



All together better

direct

training

## Welcome to the product training Section 3 – Glass units

### 1. Unit configuration

*Glass units are manufactured as sealed units using two panes of glass*

*Glass sealed units are 28mm thick (usually 4mm glass and a 20mm space)*

*The diagram shows how the unit is made*

**Outside pane**  
*Low iron glass*

**Inside the unit**  
*Argon gas*

**Inside pane**  
*Low E glass*

*The unit is made by using “Super spacer” used to bond the two panes of glass together*



*This window is one of the most energy efficient windows on the market achieving a rating of “A + 4”*

## The Plan A Window A-Rating made simple.

### CLEARVISION

Sunlight, short-wave radiation is transmitted through the Clearvision Low Iron Glass (outside panel) maximising solar gain, giving extra warmth. Free heat!



Thermally efficient uPVC and

### EDGETECH

Super Spacer® Warm Edge Spacer Bar and

### ARGON GAS

Gas filled cavities

all dramatically reduces heat losses through heat transference

### PLANIBELA

Low-E Glass (inside panel) Reflects long wave heat radiation back into your home. Retaining your free heat.

Therefore the Plan-A window becomes a free energy supplier!



*This super spacer is a very special none metallic material and is much more thermally efficient than conventional aluminium spacer bar*

Energy Window	
Direct Window Co Eurocell Eurologik 70 PVC U Casement Plan A – Rated	
	<b>A</b>
Energy Index (kWh/m <sup>2</sup> /year) <small>(Energy Index certified by BRC and based on UK standard window. The actual energy consumption for a specific application will depend on the building, the local climate and the indoor temperature.)</small>	<b>4 UK</b>
The climate zone is:	<b>UK</b>
Thermal Transmittance (U <sub>frame</sub> )	1.5 W/m <sup>2</sup> .K
Solar Factor (g <sub>frame</sub> )	0.45
Effective Air Leakage (L <sub>frame</sub> )	0.00 W/m <sup>2</sup> .K
	Reg. No.: 2070 M013 www.bfrc.org
<small>This label is not a statutory requirement. It is a voluntary label provided as a customer service to allow consumers to make informed decisions on the energy performance of competing products.</small>	

## 2. Leading – basic layouts

Lead can be applied to the surface of the glass to create various design features, this process is known as decorative glass overlay

The choices for lead patterns are endless and any special design can be achieved

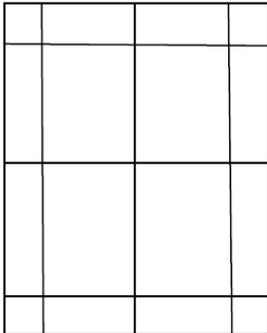
The most popular choices for leading are “square” or “diamond”



Square and diamond leaded units will be manufactured according to a standard grid pattern

The size for the standard grid patterns are 120mm wide by 200mm high for both diamonds and squares

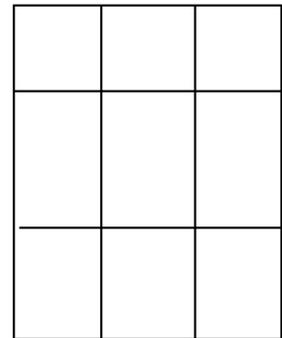
The eventual lay out will be determined at the time of manufacture



Lead lined central

The glass leading operative will select the most aesthetically pleasing layout. This will consider all the windows being ordered as well as the number and size of panes in each window.

The circumstances will be different on each occasion



Grid lined central

The basic layout options are to align the leading lines centrally or to align the grid pattern centrally

The layout will usually be set on the largest pane first; the other panes will be then be set out to line through with the first

### Location of lead

The lead can be applied to either “one side” or “two sides” of the glass

If “two sides” are selected the lead will always be applied to both sides of the pane of glass which is to the outside of the house

If lead is specified to “one side” it will still be applied to the pane which is to the outside of the house but could be either inside the unit or to the outside of the unit. The customer’s choice will need to be indicated on the order form

### Lead choices

The lead is available in different options and needs to be specified. There is a choice of width:

