



C O M M E R C I A L
W I N D O W S H I E L D

Government and Commercial Markets Lead the Way

**The Evolution of Window Films: From
Solar to Security to Decorative and
Smart**

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Window films have evolved considerably since first introduced in the 1970s as tinting for cars. Tinting films grew into sun control films for office buildings. Then, after a number of terrorist attacks in which people died from flying glass, security window film was developed, also for office buildings. As the workplace evolved, and glass offices and conference rooms became the new design style, decorative window films, also known as privacy films, were developed and have become a popular design and functional addition. Today the window film market also includes smart, radio frequency [RF] and anti-bird strike films. With so many films in the marketplace with so many different applications, the topic remains complex for many would-be buyers.

This report details the various types of window films and the markets they serve.



Window Film Types

Solar control

Solar control window films help reduce the amount of harmful UV rays that penetrate clear glass windows in office buildings, making the areas near the windows more comfortable for employees. The film also reduces solar heat gain, which can throw a building's HVAC system out of whack through uneven building temperatures.

Security

Security window films are designed to increase the shatter resistance of glass. They are similar to solar control window films as they are polyester laminates, but they are usually thicker, ranging from 4 to 21 mils. A heavier, more substantial adhesive system also is used to affix the film to the glass.

Recent additions to the security window film market are unbreakable glass polycarbonate panels and bullet shield polycarbonate security glazing systems. These products offer extra protection for exposed glass, particularly for retail establishments with ground floor exposure to vandals, terrorists and other unwanted intruders.

Safety and security window films can be clear or tinted to include a solar control component. These dual-purpose films increase glass strength, help reduce utility costs and make buildings more comfortable.

Privacy/Decorative

The emergence of privacy window films has added an entirely new dimension to the look and appeal of glass offices and conference rooms. These decorative films, also known as privacy films, come in all types of patterns and colors, not only enhance the beauty of the glass but provide some privacy as well. Privacy/decorative film designs include frosted, patterned, gradient, textured, specialty and customized.



Smart film

Smart film, also known as switchable film, is installed on interior glass and has an electrical component that is wired to a light switch. When the switch is on, the film remains clear allowing passersby to see inside. When the switch is off the film becomes opaque, blocking views of the interior and turning the glass into a privacy wall.

Radio Frequency [RF]

Radio Frequency [RF] window films provide a fool-proof method of preventing electronic eavesdropping and theft of secure and classified information from computers and cell phones through window glass.

Anti-Bird Strike

Anti-bird strike window films turn office building glass from lethal obstacles for birds into non-threatening windows. They are commonly used on heavily-glassed building in migratory bird fly zones, which are prevalent in many areas of the country. The annual toll of bird deaths from crashing into glass buildings is in the millions.



Window Film Markets

As the types of windows films have increased so have the markets they serve. Initially, window films were largely a government and commercial enterprise, with building owners focusing on the installation of solar control window film for energy savings. Then came security films for window protection and other films that broadened the market, bringing other target markets in play.

Government

Both federal and state government agencies were early proponents of utilizing window films, initially for sun control and energy savings. Beginning in the 1990s and the rise of terrorism attacks, the federal government has been the largest market for the installation of fragment retention window film. Some of the country's most famous buildings are now protected by security window films.

Commercial

Commercial building owners and management companies have long known the benefits of installing solar control and security window films on their buildings for improved comfort, energy savings and safety. The impact of the solar control window films has been a significant part of the Green Building effort over the past three decades.



General Contractors

General contractors increasingly are finding window film installation as part of their project during office building renovations. In particular, solar window films, security window films and decorative or privacy window films are in-demand for these assignments and general contractors usually turn to experienced window film installers to partner with them on these projects.

Convention Centers

In this era of terrorism, convention centers have been considered likely targets, prompting a surge in installing security window film on convention windows. The film also protects these buildings in areas where hurricanes and tornadoes can do serious damage to windows. Convention centers also are an excellent market for solar control window films as most of them have large areas of glass exposed to sun, making them less energy efficient and costly to maintain.



Schools

With the unfortunate increase in school attacks in recent years, school officials have been installing security window film on the first-floor windows and all entryways into their school buildings. Hundreds of school systems around the country have been at the forefront of this effort to protect their windows to keep out unwanted intruders.



Airports

Airports have become a prime target of terrorists, largely because of the large numbers of people congregated in a tight space. As a result, a number of airports have had security window film installed in their terminals to protect the thousands of travelers that visit their facility every day and all their employees.



Hospitals

Hospitals are always at risk from terrorist attacks, disgruntled former patients or family members of patients, and foul weather events. The risk to immobile patients is enormous. The installation of security window film on hospital windows is an excellent pro-active defense and protects patients and hospital employees.

Museums

Art museums were among the first proponents of installing solar control film on their windows. The film, which reduces the impact of harmful UV rays entering the building, help preserve valuable paintings, photographs and books.

Military Facilities

Military bases and buildings have long been progressive in utilizing the benefits of solar control window film and fragment retention window film in their facilities. The solar control films save energy and neutralize sun glare, as a number of the bases are in warm, sunny climates. Security film installation relates to the fact that military bases are targets for terrorist and other attacks.

Restoration Projects

Older historical buildings, some of them listed on the National Register of Historic Places, have to keep their windows in tact during renovation projects. The installation of window film is a perfect solution to preserving the windows yet utilizing new technology.



Window Film Installation

The key to any window film installation project is hiring the right company. Window film installation of any kind is a complex, complicated process. If you are searching for a company to handle your window film project, you'll want to make sure:

- They have considerable experience. It takes years to perfect the installation process
- They have the expertise in terms of experienced engineers and installers
- They have a good relationship with the top window film manufacturers, as usually the installers purchase the window film and oversee the project
- You study some of the work they have completed and talk with their customers
- They can meet your deadline

Once you find the right window film installer, they will guide you step-by-step through the process. You'll know fairly soon whether you've chosen the right company.



CWS window film installation

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Thank you