PHOENIX
FENESTRATION & GLASS

ThermalBlok™ Profile
2022

Our planet has a deepening energy crisis,

and for us as South Africans we face ongoing hefty electricity price hikes despite ongoing load shedding and energy production concerns surrounding Eskom.

The building/home owner is responsible for ensuring compliance with the stipulations of the National Building Regulations.

There are three ways in which new buildings can satisfy and ensure compliance with requirements to use energy efficiently.

Firstly, the requirements of Regulation XA1 are deemed to be satisfied if new buildings and extensions of buildings are designed and constructed in accordance with SANS 10400 Part XA - Energy Usage in Buildings (SANS 10400 - XA), in terms of Regulation XA3.2 This provision incorporates SANS 10400- XA into South African building law and establishes it as the benchmark for the environmental sustainability of buildings.

SANS 10400 - XA encompasses, among other issues, energy usage and building envelope, R-values, design assumptions, requirements for floors, walls, fenestration and advanced window systems, roofing and mandatory ceiling insulation.

The standard addresses the design elements of a building by looking at the orientation of the building and the use of natural light and insulation. These measures allow for buildings to be kept cool in summer and warm in winter naturally which will reduce the amount of energy that will be consumed for heating and cooling of buildings.

The fact of the matter is that ordinary glass is responsible for up to 50% of the energy lost through your window and doors, and whilst energy efficiency can be achieved with Laminated Tinted Performance Glass, Annealed Tinted Glass, Low-Emissivity coatings, Reflective Coatings, Double Glazing/ Sealed Insulated Glass Units are by far the most effective solution.

There are basically four factors to consider when choosing the window system and glass for your project:

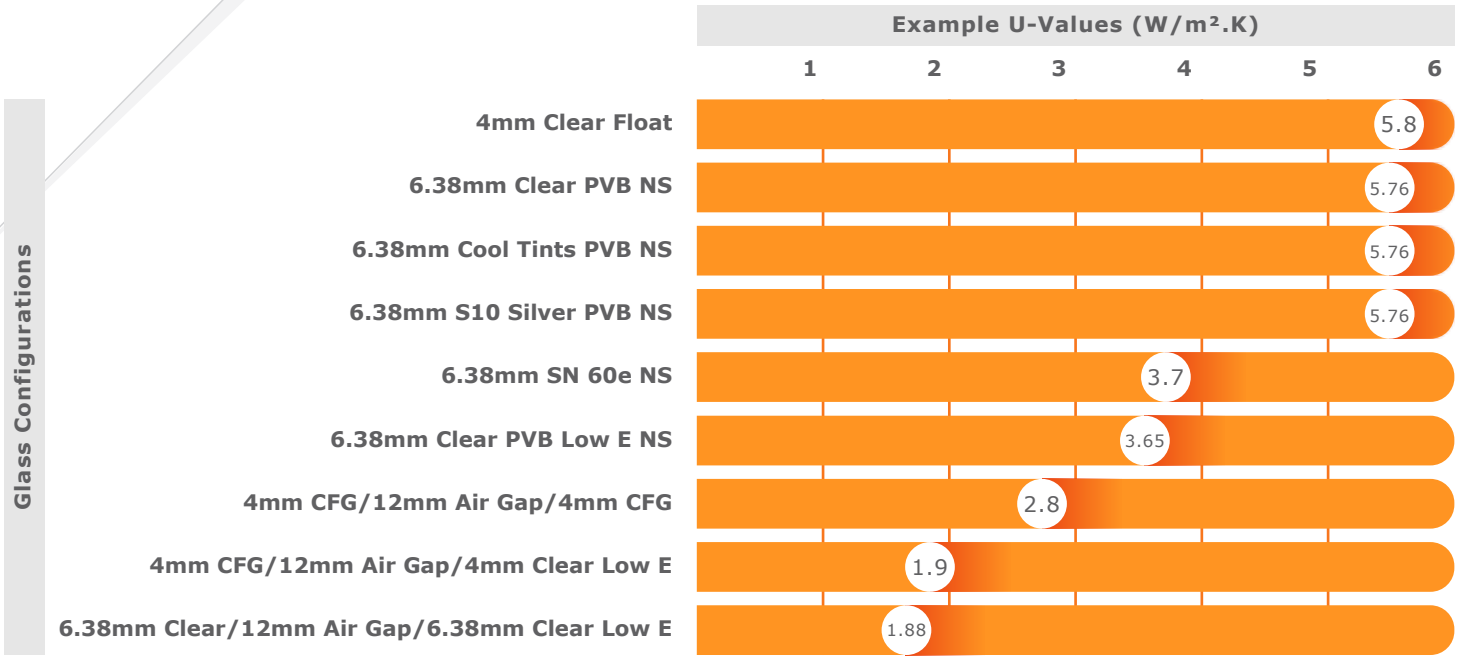
01 **U-Value:** Measures the rate of heat transfer through a product. Therefore the lower the U-Value the lower the amount of heat loss. And the better a product is at insulating a dwelling. (R-Value measures the resistance to heat loss. R-Value is a measure of conductivity.)

02 **Solar Heat Gain Coefficient:** the ratio of solar heat admitted by the glazing compared with the energy striking the outside surface of the glazing. It includes directly transmitted radiation plus indirect heat gain from re-radiation and convection of absorbed heat from the glass into the building. The lower the number, the higher the performance.

03 **Air Leakage:** Measures how much outside air comes into a home or building through a product. The lower the air leakage, the better a product is at keeping the air out.

04 **Visible Transmittance:** visible transmittance refers to the proportion of the visible spectrum that is transmitted through the glass.

