

What is Radiant Energy?

Wikipedia explains that “radiant energy is the energy of electromagnetic waves.”

“When electromagnetic waves are absorbed by an object, the energy of the waves is typically converted to heat. This is a very familiar effect, since sunlight warms surfaces that it irradiates. Electromagnetic waves can also be reflected or scattered, in which case their radiant energy is redirected or redistributed as well.”

This “reflection” characteristic is of key importance to the effectiveness of Solar Comfort products.

“Solar Heat Gain Co-efficient” (SHGC) is a measure of the rate of solar heat flowing through a window or skylight. In fact, the NFRC says: *“Solar heat gain through fenestration products tends to be the single most significant factor in determining the air-conditioning load of a residential building. The intensity of heat gain from solar radiation can greatly surpass heat gain from other sources, such as outdoor air temperature or humidity.”*

“Standard glass has an emittance of 0.84 over the long wavelength portion of the spectrum, meaning that it emits 84% of the energy possible for an object at its temperature. It also means that for long-wave radiation striking the surface of the glass, 84% is absorbed and only 16% is reflected.”

The unwanted heating up of our homes and offices by the sun’s radiant energy in summer is not the only problem that is created by windows. Radiant energy exists inside our homes as well, keeping us warm in the winter. This form of radiant energy tends to be in the longer wavelength, “far infra-red” part of the electromagnetic spectrum.

“Consumers Guide to Buying Energy Efficient Windows and Doors” states that *“Radiation losses through the window glass represent about 2/3 of the total heat loss through a standard window.”*

As you can see, just as glass does very little to stop radiant energy from the sun from heating up our homes in the summertime, it is very ineffective in stopping the radiant energy we have created with our furnaces and fireplaces from exiting out the window in the wintertime!

Thus, it makes sense, that if we can **gain control of radiant energy by “reflecting” it**, rather than allowing it be absorbed or transmitted through the glass, we can greatly increase our comfort level AND reduce our energy costs.

This is the secret of Solar Comfort!!

SOLAR COMFORT “REFLECTS” RADIANT ENERGY SO THAT MUCH LESS OF IT PASSES THROUGH GLASS

As we have just seen, “**radiant energy transfer**” accounts for the vast majority of heat transfer throughout our homes, including through our windows. In outer-space, extreme cold and very strong radiant energy from the sun poses huge problems for astronauts and space craft. They are exposed to temperatures from +250 degrees to -400 degrees Fahrenheit! To solve this problem, NASA developed “**radiant energy barrier**” technology. Radiant energy barriers are advanced aluminized materials which “reflect” radiant energy. In the space program, radiant energy barrier materials are used to reflect the high radiant energy rays of the sun so their energy is not absorbed and converted to heat. As well, radiant energy barrier materials in space suits are used to reflect the radiant energy emitted by the astronauts themselves back into the space suits in order to keep them warm.

In the past 15-20 years, based on NASA’s discoveries, many “radiant energy barrier” products have been created to solve numerous problems here on earth. They include aluminized packaging materials to retain heat, and aluminized building product materials for walls, ceilings, and sub-floors to control radiant energy transfer, either reflecting the sun’s radiant energy out, or keeping our radiant energy indoors in cold climates.

But **Solar Comfort Environmental Technologies** is the only company to successfully use radiant energy barrier technology to control radiant energy transfer through existing windows, while still allowing an abundance of natural, healthy visible light to pass through! This is truly a revolutionary product! In fact, Solar Comfort is a Space Foundation, *Space Certified Product*.



Solar Comfort Environmental Technologies

Roller Blinds

Vertical Blinds

Window Screens

Sliding Panels

Skylight Panels