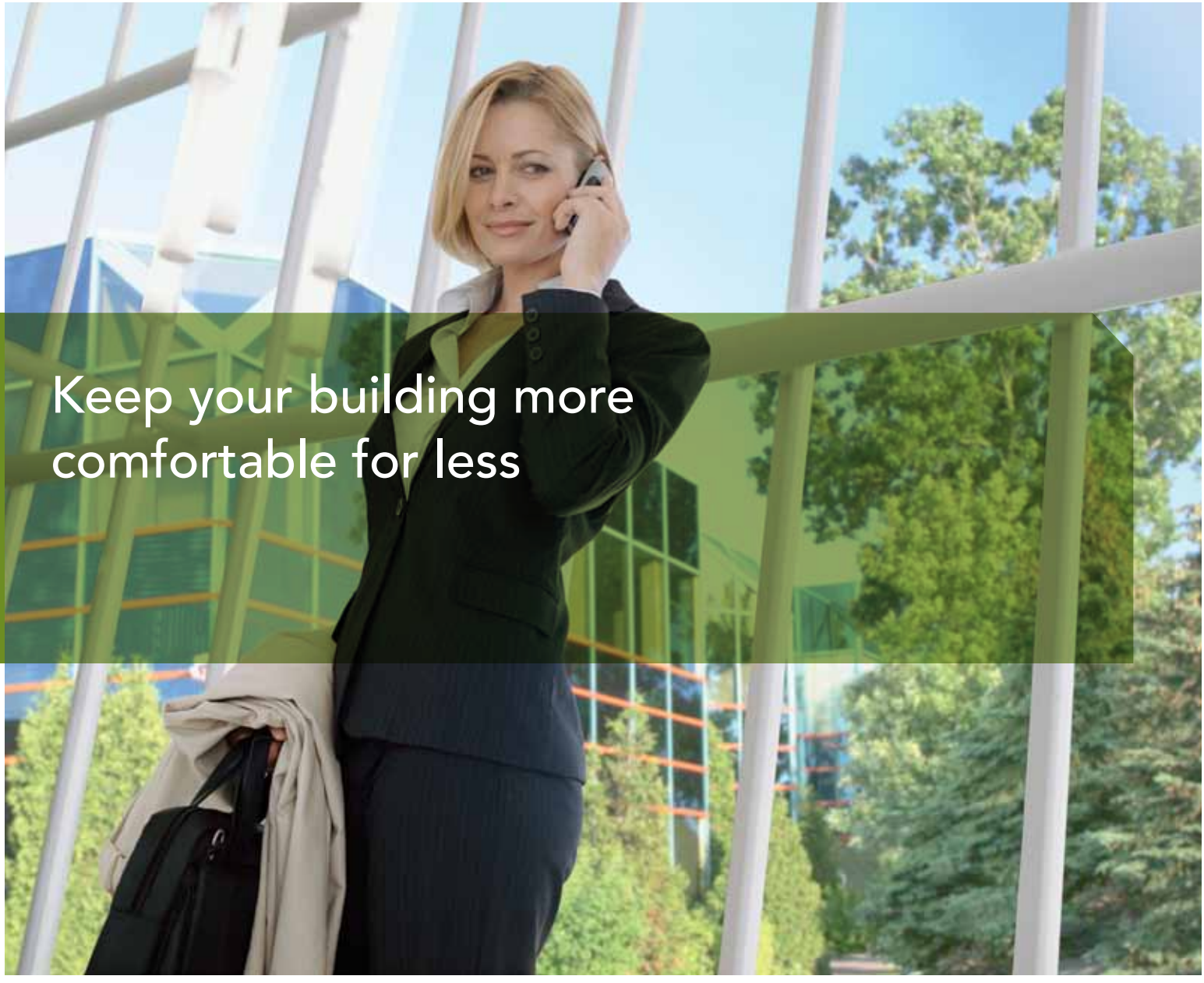
A better environment inside and out.®

Solar Gard® Window Film: Smart Energy Solutions for Buildings

Solar Gard® SAINT-GOBAIN



Keep your building more comfortable for less

Greener Buildings for the Environment and the Bottom Line

Making the right decisions about energy-efficiency improvements for your buildings and facilities is challenging. When it comes to your buildings, understanding your options is critical, whether your goal is to reduce operating costs, decrease carbon emissions or create a more comfortable and productive environment.

