Architectural Window Films – Solar and Safety Protection:

The answers you have been waiting for



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What are Solar and Safety products?



Solar Control Window Films

The high performance Solar Window Films filter damaging solar radiation and reduces interior heat build up - providing multiple benefits to occupants such as enhanced comfort and reduced glare, fading of furniture and lower energy cost.

With a comprehensive range of finishes available, the level of privacy can be selected and the appearance of the building transformed.



Safety Window Films

The Safety Window Film range is designed to improve both safety and security, and offer a range of protection levels to glass breakages caused by accident, malicious intent or extreme weather conditions. Additional surface protection solutions are also available, with Anti-Graffiti properties.

Find a recommended product for a specific glazing systems using our Film to Glass (FTG) application charts available on our website. We provide you with full sales and technical support, to ensure the best possible application results.

FAQ (1/2)

Solar Control Window Films

Question	Answer
Can I apply any film to any glass?	No, not all films can be applied to each glass type. Glass infrastructure that is used in European regions is especially considered to be modern and progressive, but nonetheless solar window films can still improve the energy balance of a building immensely. Check our Film to Glass Application Chart.
Does a solar window film also provide privacy against unwanted views from the outside?	Yes, mirrored sun protection films offer privacy protection, but they always work in one direction. So during the day (when it's brighter outside) you can see from the inside out - but not from the outside in (the film provides a mirror effect and you can't see through it). At night, when light is switched on in the rooms, this effect is reversed and it is again possible to see into the rooms from outside. It is not possible to see through the film from a more brightly illuminated area. This effect is best with darker films.
Do the solar window films darken rooms too much?	Brighter-colored solar window films are sometimes barely visible on the window pane, with hardly any darkening effect. With darker solar window films, it should always be clear which is the more important aspect: heat protection, glare protection, UV protection or as much daylight as possible? In case of doubt, a lighter film should be used for very small windows, but for skylights we always recommend a highly reflective film.
Does a UV protection film prevent goods from bleaching out behind shop windows?	Our UV protection films offer UV protection that filters out more than 99% of harmful UV rays. This protection significantly delays fading with display window merchandise such as furniture or textiles. However, it cannot be prevented completely, since other factors besides UV light (e.g. artificial lighting or heat) also play a role in the fading of materials. For this reason, window displays should continue to be changed regularly.
Do all sun protection films offer glare protection?	Anti-glare films are solar window films that prevent parts of the visible solar radiation from passing through window panes, thus reduce the glaring incidence of light. Retrofitting window glass with an anti-glare film can provide significant relief, for example, at desktop workstations, so that undisturbed work is possible without disturbing light reflections. In order to achieve effective protection against glare from sunlight, a comparatively dark film type should be selected. Here we recommend a visible light transmission of no more than 20%, otherwise perceived brightness is not reduced sufficiently.
How can solar window films be cleaned?	All films (except for the XTRM SkyLite series) have a scratch-resistant surface, which makes them quite resistant to most common cleaning tools. Nevertheless, only soft objects should be used for cleaning.

FAQ (2/2)

Solar Control Window Films

Question	Answer
Are solar control films installed from the inside or from the outside?	Interior installation is possible but the risk of thermal breakage can be significantly higher. This is because modern window systems can heat up too much due to internal reflection. We recommend the application of a solar control film from the outside, not least because of the better compatibility of glass systems in Europe, but mainly because of the better solar control effect.
Can I also apply an interior solar window film to the exterior?	No, the window films are constructed to filter sunlight exposure in the best possible way. This means that if an interior film is used outdoors, the product construction is not suitable for exposure to sunlight from that side over a longer period of time. A film applied on the wrong side will not last long due to the structure of the film, and will be decomposed by the UV radiation.
What is the durability of solar window films?	The warranty varies depending on the type of film as well as whether it is an interior or exterior application. In addition, for horizontal applications, the more intense angles of incidence and increased daily exposure to sun rays mean that the warranty period is usually shorter. For full details of each product warranty, please consult the technical datasheets.
Can the sun protection films be removed without leaving any residue?	Yes, ours can be removed without leaving residue. If there are traces of adhesive residue, these can be removed and cleaned easily after disassembly.
Can I also apply a solar window film over part of the surface?	A solar window film should never be applied over part of the surface. The temperature difference in the pane (area with film/area without film) can cause thermal stresses/cracks in the glass.
Are there films specifically for plastic glazing?	There are films available for polycarbonate installations. These generally significantly extend the life of the plastic substrate because they can filter out harmful UV rays. Glass films are not suitable for plastic glazing because plastics usually outgas and leave small bubbles under the film. They also exhibit different expansion behavior compared with glass, which is not compatible with glass films.
Do window film edges need to be sealed (e.g. with silicone)?	When installing an exterior film, the edges should be sealed after drying due to the laminated metal components, in order to increase resistance to weathering and corrosion.
Are self-adhesive films reusable?	No, self-adhesive films are not reusable.

