocking and insulation coating agent

“IRUV Cut Coat H-SP” is a nano-coating agent that is applied to existing building windows using a roller



Application Cost
10,000yen per sqm
(More than 10sqms)

- Heat-blocking effect: Increases near-infrared cut rate by approximately 80% or more.
 - ➔ Near-infrared cut of 90% or more is achieved, as shown in the sketch only.
 - ➔ Reduces direct solar heat during summer by approximately 8°C to 15°C.

- Improved to block 99% of ultraviolet rays.
 - ➔ Prevent fading of merchandise, tatami mats, and flooring.
 - ➔ Acts as a deterrent against flying insects with compound eyes.

- Over 50% reduction in condensation.
 - ➔ Delays the occurrence of condensation and minimizes water dripping.

- 15-year weather resistance with a 10-year reinstallation guarantee.
 - ➔ Offers durability that is twice as long as 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>

The performance of IRUV Cut Coat Hyper-SP

Energy Saving

Reduces air-conditioning load by heat insulation effects

Heat Insulation

For Air-Conditioning in Summer

Heat escape prevention

For Heater In Winter

UV Cut

Harmful UV rays 99% cut or more

Condensation

50% or more of suppression

Durability

10years Or more

Heat insulation by IR Cut in Summer

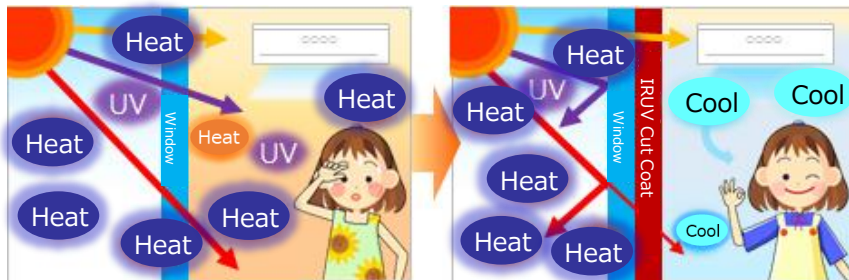
Heat cut about 10~20°C through window glass

Shielding near-infrared rays of heat that feel uncomfortable
Reduces indoor temperature rise and improves air conditioning efficiency

Winter of insulation far-infrared cut

Don't let the heating heat escape from the window
Light of warmth that feels comfortable "far infrared"
Suppresses the flow of heating heat energy

In Summer



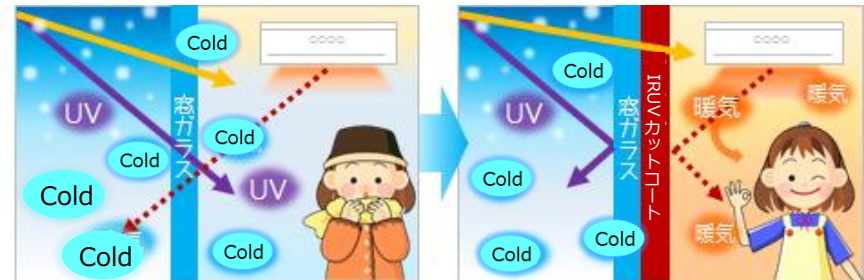
Solar heat enters, cooling is not effective, and the room is hot

Reducing solar heat and lowers room temperature by 2-3 °C
The cooling effect is improved.

