

ClearShield High Light Glass™

solar energy



ClearShield High Light Glass™

- **Maintains light transmission**

- Optimises solar energy transmission
- Maintains initial peak watt performance
- Increases cumulative watt hours

- **Lowers costs, raises revenue**

- More cost-effective energy production
- Reduces maintenance costs
- Faster payback time

- **Cleaner is greener**

- Generation of more green and sustainable energy through improved efficiency
- Cuts CO₂ due to reduced cleaning frequency
- Eliminates the need for harsh cleaning methods and chemicals



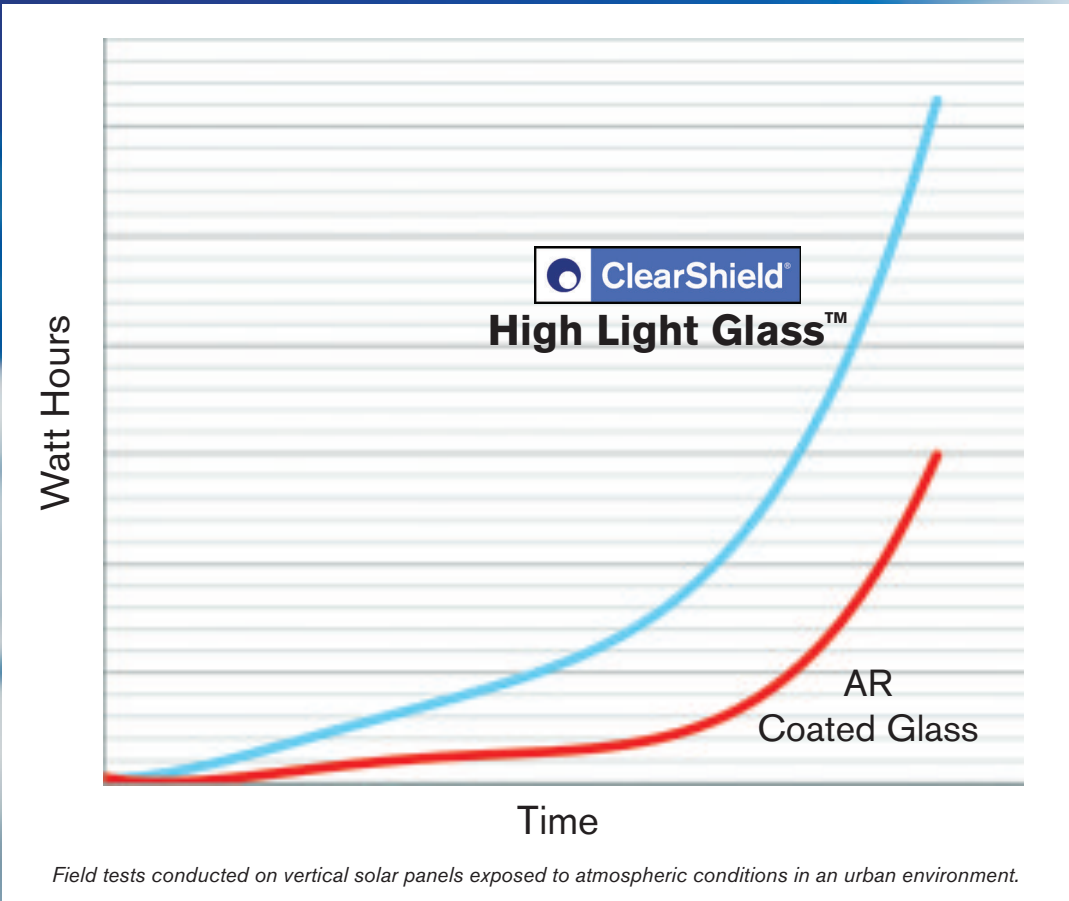
THE NEED FOR DURABLE GLASS SURFACE PROTECTION

The performance of solar energy systems – whether photovoltaic (PV) or thermal panels for heating – all depends on the quality and cleanliness of the glass surfaces used to collect the solar power. Maintaining these surfaces requires a durable and effective surface treatment to reduce long-term staining and build-up of contamination.

The **ClearShield System for High Light Glass™** provides a total solution to renovate, protect and maintain glass surfaces used in solar energy applications. This allows the peak performance of solar installations to operate at optimum efficiency with less maintenance requirements.

In field trials, **ClearShield High Light Glass™** has been proven to accumulate more watt hours over time compared to standard Anti-Reflective (AR) coated glass, as can be seen in the graph below.

