

Energy Glossary

Absorption (Absorbance – coefficient of absorption)	The percentage of solar energy, visible light, infrared or ultraviolet rays absorbed by the windows. This value is different for each type of window film. The higher this value, the more the temperature of the film increases and, therefore, that also of the window to which it is applied. (UV/visible light/IR).
AEC	Architects, engineers, and contractors.
BTU-British thermal unit	The amount of heat required to raise the temperature of one pound of water one degree Fahrenheit. 1 BTU = 252 Calories (CAL).
Cap and trade	A system of setting caps or limits on the amount of greenhouse gases a region or company produces, and trading carbon “credits” with other companies in order to meet these goals. Entities with higher emissions can purchase credits from other companies to offset the difference.
Carbon credit	Also known as “carbon offset”. Units of carbon credit, usually measured in tons of CO ₂ , can be purchased to offset carbon dioxide emissions caused by a company or individual.
Carbon footprint	The volume of greenhouse gasses released by a defined structure or process, such as the yearly operation of a building or the manufacturing of a product.
Carbon neutral	To be carbon neutral is to have net greenhouse gas emissions of zero tons or less. The activities of a company, product, or individual that are carbon neutral add no greenhouse gasses to the atmosphere (and possibly remove some).
Certified emission reduction (CER)	These are the tradable greenhouse gas reduction units under the Kyoto protocol.
Clean development mechanism (CDM)	This is a mechanism of the Kyoto Protocol designed to add flexibility to the requirement of lowering greenhouse gasses. It permits implementation of greenhouse gas reducing measures in developing countries, where investments will go further for each dollar paid.



Clinton Climate Initiative (CCI)	The CCI has targeted 40 Large Cities (C40) dedicated to tackling climate change—to develop and implement a range of actions that will accelerate greenhouse gas emissions reductions. With cities contributing approximately 75 percent of all heat-trapping greenhouse gas emissions to the atmosphere, while only comprising 2 percent of land mass, large cities are critical to winning this fight and slowing the pace of global warming. CCI has also announced a partnership with 1100 mayors of large cities in the US to work on reducing carbon emissions in these cities as well. http://www.clintonfoundation.org
COP	Coefficient of performance, an international rating system for air conditioner efficiency.
Document L	The building energy code for the U.K.
Dow Jones Sustainability World Index	An index of companies recognized as leaders in sustainable growth, with environmental responsibility as the most weighted criterion.
Dual reflective	A window film with two distinctly different light reflecting surfaces. Typically the exterior surface is highly reflective while the interior surface has a low reflection. This allows the viewer better night time visibility while maintaining maximum heat rejection during daylight hours.
Infrared rays	Infrared rays are also called IR rays. These are invisible solar rays with a wavelength of 780 to 2500 Nm. IR-A (700-1400 Nm) = near infrared rays IR-B (1400-2500 Nm) = far infrared rays (also generated by heating) Infrared rays are responsible for warming and the sensation of heat.
kWh	Kilowatt Hour, a unit of energy equal to one kilowatt of power used for one hour.
Leadership in Energy and Environmental Design (LEED)	A Green Building Rating System™ published by the United States Green Building Council (USGBC) that encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.
Reflection	The amount of light or infrared radiation that is reflected off of a window or other surface.