FAQ

Safety Window Films

Question	Answer
Can my glass still shatter even with Safety Window Films applied?	Yes, the glass can still shatter but the safety film will increase the resistance to impact and pressure. In case of breakage most of the splinters will not fly around but will stick to the safety film. This increases the protection against injuries caused by glass splitters effectively.
Safety films protect from UV radiation?	Yes, All our Safety and Anti Graffiti films protect against 99% of all UV radiation.
What safety certification do we have for our Safety Films?	All Solar and Safety Window Films were certified according to fire resistance norm EN 13501-1. In addition the safety window films are tested according to the most common impact and bomb blasting norms. The full overview can be found on the technical data sheet.
What represents an impact certification and why is it important?	Certifications and norms are developed to reproduce real life hazards in a defined and repeatable environment. This guarantees the performance of the product for the needed application. For the glass industry the main three norms are: Impact and glass breakage EN12600-1, resistance to manual attack EN 356 and Bomb blast test ISO 16931 and ASTM12-1642. The same norms apply for glasses applied with window films. We are testing our safety products in accordance with these standards.
Can the Anti Graffiti film be easily replaced after destruction?	Yes, our Anti Graffiti products use a removable adhesive for the ease of replacement once needed but adhering very well during its lifetime.
Do safety films need an edge sealing?	For burglary prevention and security requirements the safety film needs to be edge sealed to create a strong connection between the glass and window frame. Then a high level of protection will be achieved.
On which window side should safety films be applied?	We offer safety and security window films for interior and exterior applications. The films increase the impact resistance and offer a durable, scratch-resistant surface. Most of the films are designed for the inner glass pane to protect habitants from shatter injuries and increase impact resistance against burglaries. Outside applications help to increase the statics of larger glass panes as well as from incidents behind the glass surface. Furthermore the film will significantly reduce scratches and offer better protection against vandalism.

Glossary

Terms	Definitions
Emissivity (Room side)	A measurement of a surface's ability to absorb or reflect radiant energy. For windows using film, emissivity refers to the heat reflected back into the room. The lower the emissivity rating, the better the insulation characteristics of the glazing system with regard to heat loss.
Glare reduction	Glare usually is defined as being the difficulty of seeing in the presence of a bright light. A high glare reduction is usually achieved with a darker film.
IG Unit	A window construction which consists of two or more glass panes separated by a space.
K-Value Winter	This is the glare reduction percentage.
Luminous Efficacy	Indicates a window's relative performance in rejecting solar heat while transmitting daylight. The higher this number, the more effective the glazing is. LE above 1.0 determines if a product is a Spectral Selective product.
Shading Coefficient	Shading coefficient defines the sun control capability or efficiency of the glazing system.
Solar Heat Gain Coefficient	The lower the SHGC, the better the solar control properties of the film.
Total Solar Energy Reflected	The percentage of total solar energy (UV, visible and IR) reflected by a glazing system. The higher the number, the more energy is rejected.
Total Solar Energy Transmitted	The percentage of solar energy passing through a glazing system. The lower the number, the cooler the interior.
Total Solar Energy Absorbed	The percentage of total solar energy absorbed by a glazing system. Solar absorption is the portion of total solar energy that is neither reflected nor transmitted. This is more critical for glass in buildings as it determines the solar energy absorption of glass, potentially contributing to thermal stress.
Total Solar Energy Rejected	The percentage of total solar energy rejected/screened out by a glazing system. This measures the window film's ability to reject solar energy in the form of visible light, infrared radiation and ultraviolet light. The higher the TSER number, the more solar energy is rejected, and the more effective the window is in screening solar radiation.
UV Block	The percentage of ultraviolet radiation blocked by a glazing system. The higher this number, the better it protects against fading and aging of the interior...and of skin.
Visible Light Transmitted	The percentage of total visible light passing through a glazing system. The lower the number, the darker the film and the greater the glare reduction.
Visible Light Reflected	The percentage of total visible light reflected by a glazing system. If the number is higher, the film is more reflective.U-Value Winter. The overall coefficient of heat transfer is a measure of the insulation level, mainly as applies to heat loss through glazing. It is given as center-of-glass value in winter conditions. The lower the U-value, the better the insulation qualities of the glazing system. R value (thermal resistance) is 1/U-value.

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