

SEAG

Beyond GREEN Solutions
Solar, Safety and All-seasons Saving



SEAG Window Film Reduces Carbon Footprint

SEAG Film for your home or office is one of the most cost effective ways to "go GREEN".

You can make a difference simply by reducing your air conditioning usage. A 1°C change in the set point of the air-conditioning unit can result in an energy consumption change of more than 3% (source: EMSD). SEAG Film helps you do that by rejecting heat and keeping interior temperatures more controllable and stable. By running your air conditioning less, you consume less energy, reduce your carbon footprint and save money on your electricity bills!



91% Vision light transmission at 91%

Highest optical clarity on the market
Provide uncompromised views day and night.



Eco-friendly

100% organic material and combustible
No disruption of mobile phone signal



Thermal Insulation

Reduce 20 to 40% of solar heat gain/loss
Change room temperature by 2-6°C



Condensation Control

Inhibit rust and mold growth



UV Block

Block 99% of harmful UV Rays



Insect Repellent

Stop flying insects



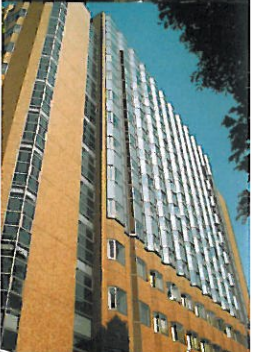
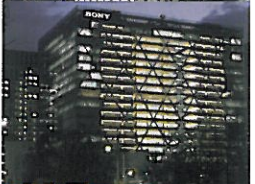
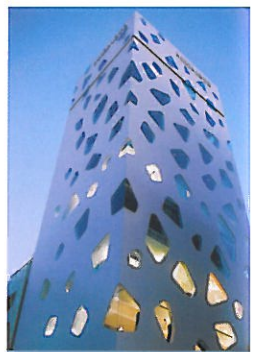
Shatter Resistant

Prevent injury by flying glass



Crime Protection

Protect against force entry



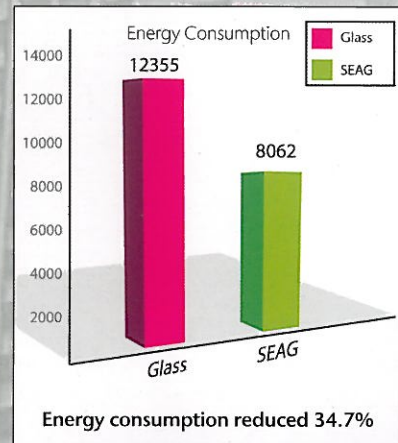
SEAG – When only the best can do



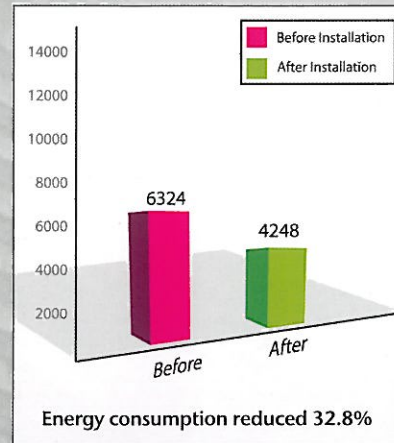
Energy-saving & improve comfort

Provide a cooler interior in summer
Help retain heat in winter

Cooling system: 13-14 August



Heating system: 3-4 March



Data collected at ANA Hotel Tokyo in 2002
No. of guest room: 903
Total installed area: 2871m²



Stop flying insects

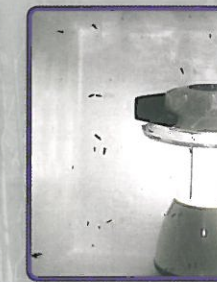
Block as much as 90% of wavelengths of light spectrum, disrupt and discourage insects' foraging patterns



With SEAG



Window Glass



With other Film

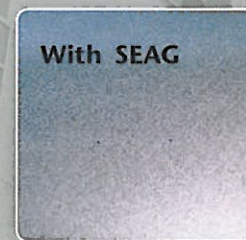


With Other Color Film



Reduce condensation

Help to reduce condensation by keeping heat inside and limiting cold surfaces during the colder seasons



With SEAG



Without SEAG



Maintain safety and security

JIS-A5759 A&B
Anti-Shatter Performance Test D-1



JIS-A5759A Test



JIS-A5759B Test

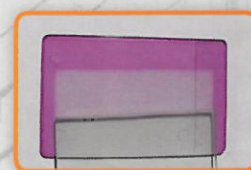


Repel 99% of harmful UV rays

Prevent fading and sun damage of interior furnishings



1. Place SEAG film on the tester



2. Remove SEAG film



3. Colour completely changed when exposed to UV light

With SEAG Without SEAG



Newspaper exposed to sunlight for 1 day in summer

With SEAG Without SEAG



Tatami mat exposed to sunlight for 10 days in winter



Reinforce glass

Reduce chance of injury and damage by flying glass and protect against forced entry



1. Apply SEAG on a 6mm glass



2. Hit the glass with a heavy hammer



3. The glass breaks but the opening is not penetrated. SEAG holds the shattered glass together.



Applications

Commercial

The application of SEAG Film can improve climate control and lower air-conditioning costs by reducing solar heat gain in summer seasons and retaining heat during the winter months. Building tenants and staff are free to open blinds, turn off lights and take advantage of natural light. The films have additional benefit of increased safety. They help you reduce liability from broken glass related injuries and damages.

Residential

The clear, colourless SEAG Film preserves the look and feel of your home while helping you save significantly on electricity bills, maintain a safer and more comfortable home, and reduce interior fading. The non-metal films prevent it from appearing dark and reflective both day and night. SEAG Film is durable, long-lasting, and the only maintenance required is normal window cleaning.