—————▶ Visible Light

—————▶ UV rays

In Winter



Heating heat escapes from the window
The room is cold with poor heating

Reduces heat escape from heating heat
Heating effect is improved

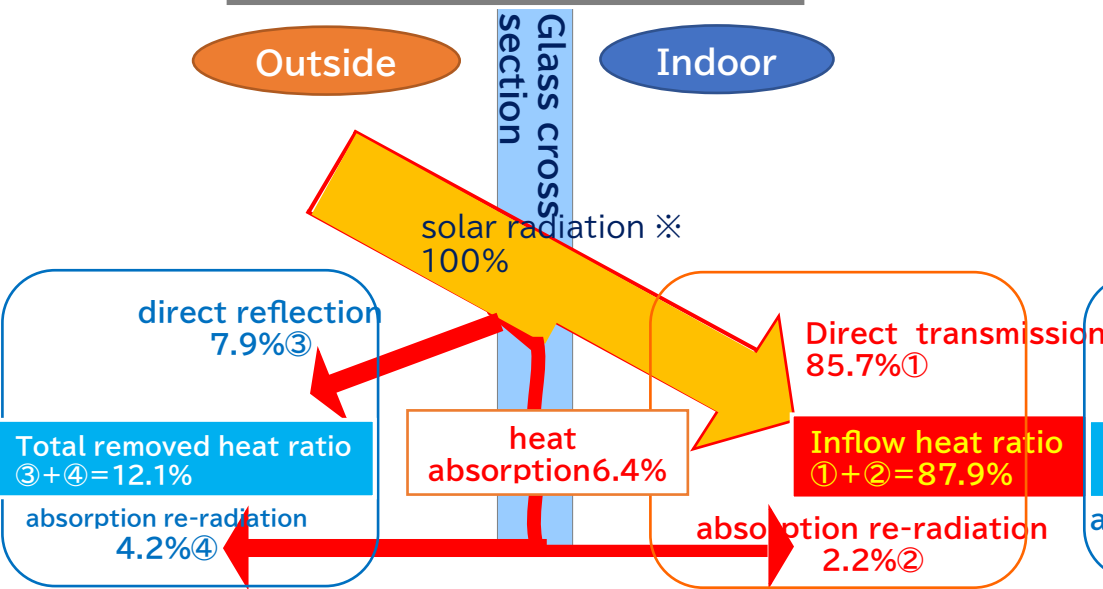
—————▶ Near Infrared rays

.....▶ Far Infrared Rays

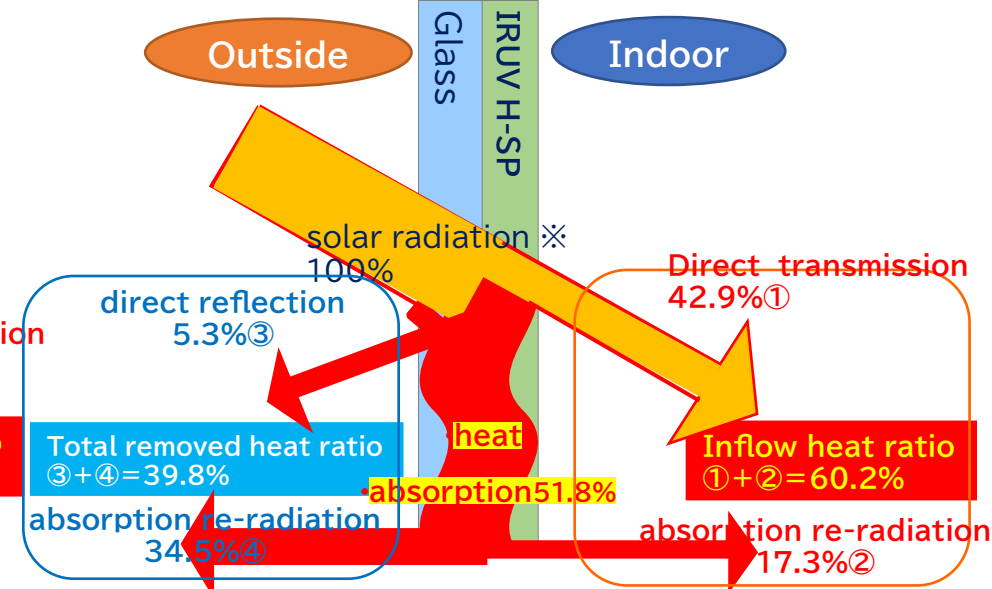
Mechanism of infrared heat transfer and thermal insulation

Summer

Single float glass



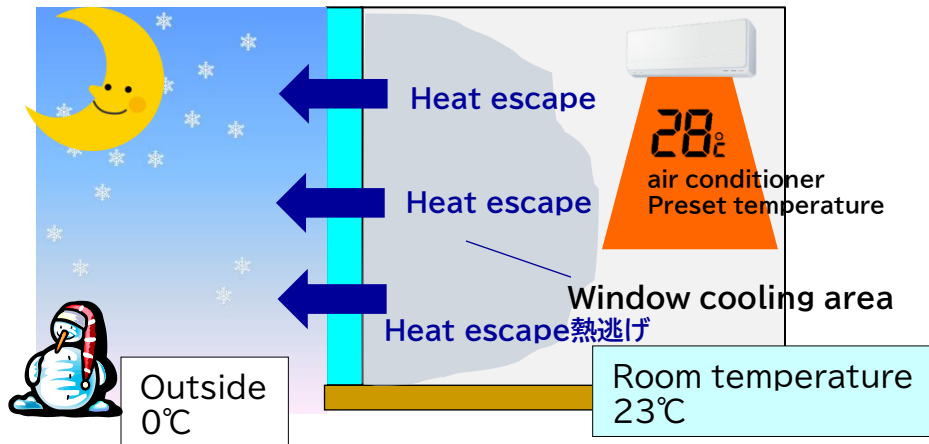
Coated glass



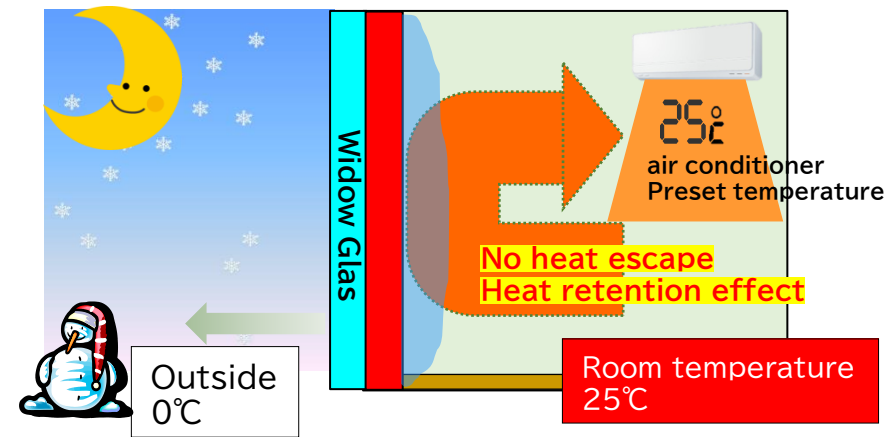
※ Solar radiation = the entire wavelength range of ultraviolet rays, visible light, and infrared rays (0 nm to 2500 nm), not just infrared rays.

Winter

Single float glass

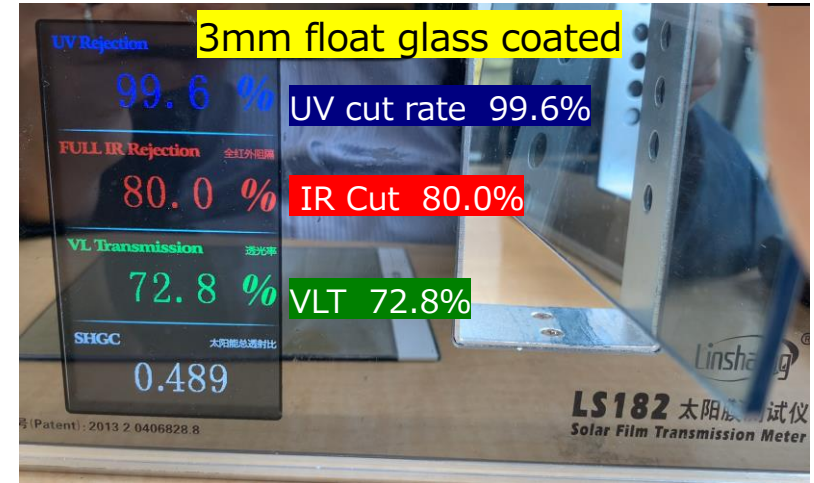
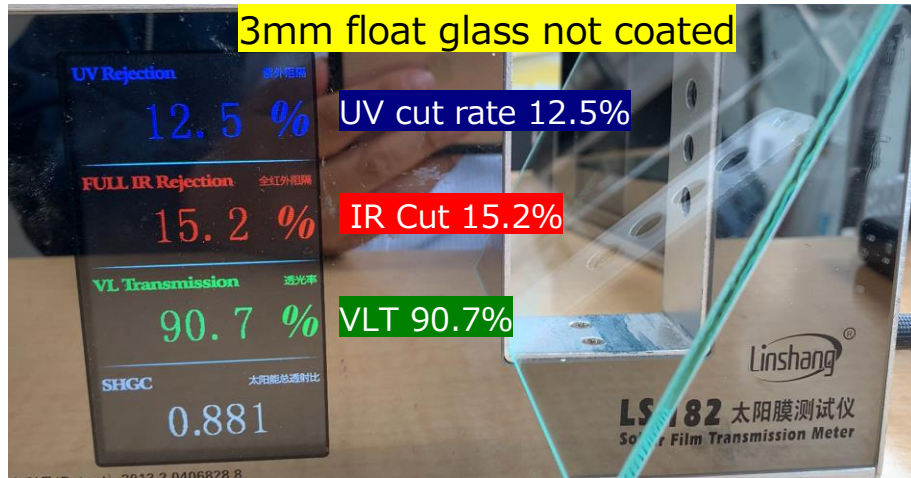


