



LOW-E COATING ORIENTATION

GENERAL GUIDELINES

- All Low-E Coatings must be on one of the interior surfaces of an insulating glass unit (#2 or 3 Surface)
- Orienting the Low-E Coating to the #2 surface reduces solar heat gain and cooling costs.
- The insulating value (u value) of a Low-E insulating unit is the same whether the Low-E Coating is on the #2 or #3 surface.
- Passive Solar Low-E Coatings, like Pilkington Energy Advantage, allow solar energy to pass through the coating to the building interior, heating the interior, and lowering heating costs.
- Solar Control Low-E Coatings, like Guardian SN-68, block high levels of solar energy, reducing cooling costs.
- Solar Control Reflective Low-E Coatings, like Pilkington Eclipse Advantage or Guardian SunGuard Series Coatings, should be oriented to the #2 surfaces.

RESIDENTIAL GUIDELINES (Generally #3 Surface in Northern U.S.)

- Because a "clear appearance" is usually desired by homeowners, Low-E Coatings on clear, rather than tinted glass substrates dominate residential installations.
- Upstate New York is a heating dominant region; a typical homeowner will pay more to heat than cool the home.
- If heating costs exceed cooling costs, place the Low-E Coating to the #3 surface to allow increased levels of solar heat gain in winter and resulting lower heat costs.
- If cooling costs exceed heating costs, orient the coating to the #2 surface.
- Larger than typical expanses of glass – particularly in south, west, or east elevations of an air conditioned residence may benefit from a #2 surface orientation.

COMMERCIAL GUIDELINES (Generally #2 Surface, #3 with uncoated Tinted Glass)

- Even in Upstate New York, reducing solar heat gain and lowering cooling costs is a priority. Commercial glass sizes are typically larger than residential sizes. Without a solar control coating or tinted glass, a large and costly air conditioning system is required to maintain occupant comfort.
- CLEAR LOW-E UNITS - Orienting the Low-E Coating to the #2 surface reduces cooling costs.
- TINTED LOW-E UNITS – Tinted Glass is always oriented as the outbound lite in an insulating unit. Tinted Glass with a Low-E Coating, like Pilkington Eclipse Advantage, should be located as the outbound lite with the coating on the #2 surface. If a non-Low-E coated glass product is used as an outbound lite for aesthetic or solar control properties, the inbound lite should be clear with the Low-E Coating oriented to the #3 surface.
- Insulating glass units with tinted lites and Low-E Coatings should be evaluated for thermal stress by using thermal stress calculator software. Heat strengthening or tempering the tinted lite will most likely be required.