Your buildings' windows offer one of the best opportunities for a solid return on investment for energy savings. Solar energy enters through windows and causes heat to build up inside the building, leading to uncomfortable hotspots and an increased need for air conditioning.

With proven heat-rejection properties, Solar Gard solar control window films can help your business consume up to 30%[1] less energy for cooling, by keeping interior temperatures more stable. This reduces the need for air conditioning while moderating peak usage and allowing your cooling system to operate more efficiently. Less costly than installing new windows and more efficient than low-e coatings at rejecting solar heat,[2] Solar Gard window film transforms standard glass into high performance windows.

The U.S. Department of Energy's laboratory, Lawrence Berkeley National Laboratory, says that window film is the most cost-effective way to upgrade a building's windows.[3]

[1] Based on analysis using CAPSOL energy analysis software, with Panorama® Slate 10 film applied, which is only available through a Solar Gard elite dealer network.
[2] Based on window film comparisons with data published in the International Glazing Database, Version 17.4.
[3] "Cost Effective Building Envelope Options for Reducing Cooling Loads in Commercial Buildings," Lawrence Berkeley National Laboratory, University of California.

Save Energy, Save Money

When it comes to making energy-efficient changes to your building, Solar Gard window film is the proven choice for both your budget and the environment.

Energy efficiency

Solar Gard window films reject heat and keep interior temperatures stable, allowing you to cut down on cooling costs and energy consumption. By adding Solar Gard to your existing windows, you can reduce your energy use by up to 30%. One of the world's top energy research centers found that window film tops the ROI list when compared with window replacements, blinds, awnings, shade trees and reflective roofs.[4]

Peak load reduction

One of the biggest challenges in building management today is balancing peak energy usage with climate control and interior comfort. Solar Gard window films reject up to 79%[5] of solar energy to regulate heat absorption and cut air conditioning and cooling costs.