Coated Glass

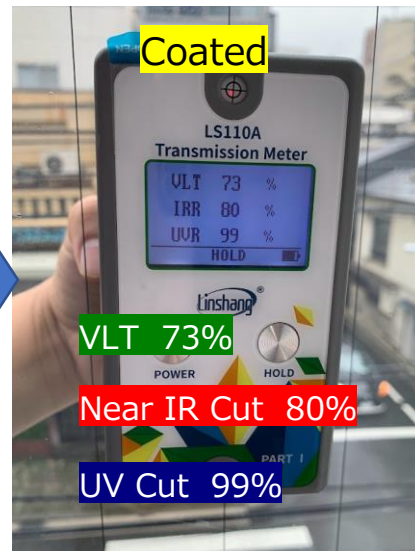
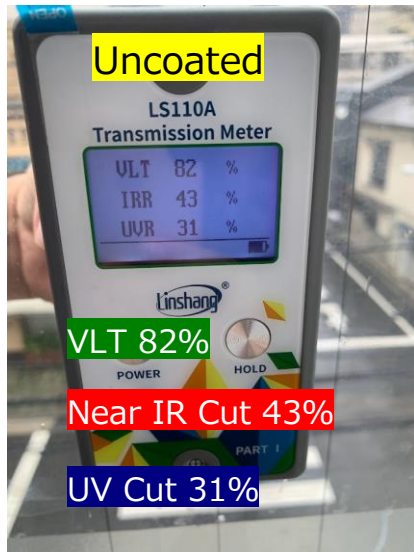


Optical property measurements

Performance verification using 3mm float glass (150mm x 150mm size) sample glass



Verification of the performance of the glass surface actually applied to 6mm float glass (verification using two types of measuring equipment)



an example of an energy-saving simulation:

Restaurant area at Golf Course

神奈川カントリークラブ		2021年5月～2022年4月分													
窓ガラスの遮熱・断熱・UVカットコーティング 省エネ率10%の場合の償却シミュレーション												2021年5月～2022年4月分のデータに基づく			
	5月	6月	7月	8月	9月	10月	11月	12月	1月	2月	3月	4月			
ガス料金	227,707円	214,289円	391,592円	340,398円	196,019円	177,150円	173,232円	234,351円	256,859円	186,903円	170,200円	160,506円			
削減金額	22,771円	21,429円	39,159円	34,040円	19,602円	17,715円	17,323円	23,435円	25,686円	18,690円	17,020円	16,051円			
In the case of a 10% energy savings rate				導入費用				年間削減金額				Amortization period			
				1,988,000円				272,921円				7.3years			
窓ガラスの遮熱・断熱・UVカットコーティング 省エネ率15%の場合の償却シミュレーション												2021年5月～2022年4月分のデータに基づく			
	5月	6月	7月	8月	9月	10月	11月	12月	1月	2月	3月	4月			
ガス料金	227,707円	214,289円	391,592円	340,398円	196,019円	177,150円	173,232円	234,351円	256,859円	186,903円	170,200円	160,506円			
削減金額	34,156円	32,143円	58,739円	51,060円	29,403円	26,573円	25,985円	35,153円	38,529円	28,035円	25,530円	24,076円			
In the case of a 15% energy savings rate				導入費用				年間削減金額				Amortization period			
				1,988,000円				409,381円				4.9years			
窓ガラスの遮熱・断熱・UVカットコーティング 省エネ率20%の場合の償却シミュレーション												2021年5月～2022年4月分のデータに基づく			
	5月	6月	7月	8月	9月	10月	11月	12月	1月	2月	3月	4月			
ガス料金	227,707円	214,289円	391,592円	340,398円	196,019円	177,150円	173,232円	234,351円	256,859円	186,903円	170,200円	160,506円			
削減金額	45,541円	42,858円	78,318円	68,080円	39,204円	35,430円	34,646円	46,870円	51,372円	37,381円	34,040円	32,101円			
In the case of a 20% energy savings rate				導入費用				年間削減金額				Amortization period			
				1,988,000円				545,841円				3.6 years			

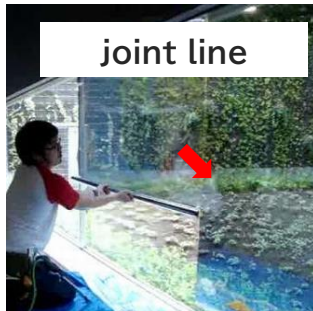
Differences from window film, which is the easiest to compare



[Twice as durable as film]

-Window Film-
Generally 5~7 years性
VS

-IRUV Cut Coat-
15years



[There are no seams like in Tinted film.]

