

Topics Needing Research

Box Cookers

Question:

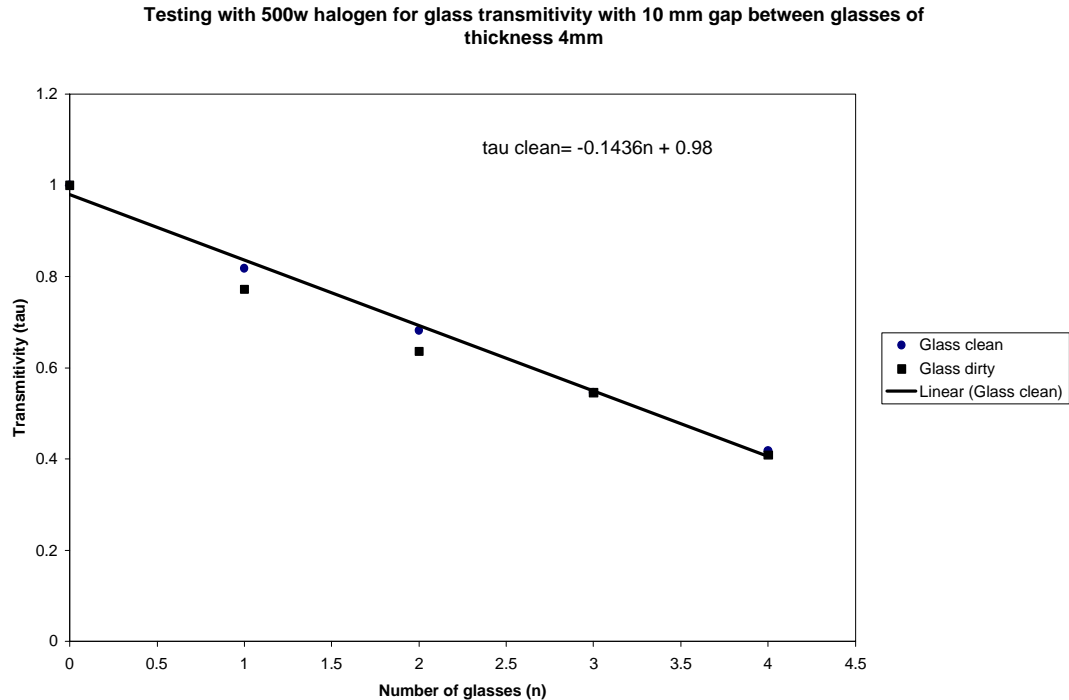
How does a sheet of plastic film (like an oven-cooking bag) compare with a sheet of glass for the glazing? Does a double sheet of plastic film equal a single sheet of glass? Do windy conditions effect plastic film more than glass?

Answer:

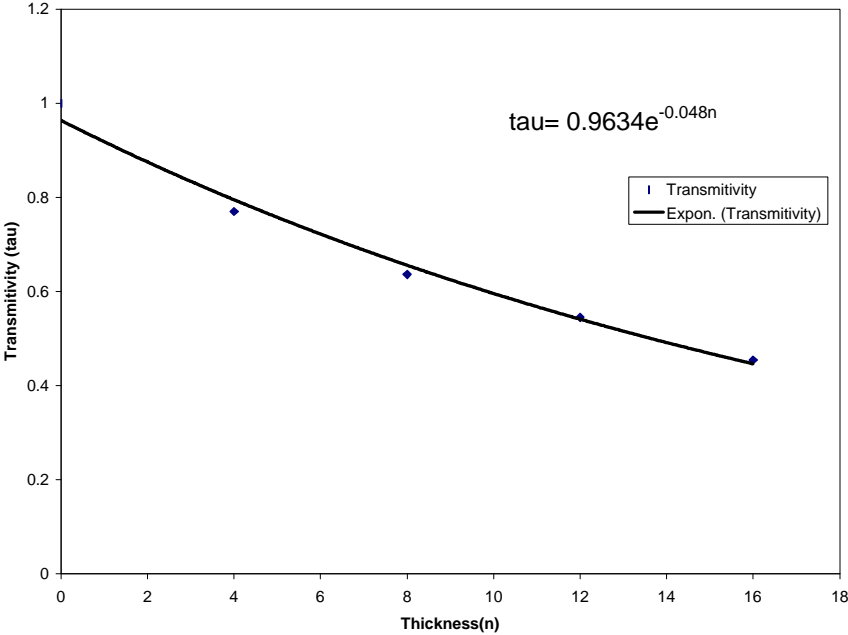
As a first attempt to get the answer a simple test was done with solar educational Kit to determine the transmittivity of glass using 500 W halogen lamp. It was found that when halogen lamp is kept near the kit, it produces same current as when exposed to the Sun. Thus it was used keeping halogen lamp at 10 cm away from kit. On taking the direct reading of voltage, each reading is divided with the original reading to get the transmittivity of glass placed in between the lamp and kit.

Similarly the experiment is repeated with 100-micron OHP transparency. It was selected as it can with stand high heat flux and good transparent property.

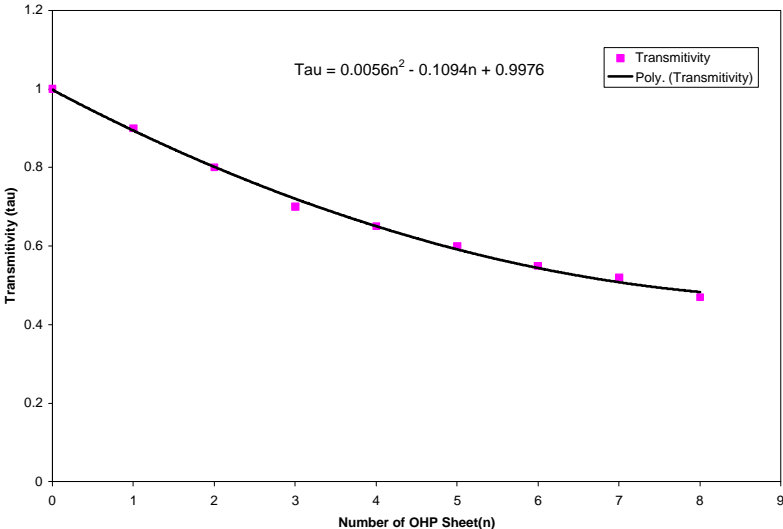
Result:



Effect of thickness of Glass



Transmittivity of OHP 100 micron Thick



Conclusion: Two OHP of 100 micron is equivalent to single glass of 4 mm which has a transmittivity of around 0.81. The wind effect is not tested.

