



Solar Energy Reflection

MIWD Information Statement
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What is Solar Energy Reflection? Basically, solar energy is radiant energy from the sun that can manifest in different forms, including heat and light. We commonly think of it simply as sunlight. When sunlight hits a surface, such as window glass, it sometimes reflects onto another object. The amount of sunlight reflected by window glass is increased when it has a low-emissivity (low-e) coating, which is purposely designed as an energy saving device to decrease the amount of sunlight entering a home. The reflection of sunlight off low-e window glass indicates the glass is “doing its job.”

Any reflected sunlight may naturally contribute to some increase in the temperature of the surface on which it falls.¹ Although unusual, there have been reports of property distortion involving its surface heat due in part to reflection of sunlight off of window glass. Many factors beyond reflected light must combine to result in an impact on other property. Neither this phenomenon nor the reported instances of distortion are limited to one manufacturer’s windows and do not arise from a product defect.

Property distortion from reflected sunlight is most often reported with vinyl siding. It should be recognized that there have also been reports of distortion to vinyl siding where sunlight reflected off of sources other than window glass, such as roofing shingles, asphalt and concrete. Additionally, property other than vinyl siding can be affected. The key is that the temperature of the affected property must reach a point at which distortion can occur, and this is highly dependent on the immediate environment and the properties of that material. Additional factors to consider include ambient temperature; the added presence of direct sunlight; color and absorption rate of the affected property; sources to reflect sunlight; and other site-specific factors such as exterior wall layout, location of homes to one another, and orientation of the home.

Although sunlight reflecting off of glass is but one of the factors, it may be among the easiest to address. Application of a full screen on the window has been shown to eliminate concentrated sunlight reflection. If for some reason this is not an option, use of a replacement insulating glass unit with a capillary tube tends to minimize focused reflection. Please contact your distributor or our Consumer Service Department for pricing. Other options include analysis at the building design phase, sunshades or awnings, planting landscaping to diffuse sunlight, or use of building materials capable of withstanding higher temperatures. Your design professional or builder should be able to offer better site-specific alternatives because they will be more familiar with the original design consideration and materials used to construct your home.

Please do not hesitate to contact our Consumer Service Department at 717-365-2500 or customercare@miwd.com with any other questions or requests you have regarding your windows or doors.

¹ For more information, see Hart, et al. (2011). Research Needs: Glass Solar Reflectance and Vinyl Siding. Retrieved from Ernest Orlando Lawrence Berkeley National Laboratory, <http://eetd.lbl.gov/sites/all/files/publications/lbnl-5022e.pdf>.