



## Pilkington Energy Advantage™ Roomside Hardcoat Low-E (a component of Windsor's Dual Low-E glazing option)

The low emissivity property of Pilkington Energy Advantage Glass pyrolytic coating is obtained by growing - with a chemical vapor deposition (CVD) process - a polycrystalline layer of tin oxide over color suppression under layers. The polycrystalline structure of the surface of the tin oxide top coat is a layer of closely packed grains. The extremely small size of the grains makes them invisible in most lighting conditions; daylight can easily pass with less than 1% alteration through this coating because each grain is actually smaller than the wavelength of visible light.

However, it is possible to discern the presence of the coating under certain lighting conditions such as when bright sunlight shines directly on partly shaded, Low-E coated glass. When looking out through the glass towards a dark shaded background, the short wavelength component (blue) of the sunlight appears slightly scattered. This gives the coating a uniform, very faint blue appearance, visible in the sunlit area. This "haze" only becomes visible when its brightness is significant relative to that of the images viewed through the glass at the same time. It should be noted that the light scattering (haze) from normal dirt, on an average plain window before cleaning, is 2 to 4 times more visible than the worst case lighting condition described above. For typical lighting on most Low-E coated windows, and for the greater part of the day, there will be no haze visible.

### **What does this mean for you and your customer?**

1. All products purchased with the Dual Low-E glazing option, use the Pilkington Energy Advantage coating on surface #4. (interior room side surface)
2. The inherent physical properties of this coating may reflect a faint blue haze under certain and specific lighting conditions.
3. These properties and the affects caused by them are not defects, but outcomes of the properties of the coating.
4. This haze effect may be visually noticeable to some customers.
5. Should customers find this visual condition objectionable, you should be aware that Windsor/Pilkington will not replace any Dual Low-E glass due to this visual condition, unless the Energy Advantage coating is found to be outside of Pilkington's manufacturing specifications.