Nano Glass Coating for Energy Saving Applications

On average, 50% of the energy consumption is being used for Air Conditioning. The present invention is a nano glass coating which can be applied directly onto glass panels. The coating is able to reject more than 90% of Ultraviolet radiation and Infra-Red radiation above 1400nm wavelength, while allowing allows the transmission of at least 60% of the visible light or approximately 30.9% of the Solar Energy (300nm – 2500nm) to be transmitted through. This represents a significant reduction in the transmission of heat through the glass without a significant compromise of its transparency.

This property of the film makes it desirable in the application of energy saving in building. The nano glass coating may be removed if future alterations are required, and unlike applications like conventional solar film, the nano glass coating can also be used on glass surfaces with complex shapes.

<table>
<thead>
<tr>
<th>Untreated Clear Glass (3mm thickness)</th>
<th>Brand A (Solar Film 1)</th>
<th>Brand A (Solar Film 2)</th>
<th>Nano Glass Coating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible Light Transmission (%)</td>
<td>88.0%</td>
<td>61%</td>
<td>66%</td>
</tr>
<tr>
<td>Total Solar Energy Transmission (%)</td>
<td>85.0%</td>
<td>48%/ 39%*</td>
<td>66%</td>
</tr>
</tbody>
</table>

Technology Features & Specifications

- Ease of application to cover large areas with complex shapes
- Visible light transmittance > 60%
- UV rejection rate of > 90%
- IR rejection rate of > 90% at 1400nm and >80% at 900nm

Disclaimer

Although due care and attention have been taken to ensure that the preparation of this material is as accurate as possible, the contents of this brochure are provided for information purposes only. Neither the Singapore Polytechnic nor the inventors offer any warranty, written express or implied, as to the accuracy of the said contents. Applicants are advised to undertake independent evaluation of the technology.