

Solar Gard products - glossary



Attachment Systems

Attachment systems are used with safety film installations for added fragment retention, anchoring the glazing system to the window frame. Safety film is installed on the interior room surface of glass and then secured to the window frame by either the mechanical or “wet glazed” method. The level of protection desired dictates whether or not an attachment system is required, as well as the type of method used.

Blast Mitigation Film

A common name for Armorcoat safety & security window film referring to the product’s ability to help hold glass intact during an explosion, minimizing deadly airborne shards.

Clear Dry Adhesive (CDA)

A mounting adhesive that uses water to activate and form a chemical bond between the glass and film, adhering the film to the glass during installation. This adhesive offers a strong bond, film clarity and longevity.

Curing (drying) Time

The time it takes for all application solutions used during installation to evaporate from beneath the film and for the film's adhesive to reach maximum bond strength.

Daylight Installation

A common method for installing solar and safety window film. Window film is precut slightly larger than the framed glass pane, then trimmed up to 1/8 inch of the glass edge.

Dual Reflectance

Some films are more reflective or shiny on the exterior (this improves solar heat rejection) and less reflective on the interior (reduces interior reflection of artificial lighting at night) .

Emissivity (E)

A measurement of a surface’s ability to absorb or reflect radiant energy. The lower the emissivity rating, the better the insulation characteristic of the glazing system in regard to heat loss. For windows with film, emissivity refers to the heat reflected back into the room. When using film performance data, lower emissivity ratings are preferred to minimize interior heat loss.

Fenestration

The arrangement, proportioning, and design of windows and doors in a building.

Fragment Retention Film

A common name for Armorcoat safety & security window film, referring to the primary benefit of safety film: helping to hold glass intact in the event of it being broken.

Glazing

The process of installing glass or panels into the frame of the window; or the window panel material itself i.e. glass.

Infrared (IR) Radiation

Invisible to the human eye, it is only felt as heat and is easily absorbed by most objects. This causes the temperature of these objects to rise.

Infrared (IR) Rejection

Infrared light from the sun is only a portion of the solar spectrum which provides heat through a window. It is important not to confuse IR Rejection with TSER (total solar energy rejection) which is the true indicator of how much energy will be blocked from entering your building.

Low-Emissivity

Low-Emissivity, or Low-E, refers to a coating on glass or window film that reduces heat loss through the window film. The lower the emissivity rating, the better the insulation characteristic of the glazing system in regard to heat loss. Solar Gard Silver Ag 25 is an excellent low-emissivity film.

Metallized

A process where metals are applied onto a clear, polyester film as an even layer. Different metals produce different hues and performance capabilities to meet the varying consumer needs.

Mechanical Attachment System

This method is used for enhanced glass retention, anchoring 8 Mil or thicker safety film to the window frame with a metal batten system. The safety film is installed to the glass, overlapping the window frame by approximately 1 inch. A metal batten system is placed over the overlapped film and screwed into the existing window frame, securely attaching the window film to the frame. Depending on the type of glass retention needed, the mechanical system can be attached as a one-sided (top), two-sided or four-sided installation.

MIL

Unit of length for 1/1000 of an inch (.001”). Used in expressing thickness of films. 1 MIL = 25 microns.

Mylar

A trademark name for polyester film produced by DuPont. Mylar, glass retention, anti-shatter, shatter resistant, fragment retention and blast mitigation are common references to Armorcoat safety and security window film.

Pressure Sensitive Adhesive (PSA)

A film mounting adhesive that uses pressure to form a mechanical bond between the film and glass, adhering the film to the glass during installation. Pressure sensitive adhesive is tacky to the touch. All automotive window films and safety window films incorporate PSA.

Shading Coefficient (SC)

The ratio of solar heat gain passing through a glazing system to the solar heat gain that occurs under the same conditions if the window was made of clear, unshaded double strength glass. The lower the SC number, the better the solar control efficiency of the glazing system.

Solar Absorptance (A)

The amount of solar energy (visible, infrared and ultraviolet,) that is absorbed by the glazing system, expressed as percent.

When sunlight strikes glass, solar energy is either transmitted through the glass, absorbed by the glass or reflected away from the glass. The type of glass and window film applied causes varying absorptance results, expressed as a percent – this is the amount of solar energy that the glass and film retains. Always refer to a manufacturer’s film-to-glass installation recommendation.

Solar Energy

Energy from the sun that is represented by visible light (glare), infrared radiation (heat) and ultraviolet radiation (fading and health hazards). Each form of energy is differentiated by its wavelength.

Solar Heat Gain Coefficient (SHGC)

The percentage of solar energy directly transmitted or absorbed and re-radiated into a building. The lower the SHGC, the better the solar control properties of the film.

Solar Reflectance (R)

The amount of solar energy (visible, infrared and ultraviolet) that is reflected by the glazing system, expressed as a percent.

When sunlight strikes glass solar energy is either transmitted through the pane of glass, absorbed by the glass or reflected away from the glass. The type of glass and window film applied causes varying reflectance results, shown as a percent – this is the amount of solar energy that the glass and film rejects away.

For maximum heat rejection, look for films with a high solar energy reflectance rating. Always refer to a manufacturer's film-to-glass installation recommendation.

Solar Transmittance (T)

The amount of solar energy (visible, infrared and ultraviolet) that passes through a glazing system, expressed as a percent.

When sunlight strikes glass, solar energy is either transmitted through the pane of glass, absorbed by the glass or reflected away from the glass. The type of glass and window film applied causes varying transmittance results, shown as a percent – this is the amount of solar energy that entered through the glass and film. Always refer to a manufacturer's film-to-glass installation recommendation.

Sputtering

A process that imbeds metal particles such as silver, stainless steel, copper, gold, titanium and chromium onto polyester film. Rolls of film are unwound and passed over target materials, depositing atoms evenly on the surface of the film through ion bombardment. This ensures long-lasting color and excellent solar performance. SGSG was the first in the industry to sputter-coat window film.

Total Solar Energy Rejected (TSER)

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 away from the window.

U-Value

A measurement of heat transfer through film due to outdoor/indoor temperature differences. The lower the U-value, the less heat transfers. When using performance data, a lower U-value is desirable for heat management.

Ultraviolet Light (UV)

Invisible, powerful wavelengths (shorter than light but longer than X rays) emitted by the sun separated into three types, UV-A, UV-B and UV-C. UV-B causes sunburn, and prolonged exposure can cause skin cancer. Window films block nearly 100% of ultraviolet light from passing through glass. The Panorama window films are approved products of the Skin Cancer Foundation.

Vacuum Metallizing

Polyester film is wound round a water-cooled roller in a large metal vacuum chamber. The metal, which is usually aluminium is evaporated onto the cold surface of the film.

Visible Light Absorptance (VLA)

The amount of visible light that is absorbed by the glazing system, expressed as a percent.

Visible Light Reflectance (VLR)

The amount of visible light that is reflected by the glazing system, expressed as a percent. A higher VLR rating offers better glare control. Films with higher ratings tend to be more reflective and/or darker.

Visible Light Transmittance (VLT)

The amount of visible light that passes through the glazing system, expressed as a percent. A lower VLT rating tends to be better for glare control, while a higher rating is preferred for maintaining natural light.

Wet Glaze Attachment System

This method used for enhanced glass retention secures the safety film to the window frame with a structure sealant, silicone adhesive (similar to caulking). The safety film is first installed to the glass as a daylight installation and then secured to the frame with a structural sealant - Dow 995 is one of the products commonly used. Sealant is applied around all four edges of the film, overlapping the film and touching the frame to create a bond between the film and frame. This method is also referred to as a chemical attachment system.