

## Our Commitment to Transparency and Sustainable Products

Solar Gard is the first manufacturer of window films to publish an Environmental Product Declaration (EPD). The EPD is based on a life cycle analysis of the cradle-to-grave impacts of Solar Gard's products and fulfills the requirements of an ISO-compliant product category rule. The results are third-party verified per international standards (ISO 14044 and ISO 14025). Similar to a food label, an EPD provides a user with information on the environmental impacts and benefits of products.

Solar Gard has two EPDs covering 46 window film products (published in 2010 and 2012). An EPD includes information on the fossil fuel use, global warming potential, acidification, eutrophication, smog and ozone depletion that occurs as a result of:

- Extracting, processing and transporting raw materials to the Solar Gard factory
- Manufacturing the window films
- Transporting the films to customers
- Using the films
- Disposal of the film at the end of its life.

The environmental impact created in all of these steps are quantified and then compared to the carbon reduction benefits of using the films on buildings. Once installed the films reduce solar heat gain to the building which reduces energy use for air conditioning (cooling) the building. The energy saved and carbon footprint reduced by using the films far exceeds the energy used and carbon emissions for all steps in the Solar Gard film life cycle.

As illustrated in Figure 1, Solar Gard window films save an average of 100 times more carbon emissions over a 15-year lifetime than are emitted during their production. The results of the EPD clearly show that Solar Gard products are earth positive and carbon negative, meaning, when applied to a building Solar Gard films reduce more environmental impacts than are required to make, distribute and install the films.

At Solar Gard, environmental responsibility is of the utmost importance and Solar Gard's policy on environment, health and safety confirms this value. Within this policy there are 6 goals that Solar Gard strives to achieve:

- Comply with all applicable environmental, health and safety laws, regulations and Saint-Gobain EH&S standards
- Innovate new technologies and methods to reduce our carbon emissions
- Reduce the total environmental impact of our operations
- Continuously improve our EHS performance
- Lead by action in deploying cost-effective EHS technologies and procedures
- Empower all employees to take personal accountability for protecting the environment and creating a safe and healthy workplace

Publishing Environmental Product Declarations (EPDs) for various architectural solar control window films is just one approach that Solar Gard is taking to achieve these goals. To learn more about Solar Gard's EPDs visit our website <http://solargard.com/About/Environment>

Figure 1

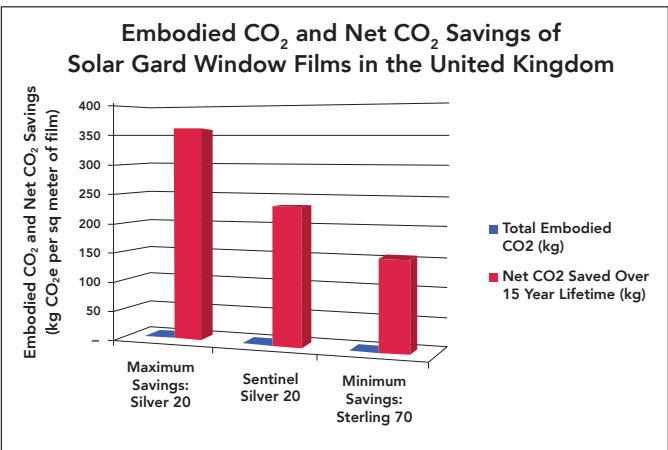
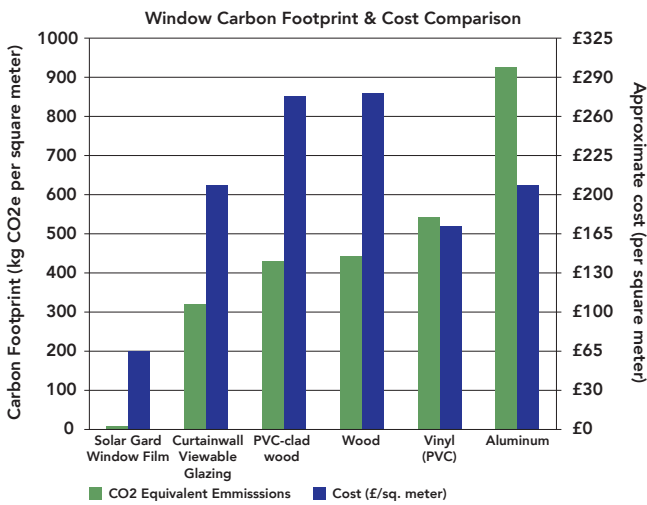


Figure 2



<sup>1</sup>Based on U.S. Dept. of Energy's 2011 Building Energy Data Book  
<sup>2</sup>Based on 2011 RSMeans Building Construction Cost Data  
<sup>3</sup>Highest impact film from LCA study, excluding use phase benefits  
<sup>4</sup>Solar Gard's estimate based on data obtained from retail installers in Southern California and converted to GBP

When evaluating opportunities to improve energy performance of a building it is important to consider the life cycle of the products that can be used to improve the building envelope. Compared to replacing windows, the embodied carbon of Solar Gard films is at least 35 times less than new windows. Figure 2 compares the amount of carbon emissions produced to manufacture one square meter of low-e windows in different frames.

## Films included in Solar Gard EPDs

- |                             |                    |
|-----------------------------|--------------------|
| Autumn Bronze 30            | Silver AG 50 Low-e |
| Bronze Silver 15            | Slate 10           |
| Bronze Silver 20            | Slate 20           |
| Bronze Silver Bronze 10     | Slate 30           |
| Grey Silver 15              | Slate 40           |
| Grey Silver Grey 10         | Slate 50           |
| Hilite 40                   | Solar Bronze 20    |
| Hilite 70                   | Solar Bronze 35    |
| LX 40                       | Solar Bronze 50    |
| LX 70                       | Stainless Steel 10 |
| Quantum Silver Quantum 10   | Stainless Steel 20 |
| Quantum Silver Quantum 20   | Stainless Steel 30 |
| Sentinel 4 Mil Clear        | Stainless Steel 35 |
| Sentinel Silver 20          | Stainless Steel 50 |
| Sentinel Silver 35          | Sterling 20        |
| Sentinel Stainless Steel 15 | Sterling 40        |
| Sentinel Stainless Steel 25 | Sterling 50        |
| Sentinel Stainless Steel 40 | Sterling 60        |
| Sentinel Stainless Steel 45 | Sterling 70        |
| Silver 20                   | TrueVue 5          |
| Silver 35                   | TrueVue 15         |
| Silver 50                   | TrueVue 30         |
| Silver AG 25 Low-e          | TrueVue 40         |

2007	2008	2009	2010	2011	2012
Launched state-of-the-art energy analysis tools	Joined Clinton Foundation Initiative	Began waste and recycling management programs with suppliers	Improve the energy efficiency of our facility	Defined our company carbon footprint, listed on the California Climate Action Registry	Awarded Climate Action Leader status
					Launched employee accountability programs
					Certified Environmental Management System
					Achieved our climate declaration & Environmental Product Declaration for 32 films
					Switched to recycled/recyclable packaging
					Second Environmental Product Declaration for 14 films

[www.solargard.com/me](http://www.solargard.com/me)  
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