PRESS RELEASE

Comfort living

We speak to Swartland's in-house architect, Elouise Steyn, about the pros and cons of Low-E glass versus double-glazed windows.

03 May 2019, Johannesburg: Interior spaces need fresh air, light and the ability to maximise attractive outdoor views – elements that are made possible by the inclusion of windows. However, did you know that choosing the wrong windows can lead to an energy deficit of up to 30%, says Elouise Steyn, leading window manufacturer, Swartland's in-house architect. Today, it is vital to choose energy efficient windows – not only because it will make for comfortable interior spaces, but it will also save money in utility bills over a building's lifespan, and of course, with the SANS 10400 National Building Regulations, it is also a legal requirement to meet certain energy-saving criteria."

She says that when it comes to energy saving windows, the choice is usually between choosing Low-E glazing or double-glazed windows. So, which is the better choice?

What is Low-E glazing?

Low-E glazing is a treated glass that is designed to control the passage of heat. The "E" stands for emissivity, which refers to the fact that Low-E glass has an ultra-thin coating, that ensures less heat passes through the pane of glass. This coating allows light to pass through, but it blocks UV light, which usually generates heat. The result is that you require less artificial cooling and heating methods, depending on the outdoor climate, to keep the room at the desired temperature.

The main benefits of Low-E glazing comprises the fact that it is a less expensive option when compared to double-glazing, and that it can fit any standard window and improve its energy efficiency. However, the cons include the fact that it requires special cleaning instructions, as it can scratch easily. It creates a hazy effect when the sun shines through the coating, and that it doesn't have a big effect on SHGC (Solar Heat Gain Coefficient) values.

What is a double-glazed window?

Double-glazed windows are an energy efficient sealed glass unit that comprises two sheets of glass. The two sheets of glass are separated by a spacer bar, which creates a small gap between the two panes and is usually filled with an inert gas called Argon. This creates a barrier between the inside and the outside of the

window unit, and provides insulation keeping the cool air inside and the warm air outside, or vice versa.

Double-glazing is the ultimate choice in energy efficient windows – it makes interiors more comfortable by reducing heat loss in winter and heat gain in summer. As it has insulating properties, it reduces external noise levels, which is especially useful if located near a busy street or establishment. Some of the cons of choosing double-glazing include the fact, that if the seal fails, the unit fogs up between the two panes. Also, bigger window sections are not always practical as they would be too heavy. However, possibly the main drawback of double-glazed windows is that they are perceived as being expensive and at the top-end of the price spectrum. This is no longer a problem, as Swartland's new double-glazed windows are comparatively very affordable, says Elouise: "Swartland's aim is to offer double-glazed windows to the market at a very affordable price, around 40% to 50% less than what has been available in the past. This would make double-glazing approximately the same price as Low-E glass, but it will offer far better performance and longevity in the long run."

Comparing U-values and SHGC

Elouise offers some insight into two main values factors that should be taken into consideration when choosing your energy efficient windows:

- **U-values:** The typical U-Values on windows are a measurement of heat loss and the rate at which it is lost. U-Values indicate the overall performance in retaining heat and preventing it from escaping to the outside. U-Values are measured in Watts per square metre Kelvin, or W/m2 K. In simple terms, the lower the U-value number, the better the thermal performance of the window. As a general rule, double-glazed windows have much better U-values than Low-E glass. However, windows with a combination of double-gazing with Low-E glass have the best U-values. See some comparisons of glass U-Values below:
    - 4mm Clear glass – 5.88
    - 4mm Low-E Glass – 3.74
    - Clear double-glazing (4/6/4) – 3.09
    - Clear double-glazing (4/12/4) – 2.28
    - Low-E double-glazing (4/6/4) – 2.46
    - Low-E double-glazing (4/12/4) – 1.93

- **The SGHC:** The SHGC is the amount of radiation (light and heat) that is admitted through a window. SHGC is expressed as a number between 0 and 1 – the lower a window's solar heat gain coefficient, the less solar heat it transmits. Both double-glazing and Low-E glass have little effect on the SHGC value. Elouise notes that if this is a main concern on a building,

then it is better to opt for glazing that provides solar control, such as Solarvue Neutral HL for example. See the SHGC value comparisons listed below:

- 4mm Clear glass – 0.85
- 4mm Low-E Glass – 0.74
- Clear double-glazing (4/6/4) – 0.75
- Clear double-glazing (4/12/4) – 0.75
- Low-E double-glazing (4/6/4) – 0.70
- Low-E double-glazing (4/12/4) – 0.70

The verdict

Overall, double-glazing seems to be the best choice for energy efficient fenestration, concludes Elouise: "You can achieve comfort living in winter by insulating heat within the building, and in the summer, the cool air will remain inside to regulate the temperature. All you will need is some blinds or curtains to stop any heat passing through in the hot summer months. What's more is that double-glazing offer the added benefits of being more secure, and reducing any unwanted noise pollution. They are an especially attractive option if they are the same price as Low-E glazing, as they don't scratch, create a haze-like aesthetic when the sun shines through, or require any specialised cleaning procedures like Low-E glazing does."

ENDS

Released on behalf of Swartland (www.swartland.co.za) by The Line (www.theline.co.za).