ClearShield High Light Glass™ = Greater photovoltaic performance with less maintenance.



CONVERTING ORDINARY GLASS TO CLEARSHIELD HIGH LIGHT GLASS™

All types of solar energy glass can be converted to ClearShield High Light Glass™ either in the factory when new or already installed on-site thanks to the ClearShield System's versatility.

Our specially trained on-site applicators can treat installations on any scale, anywhere in the world.

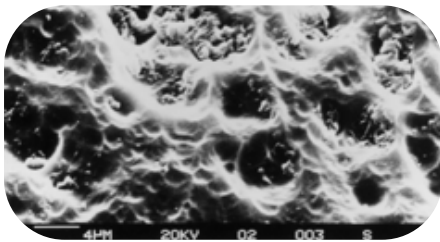
CLEARSHIELD GLASS PROTECTION

Proven in a range of glass applications in all types of buildings, marine vessels and transportation vehicles that spans almost 30 years, the award-winning ClearShield System is the world leader in durable glass surface protection solutions.

For all glass, ClearShield:

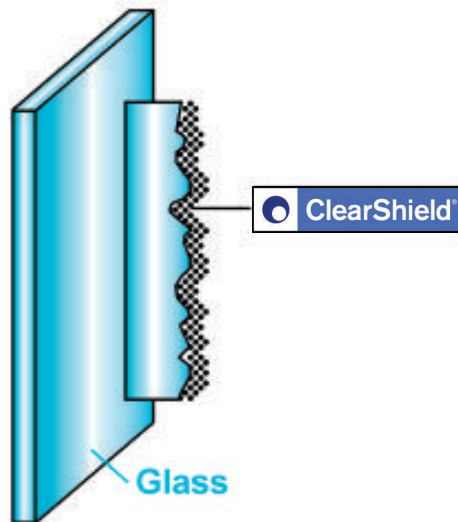
- **Resists staining and discolouration**
- **Is always easier to clean and keep clean**
- **Halves frequency of cleaning on average**

If your solar panel installation is suffering from weak energy generation or you have difficulty keeping it clean, just think of the benefits of ClearShield High Light Glass™: increased efficiency, easier maintenance, more revenue with lower costs and reduced carbon footprint.



Micrograph of aged glass

The surface of glass is not smooth, consisting of microscopic peaks and potholes. Organic and inorganic contaminants fill these potholes and chemically react with the glass, firmly bonding to the surface. Because of this, cleaning glass becomes more difficult.



When applied onto ordinary glass, ClearShield cross-links to form a strong chemical bond that is completely transparent, chemically inert, non-hazardous and UV stable. Unlike a coating, ClearShield is a polymeric resin and becomes part of the glass so will not peel, flake or crack.

ClearShield prevents contaminants from bonding onto the surface and limits further damage caused by corrosion and chemical attack. Dirt can easily be removed using normal cleaning methods.

EASIER GLASS MAINTENANCE

Typically, ClearShield reduces the frequency of cleaning by half. Like 'non-stick' cookware, the maintenance of ClearShield High Light Glass™ does not require harsh and abrasive cleaning chemicals and methods that can be harmful to the environment.

The ClearShield System has a full range of highly effective After-Care products available that is:

- **Kind to the glass and the environment**
- **Versatile to suit specific contamination**
- **Economical and simple to use**

ClearShield. For long-lasting protection of glass.



CASE STUDY: CYPRIA MARIS HOTEL, CYPRUS

The Cypria Maris Hotel is located in the coastal town of Paphos, southwest Cyprus. A popular resort, the town attracts thousands of tourists every year.

Cyprus enjoys over 330 sunny days annually so solar panels installed on hotel roofs for heating water is not an uncommon sight and the Cypria Maris is no exception.

However, the hotel's location created problems for the solar panels installation. First, it faced the sea, so contaminants from the sea bonding on the panels was extremely corrosive to the glass surface. Secondly, the dry and dusty environment meant the panels easily got dirty. Therefore they lost their efficiency unless frequent – and therefore expensive – cleaning was utilised.

ClearShield was subsequently applied on-site to the panels to protect them from dirt and contamination. After treatment, the panels were significantly easier to clean and keep clean. In addition, the frequency of having to access the roof to clean the panels was reduced, saving time and expense.

So effective was ClearShield in resisting dirt, the efficiency of the solar panels was increased by some 11% after treatment.



Above: Before ClearShield treatment, the panels would quickly get dirty due to the dry and dusty climate



The solar panels before (above) and after (below) treatment with the ClearShield System

