

Energy Efficiency Tips

# THE DETAIL BEHIND EFFICIENCY

**From Steve Ketzer – Segment Manager Commercial Fabrications Viridian**

Builders are well aware of the regulations underpinning thermal efficiency standards, but it's still important to know how different specifications are determined and what the most important 'rules of thumb' are when you are designing or assessing a commercial or residential building.

Steve Ketzer from Viridian, says windows and glazed areas are of fundamental importance to the quality of a building's insulation characteristics.

Critical elements are as follows:

**Width of spacer in double glazing:** a 6mm space is adequate, but 12–16mm maximizes the insulation of the unit. Typically, a 12mm air gap is 10% better than a 6mm gap.

**Types of window frame:** to achieve 5 Star and more, specification of energy efficient frames will lower U values significantly.

**Type of glass in window:** tinted glass will lower the Solar Heat Gain Coefficient (SHGC), but not the U value. Low-E on 'surface 3' will typically lower the U value by up to 20%. In double glazing, the outside of the outer panel is surface #1, the inside of the outer panel is #2, the outward-facing side of the internal panel is #3, and the face that faces the interior of the room is #4. By having the Low-E coating on #3 rather than #4, the coating is protected from air movement and also from any potentially harmful cleaning. It can also better reflect some of the solar radiation that hits the window.

**Gas fill in double glazing:** using argon rather than air can improve the U value by 10 - 15%.

**Type of spacer:** selecting the appropriate spacer will improve conductivity and thermal efficiency of the window.

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