Reflectance	Reflectance is the reflection coefficient. This coefficient measures the percentage of solar energy, visible light, infrared or ultraviolet rays that are reflected by the windows. A film with high reflecting power generally has a high thermal reflectance value. (UV/visible light/IR)
Seasonal energy efficiency rating (SEER)	An American rating system for air conditioner efficiency.
Shading coefficient (SC)	The ratio of the solar heat gain through a given glazing system to the solar heat gain under the same conditions for clear, unshaded double strength window glass (DSA). Shading coefficient defines the sun control capability or efficiency of the glazing system.
Solar heat gain coefficient (SHGC)	The transmittance of total direct solar energy through the window plus the radiation of the heat absorbed towards the inside of the building. The lower the value, the more the radiating heat is reflected.
Spectrally selective	Allows certain portions of the electromagnetic spectrum to pass through, while blocking others.
Thermal capacity	The ability of an object to store thermal energy.
Thermal energy	The amount of energy stored in molecular motion, commonly called "heat".
TON-HR	One ton of air conditioning = 12,000 BTU/Hour (3.52kW)
Total solar absorption	The ratio of the amount of total solar energy absorbed by a glazing system to the amount of total solar energy falling on the glazing system. Solar absorption is that portion of total solar energy neither transmitted nor reflected. Since solar transmittance and solar reflectance are measured directly, the following equation should be used in calculating solar absorption. Solar absorption = 1.00 - (solar transmittance) - (solar reflectance)

Total solar energy	Total solar energy is the solar spectrum, from ultraviolet to infrared rays inclusive, and is the spectrum for which the film is designed.
Total solar energy rejected	The percent of incident solar energy rejected by a glazing system equals solar reflectance plus the part of solar absorption which is reradiated outward.
Total solar reflectance	The ratio of total solar energy which is reflected outward by the glazing system to the amount of total solar energy falling on the glazing system. On filmed windows this reflectance is a function of the side of the film facing the window surface. Value is usually expressed as a percent.
Total solar transmittance	The ratio of the amount of total solar energy in the full solar wavelength range (300-2,100 nanometers) that is allowed to pass through a glazing system to the amount of total solar energy falling on that glazing system. Value is usually expressed as a percent. (UV/visible light/IR)
Transmission	Light or infrared radiation that passes through a window.
U-Factor or U-Value	U-Factor is a measurement of the coefficient heat transfer that occurs through the outer and inner surfaces of the glazing system. This value is a function of temperature, and is expressed in BTU per square foot per hour per degree Fahrenheit (BTU/ sq. ft. 0/hr. degrees F). The lower the U-Value, the better the insulation qualities of the glazing system.
Ultraviolet rays	Ultraviolet rays are also called UV rays. These are high energy invisible solar rays with a wavelength of 100 to 400 nanometers (nm.) UV-A (320-400 nm): these are not absorbed by the atmosphere or by glass. UV-B (290-320 nm): these are partially absorbed by the atmosphere and the ozone layer. UV-C (100-290 nm): these are largely absorbed by the atmosphere and the ozone layer. UV rays contribute to the fading and discoloration of materials. Exposure to UV-B rays can cause skin cancer.
Ultraviolet (UV) transmittance	The ratio of the amount of total UV solar energy (300-380 nanometers) that is allowed to pass through a glazing system to the amount of total UV solar energy falling on the glazing system. Ultra-violet is one portion of the total solar energy spectrum which greatly contributes to fading and deterioration of fabric and furnishings.



United States Climate Action Partnership (USCAP)	This is an association of large U.S. companies who “are committed to a pathway that will slow, stop and reverse the growth of U.S. emissions while expanding the U.S. economy”. http://www.us-cap.org/
United States Green Building Council (USGBC)	The U.S. Green Building Council (USGBC) is a non-profit organization committed to expanding sustainable building practices. USGBC is composed of more than 12,000 organizations from across the building industry that are working to advance structures that are environmentally responsible, profitable, and healthy places to live and work. http://www.usgbc.org
Visible light	Visible light comes from rays with a wavelength of between 380 and 780 nm, and includes all the colors of the spectrum, from violet in the shortest wavelengths to blue, green and yellow, and finally red in the longest wavelengths.
Visible light reflectance	The percent of total visible light to be reflected by a glazing system that can be seen visually.
Visible light transmittance (VLT)	The ratio of the amount of total visible solar energy (380-780 nanometers) that is allowed to pass through a glazing system to the amount of total visible solar energy falling on the glazing system. Value is usually expressed as a percent. Glare is influenced by visible light transmittance through a glazing system.

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