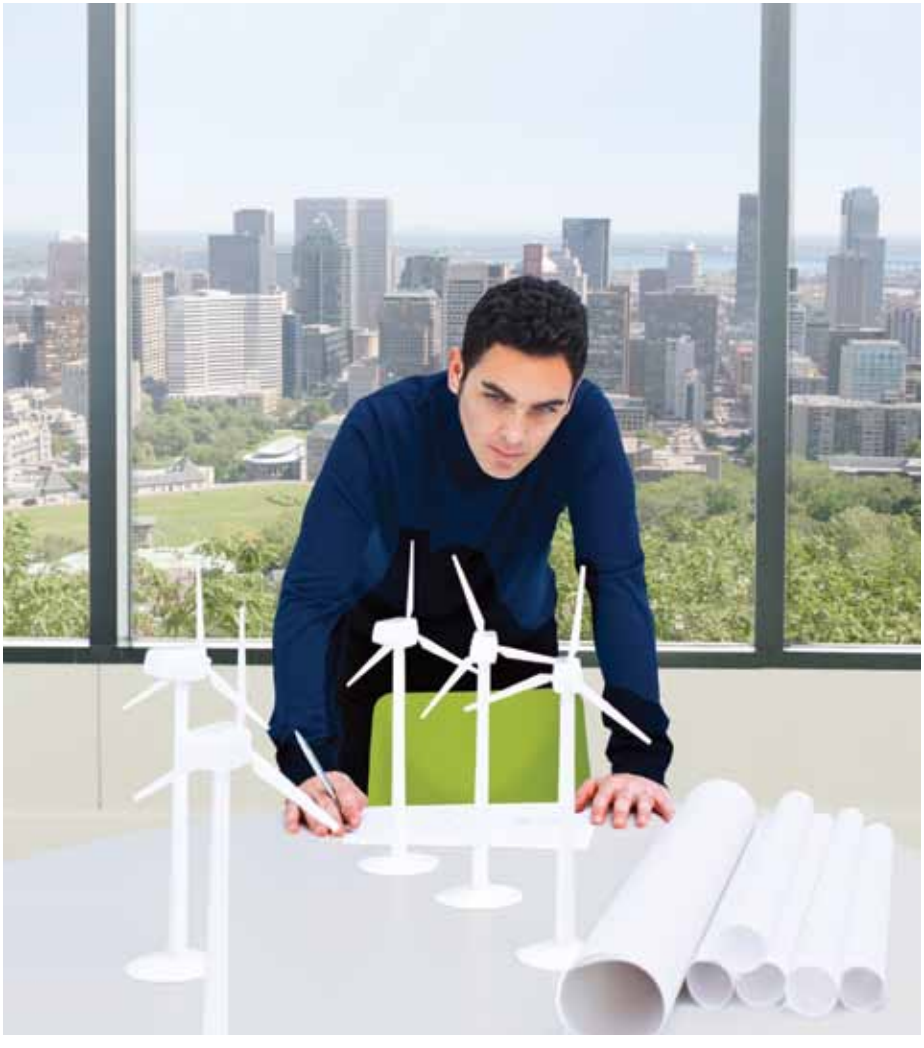
Tax credits and utility rebates

The global trend toward a decrease in greenhouse gas emissions has led to numerous incentives for buildings to increase their energy efficiency. In many cases, buildings that make energy-efficiency improvements, including upgrades with Solar Gard window film, may be eligible for tax credits and utility rebates.

LEED credit assistance

Solar Gard window films can help buildings achieve points toward LEED certification in categories including energy efficiency, light pollution reduction, glare control, daylighting and thermal comfort improvement.

[4] "Cost Effective Building Envelope Options for Reducing Cooling Loads in Commercial Buildings," Lawrence Berkeley National Laboratory, University of California.
[5] NFRC Certified Products Directory, www.nfrc.org/getratings.aspx, based on specifications for Panorama® Slate 10, only available through a Solar Gard elite dealer.



According to the Pew Center on Global Climate Change, heating and cooling systems in buildings produce significant levels of greenhouse gas emissions.[6] Further, the reports states, "Increasing window performance and the insulating properties of the building envelope will reduce the demands upon the HVAC system and will allow HVAC equipment to be downsized, enabling efficiency improvements and cost savings."

[6] Pew Center on Global Climate Change, www.pewclimate.org/technology/overview/buildings.

Decrease your energy use and reduce your carbon footprint

Reduce Your Carbon Footprint

When you decrease your energy use, you are reducing your greenhouse gas emissions – and your building's carbon footprint. Solar Gard window films are the first U.S. manufactured building improvement products and the first window films to achieve a Environmental Product Declaration, verifying that they are carbon negative.[7] That means they save more energy when they are installed than it takes to produce them.

Proven carbon negative through Life Cycle Analysis

Solar Gard analyzed and published the carbon impact of Solar Gard architectural solar control window films through a Life Cycle Analysis following ISO 14040 and 14025 standards. Solar Gard's resulting Climate Declaration showed that these films are carbon negative, producing a net reduction in greenhouse gas emissions over their lifetime. Carbon negative in commercial buildings around the globe, they are, in many cases, carbon neutral within one month of installation.[8]

Our motive for measuring the carbon impact of Solar Gard window films was simple. As a manufacturer of an energy-saving product, we wanted conclusive proof of our claims. Our investment in verifying the carbon impact of our films is just one part of our commitment to producing environmentally conscious products.

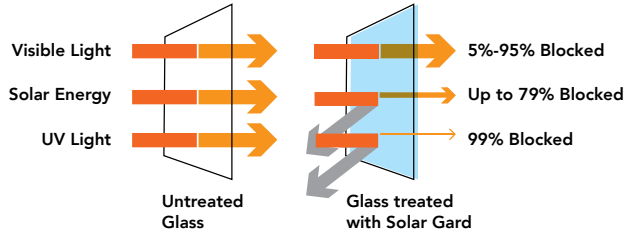
carbon negative earth positive ™

- The carbon cost of one square meter of Solar Gard window film is less than ten kilograms. By comparison, a low-e wood frame window has a carbon cost of approximately 444 kilograms per square meter.[9]
- Over its 15 to 20-year useful life, Solar Gard window film saves 100 times more greenhouse gas emissions from entering the atmosphere than is used or created during its manufacture.[10]

[7] According to EPD registrar www.environdec.com.
[8] Based on a useful life of 15 years, www.environdec.com.
[9] 2011 Buildings Energy Data Book, published by the U.S. Department of Energy.
[10] Global average, based on Solar Gard's Environmental Product Declaration.

Solar Gard Eliminates Harmful Solar Rays

Solar Gard window films are thin, multi-layered pieces of film that are retrofitted to the inside surface of glass. The leader in sputtering technology, Solar Gard produces high-quality, sputter-coated films using durable metals with exceptional solar performance capabilities and color.