-Window film-
Because the standard dimensions are fixed, the seams of the film remain on large windows.
VS

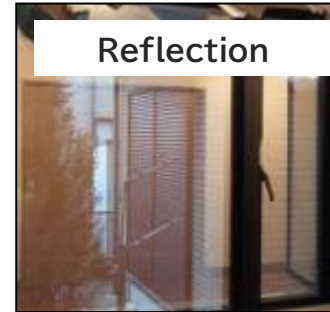
-IRUV Cut Coat -
Even with large pieces of glass, there are no seams due to roller application



[Sticking dust /smell.]

-Window film-
Dust is hard to see. Almost no odor
VS

-IRUV Cut Coat-
Dust and hair that adhere during curing become integrated, which can be a concern at close range. There is a smell of solvent only when painting.



[No reflections, so night view is OK]

-Window film-
High reflectance makes it difficult to see at night.
Not suitable for buildings that emphasize aesthetics and scenery.
VS

-IRUV Cut Coat-
Since the reflectance does not change, Maintaining beauty and scenery



[Can be applied to patterned glass and uneven glass]

-Window film- Hard to install
VS

-IRUV Cut Coat-
Can be applied



[No function of shatter prevention]

-Window film-
It has shatter prevention function.
VS

-IRUV Cut Coat-
Due to the thin film thickness, there is no anti-scattering function.

What is the difference from other coatings ?

Comparison with other coatings

(1) Workability

【Other Coatings】



Sponge bar



Spray

- ☆Difficult application
- ☆Cannot be fixed.
- ☆Hard to peel off
- ☆Hard to coat for big size (Sponge bar)
- ☆Easy to occur dripping and unevenness
- ☆Unable to adjust film thickness
- ☆It takes time to master Application technique

【IRUV Cut Coat H-SP】



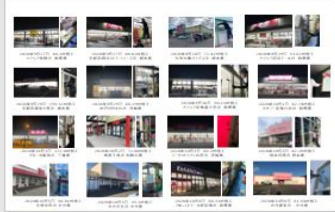
Roller application

- ☆Easy application
- ☆can be fixed
- ☆Easy to peel off
- ☆can apply for big size
- ☆No dripping, unevenness
- ☆Uniform film thickness
- ☆Easy to master application technique

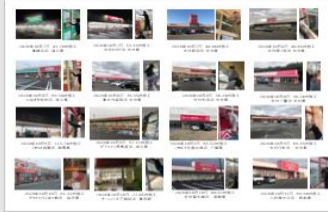
Example ① 100 yen shop Daiso store whole in Japan



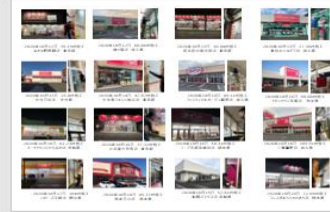
1



2



3



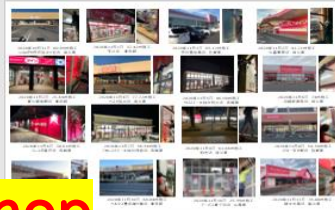
4



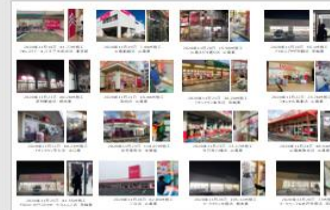
5



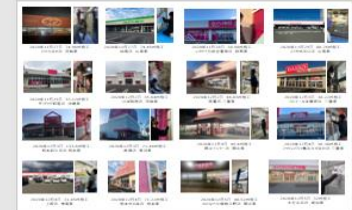
6



8



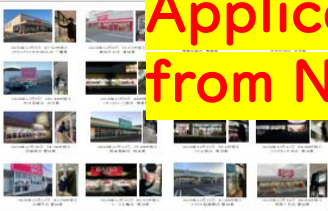
9



10

Daiso Shop

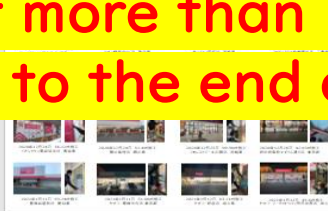
Application results of more than 1,000 stores nationwide from November 2019 to the end of February 2022



11



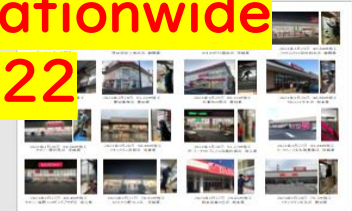
12



13



14



15

Window glass of about 40sqm to 100sqm per store



16



17



18



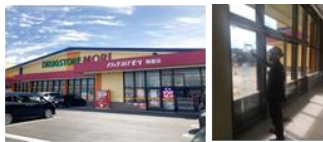
19



20



Example ② Drug Store Chain shop in Japan



2020年4月24日 福岡南里店 106.01㎡



2020年4月26日 福岡久留米高良内店121.35㎡



2020年5月21日 福岡須玖北店174.72㎡



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3月6日 福岡水巻店107.86㎡



2021年3月15日 宮城青理店 111.2㎡



2021年4月16日 福岡土井下町店120.21㎡



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㎡

**New drug store shops
70 stores mainly in the Kyushu area.
From April 2020 to September 2024**



2021年7月31日 徳島阿波市場店 113.84㎡



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2月19日 山口柳井店 86.92㎡

Approximately 100sqm to 120sqm of window glass per store



2022年2月23日 熊本田迎店 105.93㎡



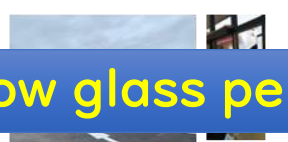
2022年2月24日 愛媛東大洲店 121.86㎡



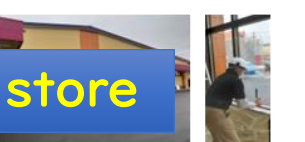
2022年2月24日 諫早高来店 115.57㎡



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4月29日 宮城・名取愛島店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9月5日 福岡浦志店 31.86㎡

Application Record in Japan(1)

Sample application records



【Amazon Odawara warehouse】



【HOTEL in Hokkaidou】



【KEWPIE Mayonnaise headquarters】



【Kawasaki Heavy Industries Technical Development Division】



【Tokyu hospital】



【Kagoshima District Legal Affairs Bureau Kirishima Branch】



Application Record in Japan (2)

