

## Customer Advice Guide

### Internal Blinds & Shades Comparison with Penjerex

There are multiple products available to reduce solar heat gain through windows, reduce internal heat loss through windows or both at the same time. This Advice Guide outlines some of the characteristics of internal window blinds and shades compared to the Penjerex window film product.

	<b>Penjerex PX 8080S</b>	<b>Internal Blinds</b>
Thermal Performance	<p>Penjerex is designed to reduce solar heat gain in summer and reduce internal heat loss in winter.</p> <p><b>Thermal Transmission Coefficient</b></p> <p>Penjerex improves internal heat loss insulation performance to 95% that of conventional double glazing and 85% performance of standard 4/12/4 double glazing. This is an improvement of approximately 44% reduction of heat loss rate of a single pane window.</p> <p><b>Solar Heat Gain</b></p> <p>Penjerex removes up to 40% of solar heat gain in summer which is a reduction of 26% over clear single glass panes.</p> <p>Heat is reflected from the window pane before it reaches the interior of the building. Better to reflect problem solar heat before having to mitigate this heat once already inside the building.</p> <p>Improves solar heat gain on tinted and double glazed windows as well.</p>	<p>Studies indicate that highly reflective internal window blinds are effective at reducing solar heat gain and reducing internal heat loss.</p> <p>Thermal efficiency of blinds and shades is highly influenced by the installation method. Studied indicate that shades that are attached with sliders at the sides are up to 2 – 3 times as efficient as those only hung from the top with a close fit on the sides. Shades definitely need to be hung inside the window frame to have any real energy efficiency effect.</p> <p><b>Thermal Transmission Coefficient</b></p> <p>A study into reducing heat loss through windows from <a href="#">Cornell university</a> suggests the following conclusions</p> <p>“A conventional roller shade mounted inside the frame with no more than 25mm gap at the sides and touching the sill will reduce heat loss by about 27% over single pane windows. By adding side tracks the efficiency may be increased to 45 percent. An inside-mounted shade with a reflective coating also may be 45 % effective.”</p> <p><b>Solar Heat Gain</b></p> <p>The <a href="#">US government Energy website</a> has information for blind energy efficiency which indicates “when completely closed and lowered on a sunny window, highly reflective blinds can reduce solar heat gain by around 45%”</p>



	<b>Penjerex PX 8080S</b>	<b>Internal Blinds</b>
Appearance	<p>Penjerex has a visual transmission rating very close to clear glass making it virtually imperceptible.</p> <p>Penjerex is applied and cut to the shape of the window pane making it ideal for non-square shape windows while having no impact on the appearance of windows from inside.</p>	<p>Internal window blinds come in a range of colours, textures to match your interior décor.</p> <p>Most importantly the blinds or shade has to be pulled over the window to start to work. To be effective these devices need to be secured tightly to the edge of the window frame to prevent air circulation around the shade surface.</p>
Installation	<p>Penjerex is installed from the interior of the building negating any need for working at heights and only requires simple low trestles and ladders.</p> <p>The window film is only 0.07 mm thick and is applied directly to the surface of the window pane.</p>	<p>Shades and blinds are attached to the internal window frame with the mechanism to raise and lower being attached to the top of the frame.</p> <p>Installation on windows is not always possible and ideally needs to be not protruding from the window frame for effective use.</p>
Durability	<p>Penjerex is a low emissivity polyester film with a pressure sensitive adhesive to fix to the glass pane surface.</p> <p>The film has a scratch resistant surface but this can be damaged by scratching with sharp objects. Using a ball point pen on the film surface can create a dent also.</p> <p>Penjerex has a 10 year replacement warranty against film discolouration and lamination failure</p>	<p>Blinds are operated up and down to cover the window surface.</p> <p>The mechanisms are designed for long use but do fail with intensive wear.</p> <p>Cleaning may be required to maintain aesthetic appeal.</p>
Condensation	<p>Penjerex window film isn't marketed to reduce condensation.</p>	<p>Blinds don't reduce condensation occurring on window surfaces but do hide this when closed</p>

