

# DUO PLUS™

INSULATED GLASS UNITS

## Two Panels of Glass are Better than One



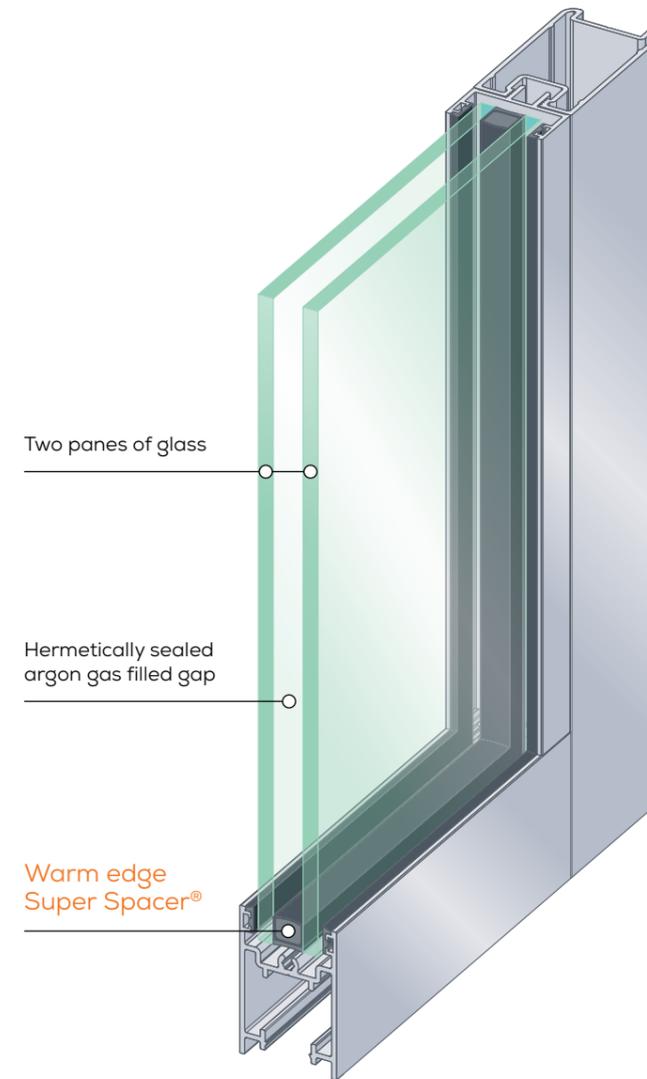
## DUO PLUS™ - Insulated Glass Units

When it comes to superior climate control, noise reduction and strength, two panels of glass are better than one. Duo Plus™ Insulated Glass Units (IGU's) or double glazed units, consist of two panes of glass bonded together by a spacer and separated by a hermetically sealed Argon gas filled space. This space or gap acts as an additional thermal barrier between the inner and outer pieces of glass, making the transfer of heat more difficult.

Duo Plus™ units feature a warm edge Super Spacer® made of an extruded, thermoset polymer structural silicone foam which delivers exceptional performance through lower conductivity than aluminium spacer units, Argon gas retention and long term durability.

### Features & Benefits:

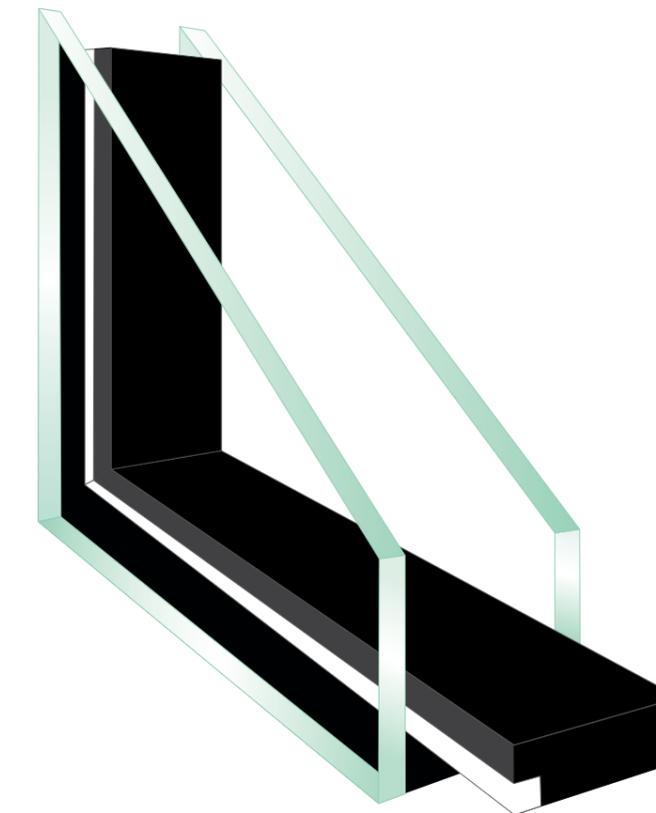
- › exceptional performance in reducing summer heat gain and winter heat loss
- › greater comfort for occupants
- › option to include Acousta™ Noise reduction and 99% UV block out glass
- › 'dual seal system' for added durability.



