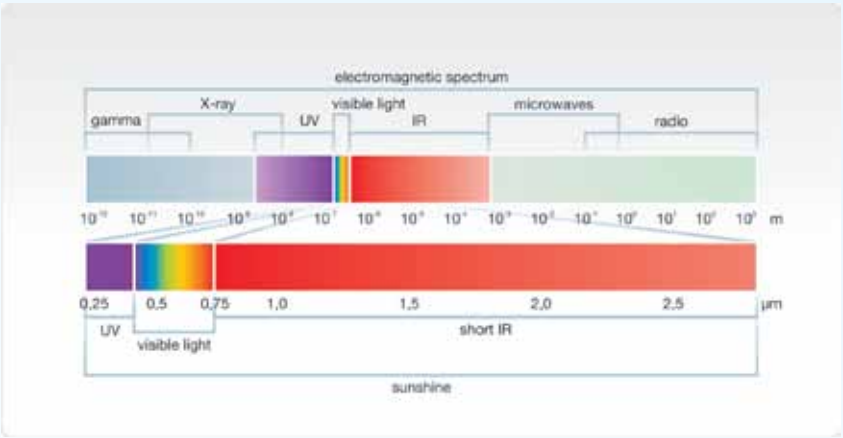
Skyfol Films
Window Film Solutions

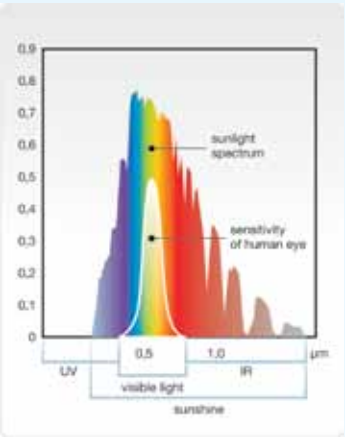
Skyfol Technologies Window Film Solutions

ENERGY SAVING WITH SKYFOL WINDOW FILMS

One of the most important roles of window films is heat protection. It is especially important in respect of cost saving and comfort which film we choose as there are huge performance differences between the series. Firs of all, we have to understand the sources of warming caused by sunshine.

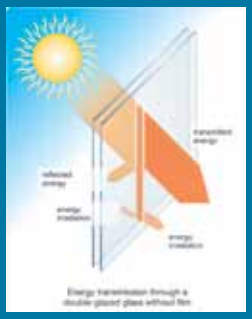


A radiation between 300 and 2500 nm comes through the glass; a considerable amount of other spectra are absorbed by the glass.



The diagram shows the energy value of the radiation in w/m²

Solar films help to filter out unwanted radiation. They absorb UV radiation to 99%; in this way they protect our health and they prolong the lifetime of our valuables. Although UV radiation has a high specific energy content, its effect is not significant from an energetic point of view as only a small part of it belongs to the spectrum that is examined by us. In the energetically relevant spectra, one part of the energy is reflected, another part is let through and the rest is absorbed.



Recommendations for the choice of films:

Light or dark: if there isn't too much sunlight, we should chose a film with 50 or 70% light transmission. If the glare is disturbing, then we should chose one with 15% light transmission. We don't recommend a film with less than 50% light transmission for flats or shops, whereas for winter gardens, fabrics or offices with full glass windows a film with 15 or 35% light transmission is optimal.

Indoor or outdoor: outdoor films are the most effective from the perspective of reducing the energy costs for cooling. However, the indoor version is the better choice if we would like to realize savings in all seasons. If it is possible, we only recommend outdoor films onto vertical glasses; a significantly longer warranty makes the indoor variants a better choice on oblique glass surfaces.

Winter-summer energy protection: In summer, the outdoor films are more effective than the indoor variants but this effect reverts in winter because indoor films have heating effect as they irradiate the absorbed heat. Besides, its special variants effectively reflect the inside middle-infrared radiation, which is absorbed by the glass. An optimal choice is P50 or SI15LE if stronger light protection is needed.

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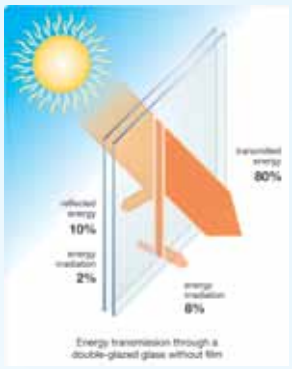
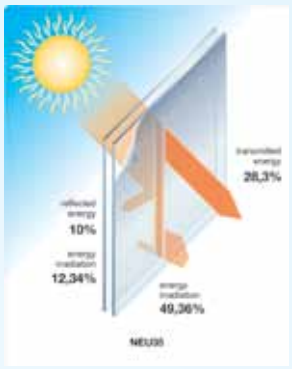
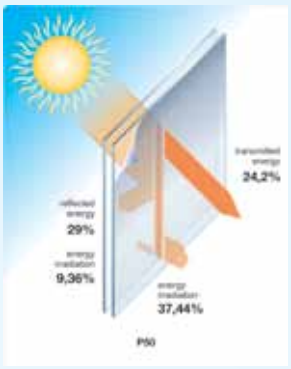
Films produced by different technologies perform differently. From the point of view of energy saving it does matter how much the total energy transmission and absorbance of the film is. Below you can see examples for the performance of different films.



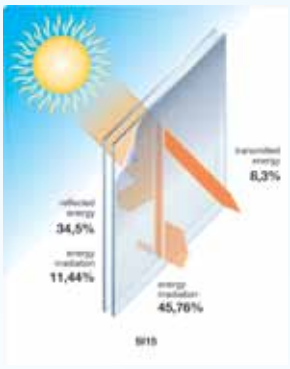
Transmitted energy reduction: 12%
Light transmission: without film 88%



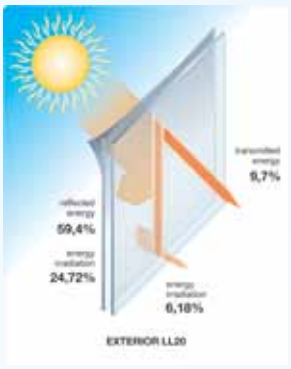
Transmitted energy reduction: 22%
Light transmission: 31%



Transmitted energy reduction: 39%
Light transmission: 44%



Transmitted energy reduction: 46%
Light transmission: 13%



Transmitted energy reduction: 84%
Light transmission: 12%

Winter heat protection of films

In case of winter heat protection it is ideal if the film keeps a transmission close to the infrared value and if it reflects long wave-length infrared radiation. For the time being, films cannot achieve this effect but as keeping long wave-length infrared radiation inside is more important from the point of view of winter heat loss, therefore films with low absorbance and high reflection are recommended here as well.