Sample application records



【 Ministry of Internal Affairs and Communications 】



【 Hotel Japan Shimoda 】



【 Sapporo Beer Chiba Factory 】



【 Tokyo Gakuran Niigata High School 】



【 Edogawa City Hall 】



【 Japan Atomic Energy Agency 】



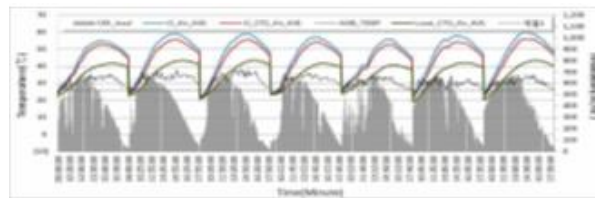
Energy-saving simulated case in Korea in Summer

Data collection / test booth

Korean Construction Company measured the temperature at 4 rooms under the same conditions. As a result, the room temperature was at **most 3.6 °C lower than the non-coated room**. Air conditioning cost reduction rate of the year was 14% (28%). (※As a condition, the temperature setting of air conditioning change 1 °C effects 5% of the energy-saving .Calculated at 10% in Japan) Calculate the application cost by electricity charges and labor costs in South Korea, it has proved to be recovered in 4.9 years. South Korea is the cheapest electricity rates in the developed countries, it will be recovered within five years even there is winter time.



- The indoor temperature comparison by the changes in the outside air temperature-



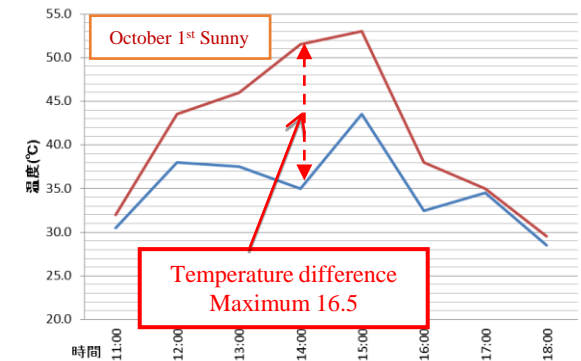
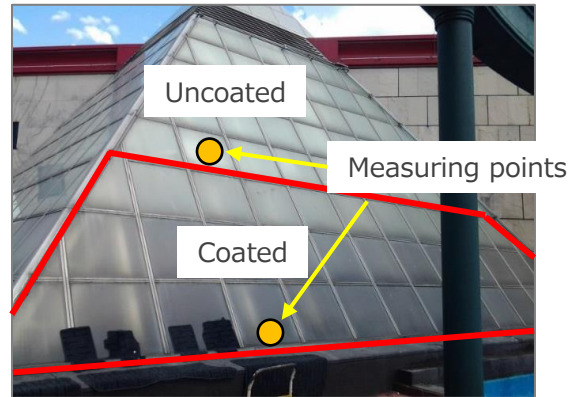
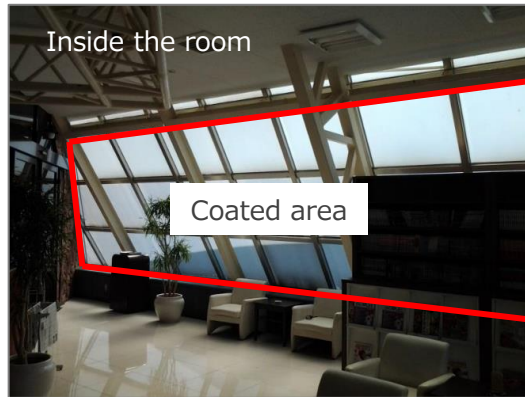
区別	外気温度範囲	外気温度 (°C)	室内温度 (°C)	室内温度変動幅 (°C)	室内平均温度 (°C)	冷房負荷率 (kW/㎡)	冷房負荷率 (kW/㎡)	24時間冷房負荷率 (kWh/㎡)
1	26°C~28°C	26.0	26.7	0.7	26.7	8.5	0.4	20.7
2	26°C~30°C	26.0	28.1	2.1	28.1	10.5	5.5	29.9
3	26°C~30°C	26.0	28.1	2.1	28.1	10.5	5.7	34.8
4	26°C~	26.0	26.3	0.3	26.3	17.5	1.0	7.5
		54000h	100	111.1			15.2**	95.9

* 冷房 1℃温度範囲に1h/㎡を4.4kWhと仮定して計算した値。
 ** 冷房1℃温度範囲に1h/㎡を4.4kWhと仮定して計算した値。

The examples of Heat insulating performance in Summer

Temperature measurement at application site/ Amusement facility/Smoking room in Oita-ken Japan

Summer is hot and no one wants to enter the smoking room. Even if the air conditioner is set to 19 ° C every year, it becomes hot air. Although a film was pasted, it was installed 10 years before and no effect. After application of IRUV Cut Coat , temperature measurement was performed.



[Temperature measurement period]
11:00 on October 1, 2013 to 17:00 on October 22, 2013

~Customer comments after application~

Until now, even if the air conditioner setting was 19 ° C, it was too hot to enter the room. However, after application, even if the air conditioner setting was raised to 24 ° C, it became cool, and I felt a strong heat shielding effect.

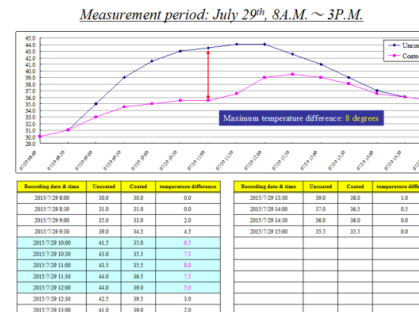
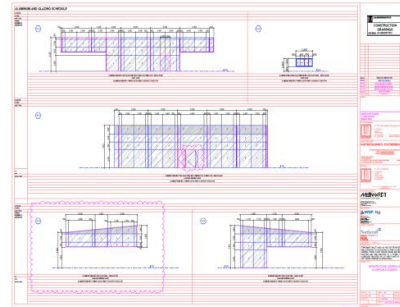
- * The air conditioning load is reduced by 5 ° C (energy saving about 30-50%) because it is comfortable even at the air conditioning set temperature of 19 ° C ➔ 24 ° C.

