

WattGlass

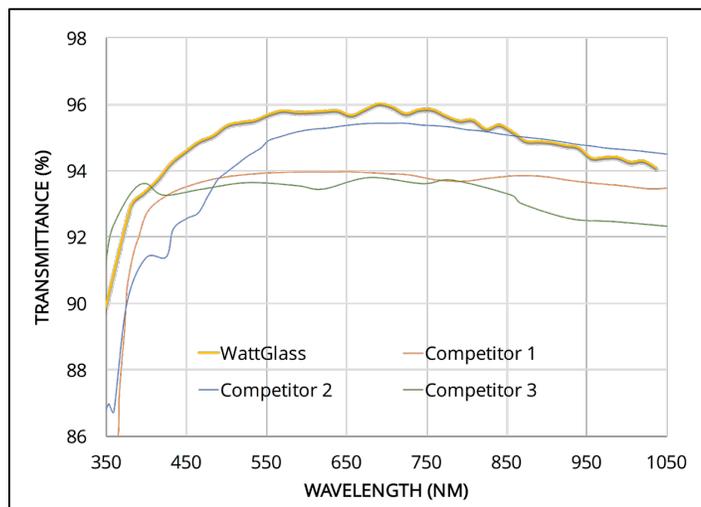
Antireflective and Anti-Soiling
Solar Glass Coating

Introduction

Multifunctional antireflective coatings (ARC) with improved optical performance, durability, and anti-soiling capabilities have much appeal in the industry's effort to reduce the levelized cost of energy (LCOE) of solar generated electricity. Typically, these coatings result in tradeoffs between performance and functionality and utilize hazardous materials such as solvents, acids, and fluorocarbons. WattGlass has developed an ARC that surpasses the performance of conventional coatings and is resistant to particulate soiling, while remaining non-hazardous and 100% water-based.

Performance

WattGlass is a front runner in the ARC industry with coatings that allow up to 3.2% more energy from the sun to pass through solar glass. This performance is enabled by the low index of refraction of the WattGlass coating. Further improvements to our coating technology have resulted in two distinct coating formulations. WattGlass HT is a stable solution with long shelf-life that is formulated for use with tempered or heat strengthened glass. WattGlass LT has identical performance, but contains an additional chemistry that allows it to cure at room temperature.



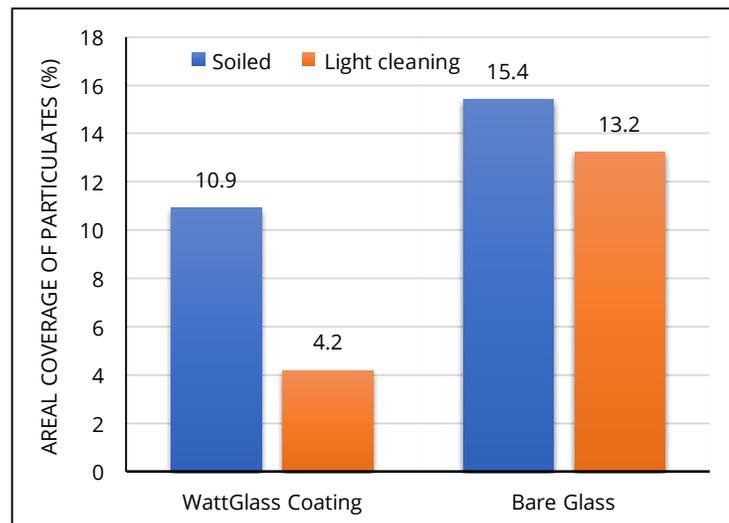
Transmittance spectra of WattGlass coating on 3.2mm low iron glass compared to published competitor's data.

Durability

The WattGlass coating has been subjected to industry standard durability and reliability testing. After 1000 cycles of abrasion testing to EN1096.2, our coating showed less than 0.15% in degradation of the solar weighted transmittance. After 3000 cycles, three times the standard testing regiment, degradation is still less than the failure metric of 0.5%. We are in the process of IEC certification of modules with WattGlass coatings and expect data to be available in the Fall of 2017.

Anti-soiling

Due to the unique surface structure of the WattGlass coating, particulates such as dust, dirt, and pollen do not adhere strongly to the surface and can be easily removed by wind, rain, or mechanical cleaning. Additionally, the WattGlass coating is superhydrophilic, allowing small amounts of water from rain events to efficiently clean modules. These combined effects result in less frequent cleaning cycles and reduced water waste.



Demonstration of reduced particulate accumulation during soiling and removal of particulates from coated surface. In this test, samples were inverted and lightly tapped to clean.

The Technology

WattGlass coatings are unique water based routes to deposit nanoscale silica films on glass and other substrates. We've pioneered a chemistry that enables uniform deposition, outstanding performance, and enhanced mechanical strength. These coatings are compatible with all industry standard deposition processes, and are a drop-in replacement for sol-gel coatings of the past.

Learn More

Innovative research drives us to be the leading force for antireflective coatings that efficiently deliver cost-effective solutions to our customers. Contact us to learn more.



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