Automotive

SEAG Film is virtually transparent and can be applied to both windshield and side windows. SEAG allows up to 91% Visible Light Transmission, while blocking out the sun's infrared heat and 99% of the UV rays. With SEAG Film, you can drive cooler and more comfortably with less reliance on air conditioning, which can improve fuel economy.



JR West Japan installed SEAG Film on bullet trains "Nozomi" and "Hikari"

SEAG Film Benefits

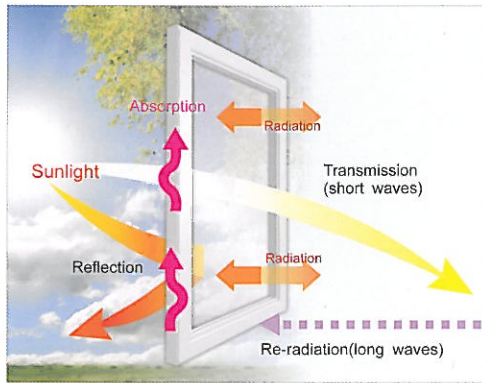
- Superior heat rejection. It helps to cut down the air-conditioning expense.
- SEAG Film helps protect you from premature skin aging and some potential skin cancers with up to 99% UV protection.
- Organic coated window films are fade and corrosion free.
- SEAG's patented technology gives the films highest clarity. Visible light transmissions up to 91% (industry leading optical clarity), the films are virtually invisible.
- SEAG Film contains no metal. The films do not interfere with today's wireless lifestyle which includes cell phones, WIFI, GPS and satellite signals.
- Ultra transparent non-reflective window films let the maximum light in and reduce the need for additional lighting.
- Unlike reflective films which have the disadvantages of internal reflection and mirror effect at night, SEAG Film eliminates the problem by delivering an uninterrupted, non-reflective outlook day and night.
- Organic combustible materials can be disposed by incineration.
- Shatterproof films hold shattered glass in place. It can practically reduce personal injuries and property damages from flying shards.
- SEAG Film comes with a factory-backed 5-year warranty.



Insulation Mechanism

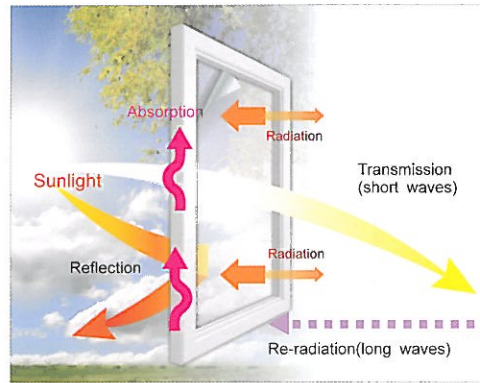
Summer when cooling system in use

Without SEAG



Emissivity 0.95 Emissivity 0.95

With SEAG



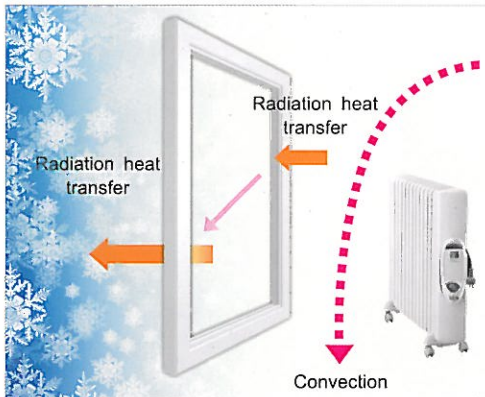
Emissivity 0.95 Emissivity 0.05

SEAG's low emissivity glass coating is able to change the emissivity of the glass. With a SEAG Film properly applied to the inside surface of windows, the glass absorbs less and emits less short-wave radiant energy into the room, while removes heat back toward the direction it came.

Meanwhile, the glass absorbs the long-wave radiant energy generated by re-radiation inside the room and removes heat back toward the direction it came.

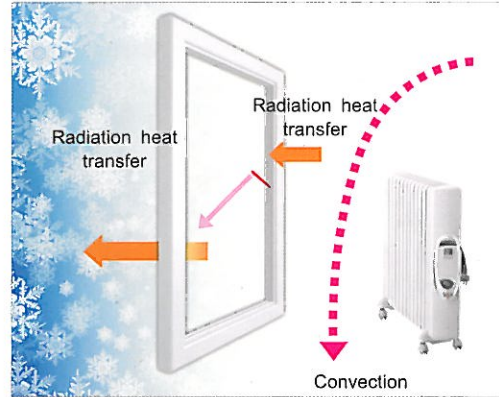
Winter when heating system in use

Without SEAG



Emissivity 0.95 Emissivity 0.95

With SEAG



Emissivity 0.95 Emissivity 0.05

SEAG Film acts as a blockage on the window inside surface against convective heat flow by lowering the shading coefficient.

Solar Radiant Heat Properties of SEAG F7710

Composition

SEAG 7710

a. Insulation coating	3μm
b. Clear polyester film	50μm
c. Adhesive layer	20μm
d. Release liner	20μm

Insulation : Acrylic (3um)
 Film : PET (50um)
 Adhesive : Acrylic (20um)

SEAG Film is made of a transparent micro-thin polyester composition

	SEAG Film on 3mm glass	3mm glass only
Visible Transmittance	89.2%	90.2%
Sunlight Transmission	81.5%	85.8%
Sunlight Absorption	9.2%	6.4%
Sunlight Reflection	9.3%	7.8%
Shading Coefficient	Approx. 0.5	1.0
Thermal Conductivity (kcal/m ² h°C)	Approx. 3.6	5.1