Energy Saving performance in Summer

Golf Course / Clubhouse in Singapore

Active in hot Southeast Asia

Result of the temperature measurement, the temperature difference of the direct heat at the window was 8 °C (maximum) in comparison with the uncoated glass (Low-E glass) Reduction rate of the air conditioning costs was 20 percent, so recovery of the initial investment simulated in 2.03 years. Because there was high electricity prices and low applicator cost. For 10 years coating guarantees, we can expect significant cost savings of 20% to 30% more than eight years is. ⇒ 2years payback period and more than eight years profit



Summary

Measurement Result

- After the application, we measured the temperature in south and east side. However, the graph used only the data of the west (A, B). Because the site of south (C, D) was located in the shadow of the structure, roof and trees (Right Photo). This circumstance is difficult to show the temperature difference.
- On the east side, the temperature difference occurs during the morning 8:30 to 12:00 because of direct sunlight. The peak of the temperature difference is at 11:00. Coated side has the maximum 8 degrees of temperature difference compared to uncoated side. Not only the loss of the window side can be greatly reduced, but also you can expect about 2 degrees air-conditioning load reduction at night.
- On August 12, the temperature difference did not come out because of the all-day rain. We could not do it difficult to show the temperature difference on the day or time of no direct sunlight.

Simulation from the measurement result

- For example: Monthly electric fee S\$1967.40 × 12months = Yearly electric fee S\$23608.8
- In this case, when the room temperature after coating falls one degree, the air-conditioning load rate will be 10% reduction. So the room temperature fall two degrees means 20% reduction. So the rate of saving cost will be 20% electric fee S\$23608.8 × Air-conditioning load reduction rate 20% = Annual reduction electricity charges S\$4721.76
- Apply the reduction from the bottom to the second glass.
- Area 149.80sqm × Application Price S\$666 = TOTAL S\$9992
- Total S\$9992 + Annual reduction electricity charges S\$4721.76 = 2.03
- So we expect that application price can be recovered in two years.
- Durability of the coating is 10 years. After application cost recovered, it could estimate the profit as below.
- Annual reduction electricity charges S\$4721.76 × 8 year = S\$37774.08 in eight years.
- It is a not guaranteed value, the value is from the simulation.

*We assume that further air-conditioning load can be reduced when the south and west side apply not only the east.

Energy Saving Performance in Winter

Heating heat energy

Heat escape prevention test in Canada

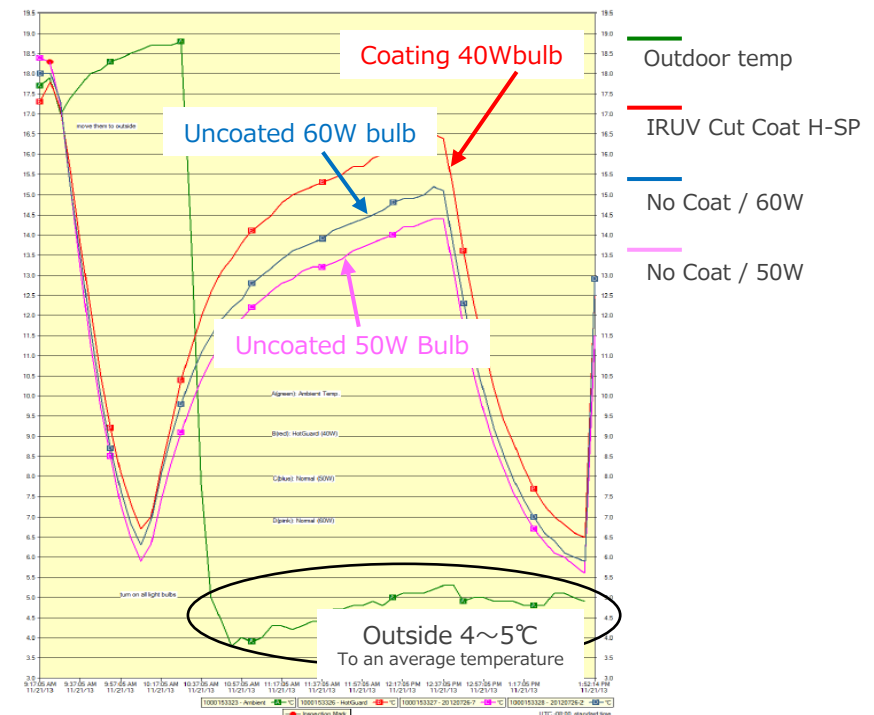
Glass box with a heat source (light bulb) and thermometer. As a result of measuring the transition of the temperature inside the BOX, Uncoated box and coated box installed outdoors, The temperature inside the coated BOX (40W) is the highest and suppresses heat escape compared to the uncoated BOX (50W, 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 21th ,2013
- Test location: Vancouver, Canada
- Outside temperature: 4 °C ~ 5 °C, 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%