Professionally installed Solar Gard window film can be nearly invisible on existing windows, depending on your film selection. The film can allow for visibility inside and out, while filtering out the harmful effects of sunlight, providing you with substantial benefits.

More comfort, less glare

Solar Gard window film can reduce as little as 5% or as much as 95% of visible light, depending on film specifications. This can cut computer monitor glare, increase interior comfort, and add to a building's aesthetics. It can also help reduce light pollution in the night sky.

Temperature control and energy savings

Up to 79% of the sun's harmful solar energy is blocked by Solar Gard window films. With natural sunlight comes unwanted heat and hotspots. Installing Solar Gard can decrease energy costs for cooling by up to 30%.

An SPF of 285+ shields skin, prevents fading

Solar Gard window films filter visible light and block more than 99% of the harmful ultraviolet (UV) light associated with premature aging and skin cancer. With an SPF of 285+,[11] window film can also protect furnishings, carpets and more from fading and damage due to UV exposure.

[11] Based on window film comparisons with data published in the International Glazing Database, Version 17.4.

Beyond Solar Control

Solar Gard offers a line of Armorcoat® safety and security films with and without solar control properties. They are specifically designed to keep dangerous shards of glass together on impact, whether glass breakage is due to an accident, attempted burglary, violent storm or earthquake.

Certain Solar Gard Armorcoat fims are also designed to withstand the severe levels of positive and negative pressure associated with a bomb blast. These films have been installed on some of the most safety-intensive buildings in the world, including U.S. and foreign embassies.

Standards and certifications

Solar Gard films are rated and certified by the National Fenestration Rating Council (NFRC) to ensure consistent energy saving benefits. Additionally, Solar Gard window film performance is measured, calculated and reported in accordance with ASTM, ASHRAE and AIMCAL standards.

Solar Gard's 46 architectural solar control window films covered in the EPD sold during 2010-2011 will save 2.2 million tons of CO_2 from entering the atmosphere over their lifetime.[12] That's equal to:

- the carbon attributed to combusting 221 million gallons of gasoline, or
- the carbon offset by 50 million tree seedlings grown for 10 years.[13]

[12] Based on Solar Gard's EPD, www.environdec.com.
[13] www.epa.gov/cleanenergy/energy-resources/calculator.html.

Integrated approach to implementing a proven energy solution

Solar Gard, the leader in energy and window film, offers a fully integrated approach to energy solutions for your building, including:

- Free of charge energy analysis tools and building modeling services to determine the return on investment (ROI) before you purchase window film.
- A team of energy experts who can address your needs by recommending the most cost-effective solutions for your building.
- Information on local energy legislation to assist you in obtaining tax credits and utility rebates for window film installation.

Solar Gard's commitment to environmentally responsible manufacturing

In today's socially conscious world, many manufacturers in the building industry have rushed to put forth "green" products to capitalize on the buying habits of environmentally sensitive consumers and increasingly stringent regulations. But there's a fundamental difference between jumping on a green bandwagon and being the leader in the movement toward more sustainable products and business practices. Solar Gard prides itself on being a leader in environmentally responsible manufacturing.

For decades, Solar Gard has been dedicated to the ongoing process to reduce the ecological footprint of its products and production processes. Solar Gard is the first window film manufacturer to measure and report the carbon impact of its products through a Climate Declaration proving they are carbon negative. The company includes a commitment to environmentally responsible manufacturing in its Environmental Health and Safety Policy, and follows internationally recognized standards, including ISO 14001:2004 for Environmental Management Systems and ISO 9001:2008 for Quality Management Systems.

Solar Gard® films are sold and installed through a network of dedicated partners globally.
To find a partner near you go to
http://solargard.com/US/Dealer_Locator/Find_A_Dealer

More information is available at
www.solargard.com/energy/home

Protect. Save. Renew.

Smart solutions that positively impact lives.

About Solar Gard®

Solar Gard positively impacts lives with products that protect, save and renew. Headquartered in San Diego, California, Solar Gard makes industry leading architectural and automotive window films, photovoltaics and custom coatings. A division of Saint-Gobain Performance Plastics, a subsidiary of Saint-Gobain, the world leader in the habitat and construction markets, Solar Gard's architectural solar control window films are proven carbon negative and reduce global greenhouse gas emissions. Solar Gard products are sold in more than 90 countries under the Solar Gard®, Quantum® and Solar Gard Armorcoat® brands. For more information, visit www.solargard.com.

www.solargard.com/us

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