By trapping a layer of dried air between two sheets of glass (prevent convection currents from forming) we achieve a superior insulating medium, which is improved if we introduce Low E glass. (Which also reduces the emission of radiant solar energy from a warm surface to a cold body or room) Under standard conditions the insulation value of the double glazing with Low E is reduced by as much as 67% in winter and 64% in summer when compared to ordinary 6.38mm laminated glass. Solar control reduces solar direct and reradiated transmission and reduces the 'panel heater' effect when the sun shines directly on the glass. So a high light transmission which is ideal but still reduces heat transmission by more than 18% under standard conditions.



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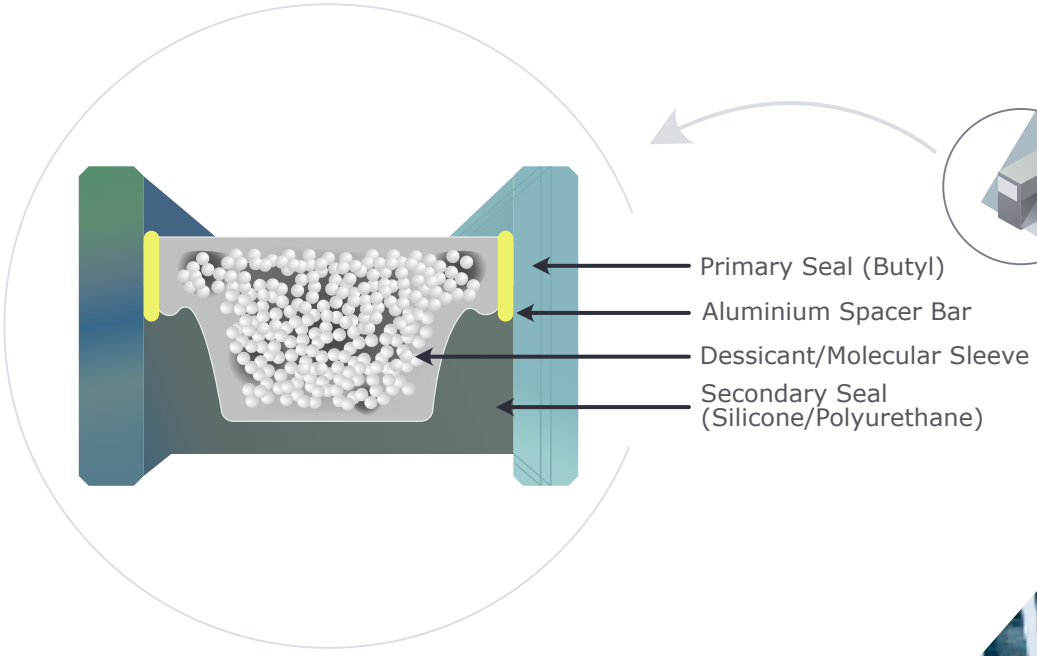
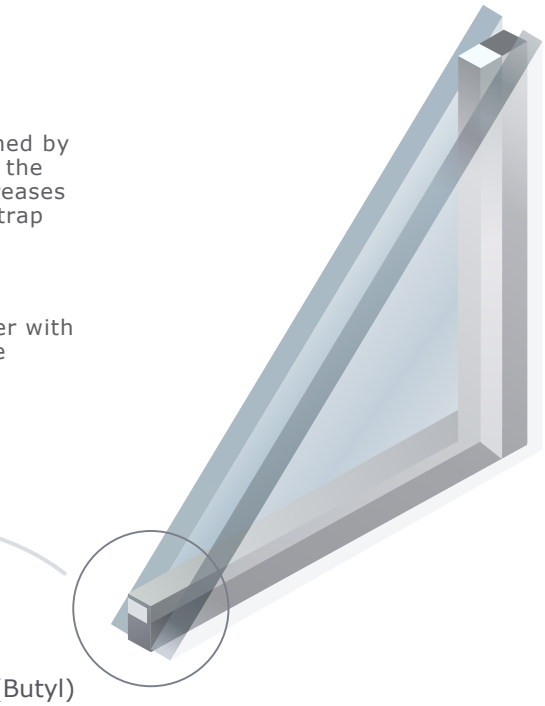
Phoenix ThermalBlok

Phoenix ThermalBlok consists of two or more panes of glass which are joined by a perforated spacer bar filled with molecular sieve/desiccant, this ensures the cavity air is kept dry. There is an added option of adding Argon which increases the performance of the DGU (Note: argon can only be dealed using PU to trap the argon, silicone isn't nearly as effective as it breathes).

Phoenix ThermalBlok uses the latest dual seal technology for enhanced performance and durability and is hermetically sealed around the perimeter with a primary seal (butyl) and a main seal of two part polyurethane or silicone depending on the glazing application.





This cavity - available in 6mm-20mm and a variety of colours - acts like a barrier and reduces heat loss and gain which enhances the comfort levels of your home/building and dramatically reduces energy consumption from a heating and cooling perspective – all year round. The benefits are numerous but more importantly you gain year round reduction in energy costs. Phoenix ThermalBlok DGU's are fitted with a breather tube/air screw which is designed to overcome travel between different altitudes, because the air screw allows for air to travel in and out of the unit thereby equalizing the pressure preventing expansion or contraction. The breather tube is then "nipped" by the installation team prior to the glass being fitted into the relevant aperture/glazing rebate - an important glazing procedure.

Advantages of using Phoenix ThermalBlok:

- Enhanced Energy Efficiency (Thermal Insulation & Solar Control)
- Enhanced security if used in conjunction with PhoenixLam
- Comfortable Living Environment
- Natural Light
- Sound Reduction
- Protection from UV which can damage furniture and carpets - must incorporate a laminated component for UV resistance
- Reduces condensation
- Aesthetic appeal
- Enhances the value of your home, from a resale point of view