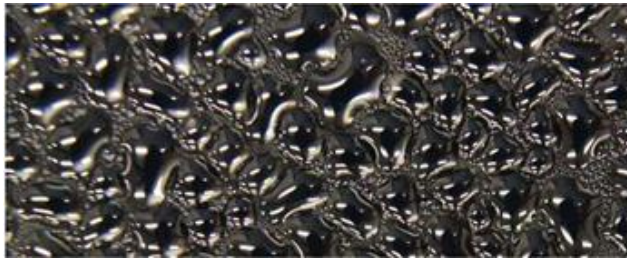
Condensation Suppression in Winter

50% suppression of Dew Condensation in Winter

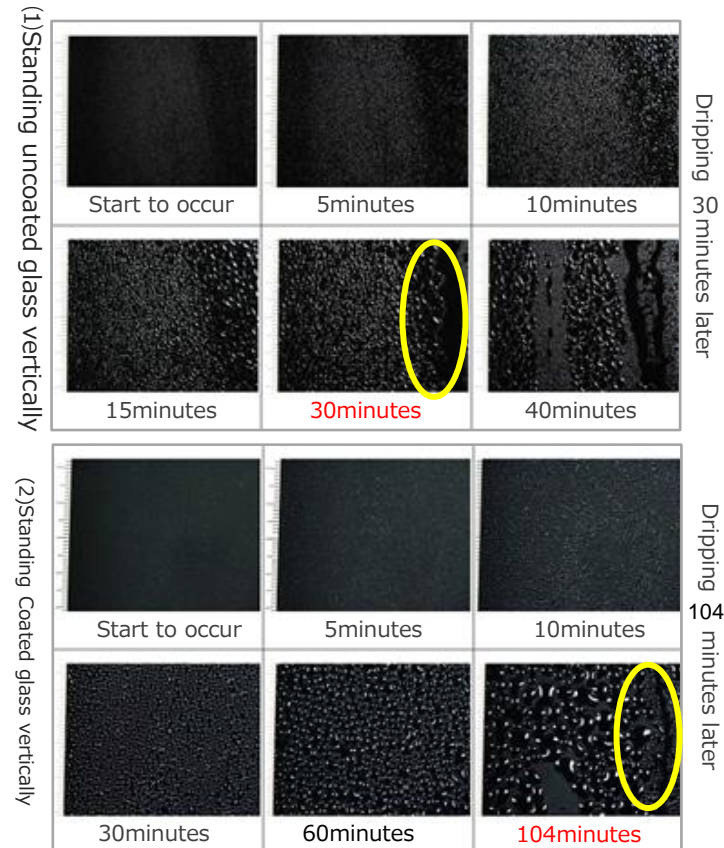
Condensation means that in the winter, moisture-containing air is cooled on the window glass and becomes water droplets. When coated, the glass surface absorbs heat, warming the glass surface and slowing down condensation. In addition, since the water retention of the coating surface itself is high, 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



Introduction by publicity in Japan

TV, newspaper, magazine, etc.

No. 1 in the thermal barrier glass coating industry (70% market share).
It was also introduced on TV and industry newspapers.

Electricity saving to survive the heat in TV



NHK Devises a warm winter



An article about our sketch's IRUV Cut Coat was published in a Japanese magazine on March, 2024

Recommendation for the person like these

「 10% energy saving by the difference
of temperature setting of 1 °C 」



considering energy-
saving measures

- Requirement for power-saving heating and cooling.
- In the summer, to save the air Conditioning fee.
- In the winter, to keep warm Without the air conditioning.



Afternoon sun is hot

- I can not stand near a window is hot.
- air conditioning does not work in the afternoon sun.
- Can not sleep in the summer.
- Can not concentrate on work because of the heat.
- Care about heat stroke ● Cooling bill is high.



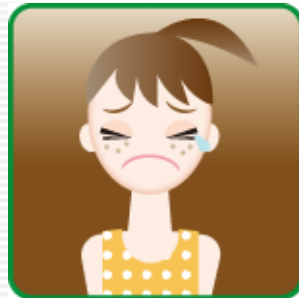
For keeping the heat
from inside the room.

- Window area is cold.
- Effectiveness of heating is low.
- Heating bill is high.
- Can not sleep because of cold.
- Avoid to get the cold.



The terrible condensation of
window

- A terrible condensation of the window.
- The trouble with water dew.
- I have to wipe the window every morning.
- Unsanitary mold grows
- Child asthma.



Care about freckles and spots
because of UV.

- Furniture and sofa have faded.
- summer, Insects gathered to window.
- Avoid to get the dark spots by UV.



「 Price is **Less than half** of
other insulated glass product 」

Save the money, a good product
Been looking for!

- Reduce the heat and strong sun light from the window.
- Demand for the highest performance.

IRUV Cut Coat H-SP

Marketing information in Japan



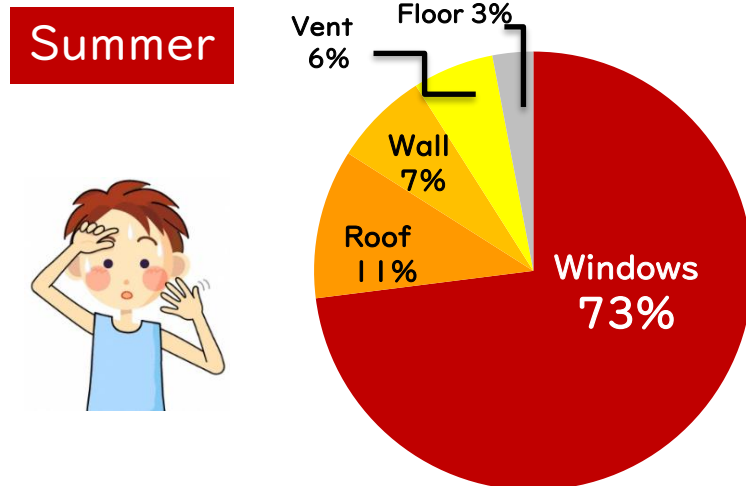
Solar heat / Heating heat movement

The window glass with the most heat transfer

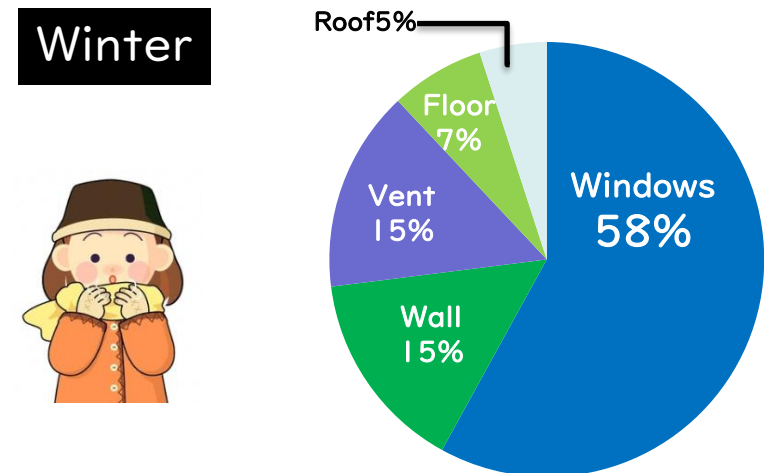
It is not an exaggeration to say that summer heat and coldness in winter depend on the window. The influence of exterior walls and roofs that are in contact with the outside air is surprisingly small, and most of the heat comes in and out of the windows.

