

# The Outside Weatherable Advantage

## Outside weatherable film

Outside weatherable window film (OSW) is a weather-resistant film manufactured with a high-tech, scratch resistant durable coating that protects the film from exposure to the harsh elements of the outdoor environment. Specially designed to be installed on the outside of the window, OSW films provide numerous advantages in terms of performance, versatility and ease of installation.

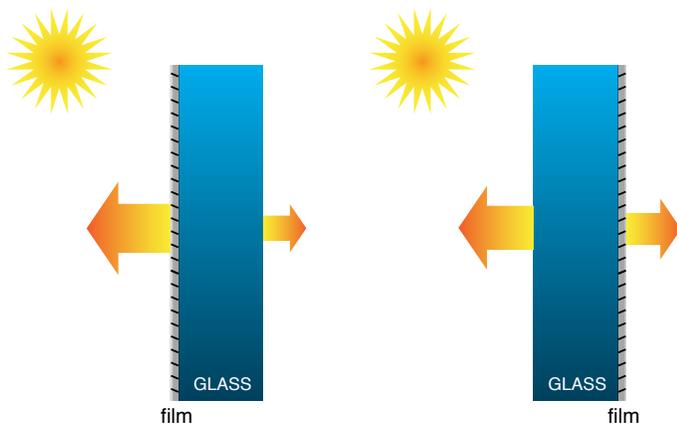
## The energy advantage

Outside weatherable film provides owners and occupants with an energy advantage by improving the total solar energy rejected from a window. Just like indoor window film, OSW film blocks solar heat from entering the windows.

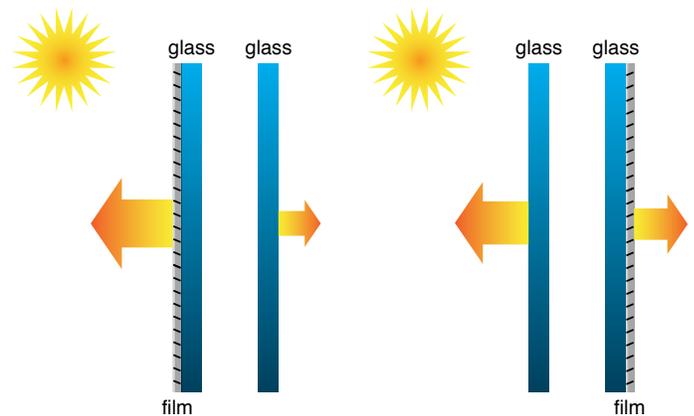
OSW films also naturally expel more of the solar energy outdoors instead of absorbing it into the film itself. When solar radiation strikes window film, some of that radiation is absorbed into the film, causing the glass temperature to rise. The energy in the glass can then be conducted either inside the room or outdoors. With OSW films, more of the absorbed energy is released into the outside air, which puts less stress on the actual glass.

By applying film on the outside of the window rather than the inside, more of the energy absorbed by the window film is conducted directly outdoors. This benefit is in addition to the high performance attributes of the window film, including solar heat rejection, glare reduction and UV protection.

The reduction in absorption of outside weatherable film is even more important for double pane glass units. When traditional indoor window film is installed on the inside of an insulated glass unit (IGU), it can cause the inner pane of glass to heat more than the outer pane. This variance in temperature creates stress on the glass and can cause the glass to break. By applying the window film to the outer pane of an IGU, the heating effect is transferred to the external pane. The external pane naturally releases more of the absorbed energy back outdoors into the air, eliminating any stress on the glass. The result is safely applied film that provides superior total solar energy rejection for a more energy efficient building.



Film on the outside of the glass (left) releases thermal energy to the exterior than film more easily than on the inside of the glass (right).



The benefit of OSW film applied to the outside makes it safer to apply to double pane glass

Solar Heat Gain Coefficient is Further Improved with OSW Film

	Film	SHGC
<b>Single pane</b>	No film	.85
	Silver 20	.21
	Silver 20 OSW-SREX	0.19
<b>Dual pane</b>	No film	.75
	Silver 20	.31
	Silver 20 OSW-SREX	0.15

## Versatility

Outside weatherable film is very versatile, and can be used on any type of glass or window construction. It is universally suited to all single and double pane windows, including those with specialized glazings.

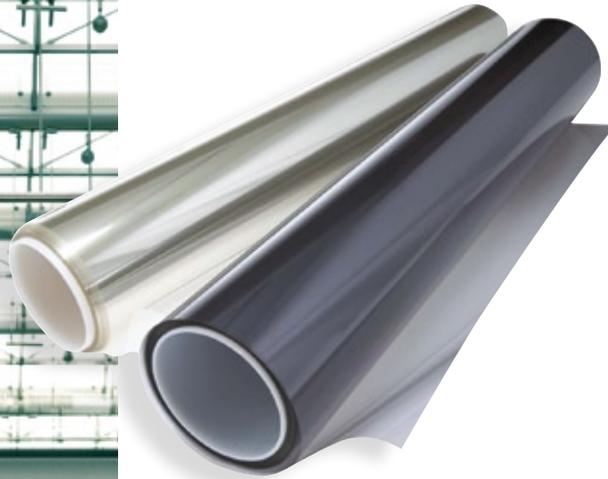
Some regular window films cannot be used on particular types of glass. Notably, high absorbing films cannot be used on low-e IGUs with the coating on the inside of inner pane (surface 3), due to the risk of glass breakage. As outside weatherable film repels the radiation away from the glass more readily, it is a safe alternative for all glass units with low – e coatings.



## Ease of installation

OSW films are a great solution for windows that have restricted access. In some regions of the world, safety codes are a barrier to the use of solar control window film, such as when thick security film or wire mesh is already installed on the inside of a window. In other geographies, obstacles or window elevation may present mechanical difficulties in installing window film on the inside surface, making external installation more timely and cost effective. Examples include skylights and building atriums. Restricted access can also be due to environmental conditions, such as high humidity sun rooms or laboratories. Finally, high security buildings with restricted visitor access can install film more freely on the outside of the windows.

In situations where internal application of window film is difficult or impossible, outside weatherable film provides an effective solution.



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