## DUO PLUS™

# Two panels of glass are better than one

### Providing Solutions for:



### Energy & Climate

- › Energy rated glass or laminated panels with Solar Control interlayers.

### Noise

- › Improved noise reduction using Acousta™ laminated panels.

### Safety

- › Laminated or toughened Grade 'A' Safety glass.

### Strength

- › Two panels for greater strength.

### Durability

- › Dual primary and secondary seals for durability.

### Extra Performance

- › Super Spacer® and Argon gas fill for energy performance and improved condensation resistance.

## Energy & Climate



### Less energy, more savings, better future

For improved energy efficiency with greater solar and thermal control, specify Sunergy® or SOL-R™ Low-E glass options in the IGU make-up. Alternatively, laminated glass panels with solar control interlayers can also be incorporated into Duo Plus™ units. The unique properties of laminated glass also block out up to 99% of harmful UV light.

## Noise



### Create a quiet haven

Reducing noise is better achieved by combining Duo Plus™ units with Acousta™ laminated glass panels when compared to ordinary single glass.

Acousta™ laminated glass uses an advanced, three layer system designed to decouple and disseminate sound waves for superior sound damping performance. This patented system target sounds in the 1000 – 3000 Hz range which is the “most sensitive range of human hearing” that allows the most irritating of sounds to penetrate windows.

## Safety & Security



### Security with a view

Duo Plus™ units can be made with either Grade ‘A’ Toughened or Laminated safety glass. Two panels of glass also make it harder to breach the window or door opening compared to ordinary single glass, but for greater security, build laminated panels with extra thick 1.52mm PVB or SentryGlas® interlayers.

## Structural & Strength



### Meeting the demands for bigger glass panels

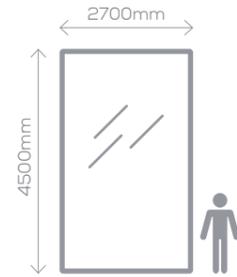
The air space in IGU’s in conjunction with two panels of glass act as a ‘shock absorber’ or ‘spring’ allowing higher wind loads to be applied compared to equivalent single glass thickness. This feature also allows for larger areas to be glazed when human impact Standards are adhered to.

Furnaced Laminated Glass in the form of either Toughened or Heat Strengthened Laminated panels can also be made up into Duo Plus™ units. These glass types offer greater strength, safety and security over ordinary single glass.

## Product Specifications

Points to consider when specifying a Duo Plus™ IGU. See below with Table 1 for more information or simply ask our staff for advice.

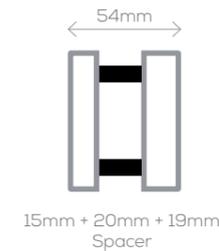
### Maximum Size



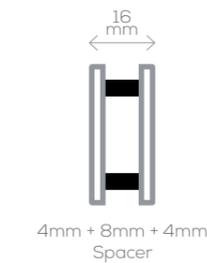
Maximum size is 4500mm x 2700mm but subject to limitations with glass, toughening, laminating sizes, human impact and wind load standards.

**Minimum Size**  
350mm x 180mm

### Overall Max Thickness



### Overall Min Thickness

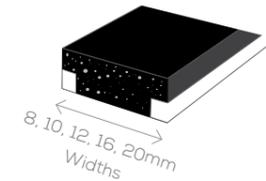


### Glass Colour or Type

- Clear
- Tinted
- Energy
- Structural
- Noise
- Decorative

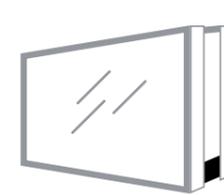
Many combinations are possible for either colour or building requirements.

### Spacer or Gap Width



**Secondary Seal**  
Default is Polysulphide. Specify Silicone seal if edges of IGU are exposed.

### Build Up or Make Up



This refers to the various combinations of glass that make-up the finished product.

Duo Plus IGU <sup>1</sup>	U-value	SHGC	VLT%
Single Glass comparison 4mm Clear	5.9	0.84	89
4mm SOL-R™ Clear 73 / 12mm Argon / 4mm Clear	1.7	0.65	74
6mm SOL-R™ Clear 70 / 12 Argon / 6mm Clear	1.7	0.61	72
4mm Sunergy Neutral / 12 Argon / 4mm Clear	1.9	0.50	60
6mm Sunergy Neutral / 12 Argon / 6mm Clear	1.8	0.50	61
6mm Sunergy Grey / 12 Argon / 6mm Clear	1.8	0.32	30

\*Data shown represents glass only values.  
<sup>1</sup>LowE and Sunergy coating on surface #2.

U-Value  
A measure of the thermal insulation of the glass and expressed as watts per square metre. The lower the number the better the performance of the glazing.

SHGC  
Refers to Solar Heat Gain Co-efficient and is a common measure used in regards the cooling of the building. The lower the number, the more efficient the glass in reducing the sun's direct energy impact through the glass.

VLT %  
Refers to the % Visible Light Transmittance. Simply a measure of the amount of natural daylight the glass allows.



## Advanced Technology

National Glass has installed the latest advanced machinery for manufacturing Duo Ultra™ Insulated Glass Units, seamlessly integrated with production lines including the robotic application of spacer and sealants for a high quality finish.



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