73% of the solar heat comes into the room from the window in the summer, and 58% of the heating heat escapes from the window in the winter, assuming the whole building as 100%. In other words, in building of energy saving measures, heat shielding against window glass is the most effective.

● The rate at which heat enters during cooling



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



Why window glass?

The biggest point is to reduce the work of air conditioning

It is well-known that the proportion of air-conditioning equipment occupied in power consumption is large.

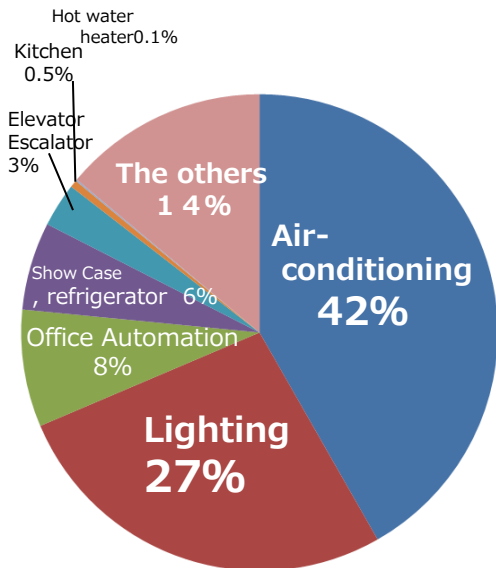
How to efficiently use air conditioning equipment that accounts for this large proportion will be the most important point of energy conservation.

So, where and how can we improve it? For that, we must pay attention to windows where heat come in and out the most.

"Air conditioning cost reduction measures" from 10 am to 4pm in the daytime is top priority

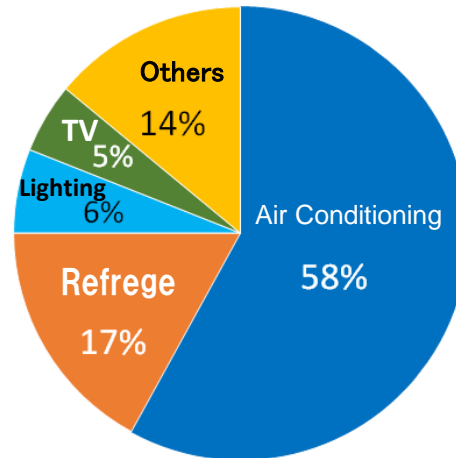
In the case of office building

Demand Structure of 2PM at office building



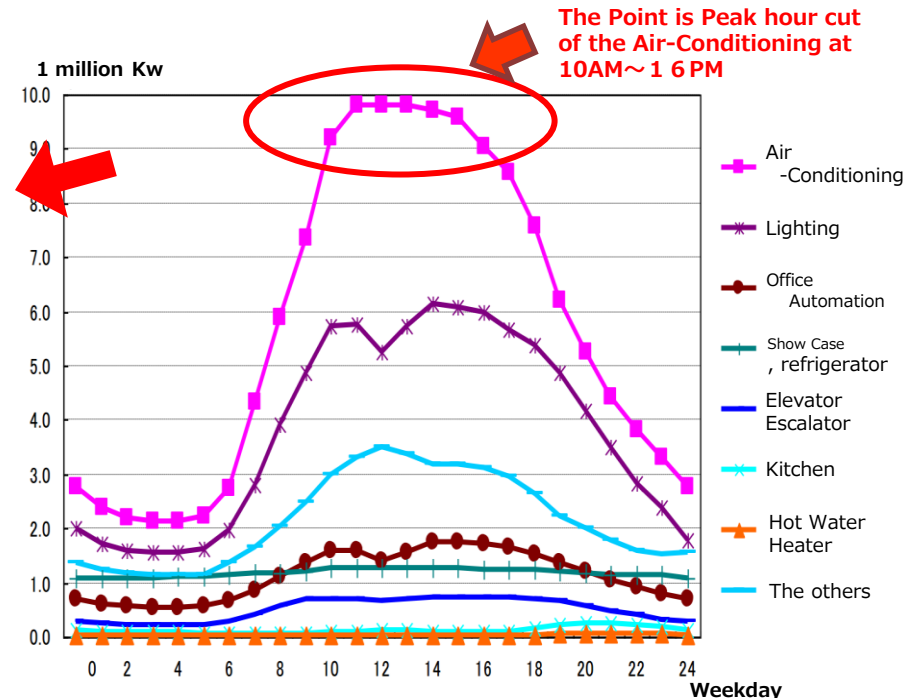
In the case of house

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

Cost and CO₂ reduction

Method of low carbon society

From the entry into force of the Kyoto Protocol to the present, various energy-saving technologies have been developed, commercialized and put into practical use in the construction and construction fields.

Among them, it has been clarified that window glass measures are the most advantageous in terms of the relationship between the introduction cost and the CO₂ reduction effect.

The Comparison report for the amount of CO₂ reduction to be the energy-saving measures of the building in case of budget of ¥100 millions.

Method	Cost ¥100billion	The CO ₂ Reduction effect [t - CO ₂]	The CO ₂ reduction effect per ¥100million [t-CO ₂ /100million]
High Thermal material	5920	-22771	-3.85
High Reflective Paint	3222	7007	2.17
Heat Insulation Film	2477	117270	47.35
Gardening Rooftop	7900	3756	0.48
Earth thermal heat pump	10764	46208	4.29
Ground tree planting	6100	10124	1.66
Water-retentive pavement	5424	7791	1.44

平成 21 年度地方公共団体実行計画（区域施策）
策定マニュアルに関する都市・街区単位
における低炭素化手法の検討業務

(Report)
報告書

March. 2010

平成 22 年 3 月

MRI 株式会社 三菱総合研究所

(Mitsubishi Research Institute, Inc.)



Glass Film

VS



Glass Coating