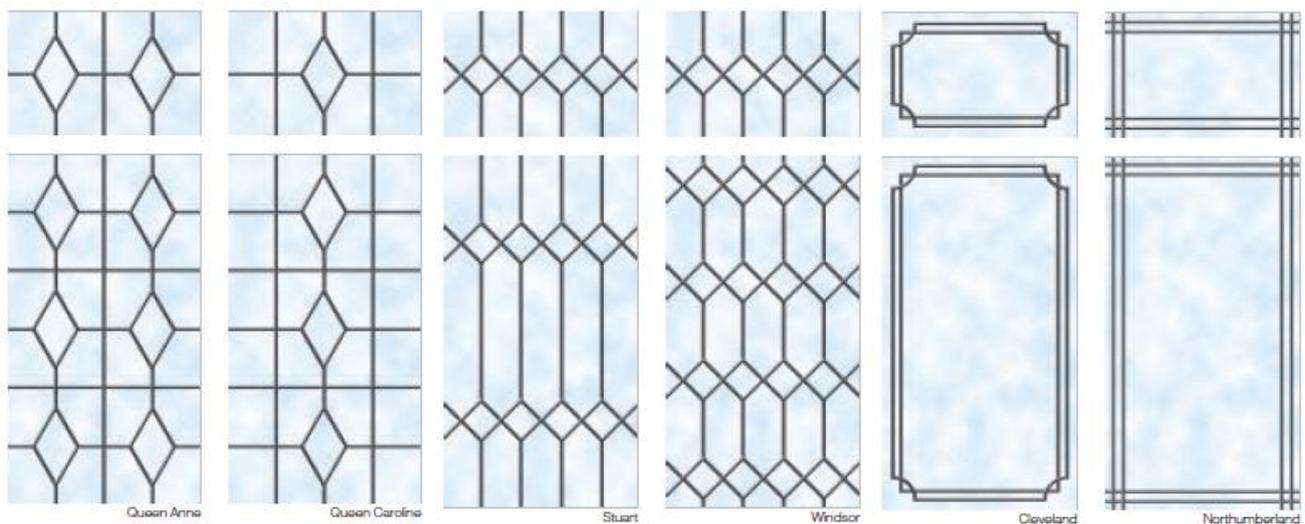
- 6mm thick
- 9mm thick

There is also a choice of colour being

- Silver
- Antiqued
- Gold

**If the customer has any specific preference this must be included with the order or the leading will be done as stated above**

### 3. Leading – other layouts and specials



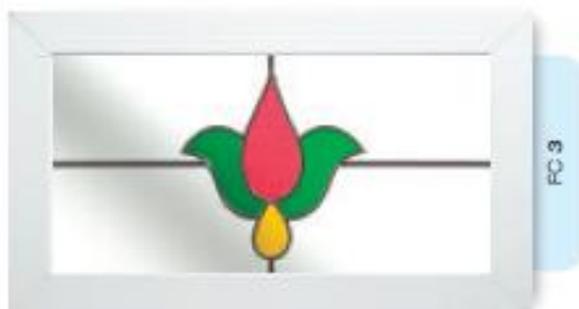
Special leading designs are available examples are shown here

It will be necessary to provide detailed information to enable the units to be produced to the customer’s requirements

## 4. Coloured films

*Coloured film can be applied to units in conjunction with the lead. The varieties of colours and designs that can be produced are endless*

*These designs are often used in doors, side panels and top lights, specifically in bays*



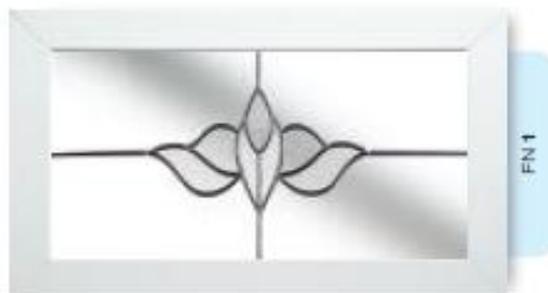
*They can be specific designs of the customer or can be selected from the catalogue provided on this website "Decorative options for doors, windows and fanlights"*

*Each design has a code and this can be used to facilitate easy and accurate ordering*

*In addition to colours there are a range of textured glass effects (as shown opposite)*

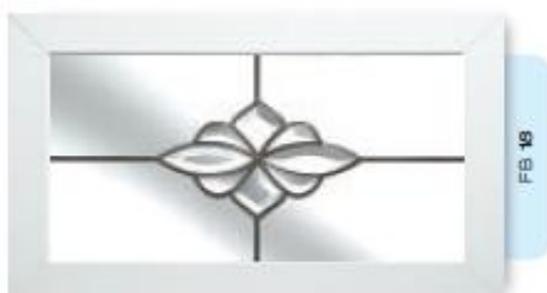
*Colours chosen from the online catalogue will naturally vary and cannot be expected to be an exact colour match*

*Where exact colour matches are required it will be necessary to contact our helpline, where you can order sample swatches or the colour choice available*



## 5. Bevels

*Glass leaded units also have the option of adding bevels to the glass*



*The bevels create a very attractive effect and are available in limitless design options*

*Please see the catalogue available on this website "Decorative options for doors, windows and fanlights"*

## 6. Backing glass options

*Glass is available in all popular designs as shown*

*Patterned glass will be used in a sealed unit as the inside pane of glass*

*They are available in differing levels of obscurity depending on the pattern chosen*

*For a glass pattern booklet please contact our helpline*

*Alternatively Pilkington have a very useful interactive web page showing glass patterns and can be found following the link below*

<http://www.pilkington.com/pilkington2004/both/applications/productdirectory/flash/textureglass.html>



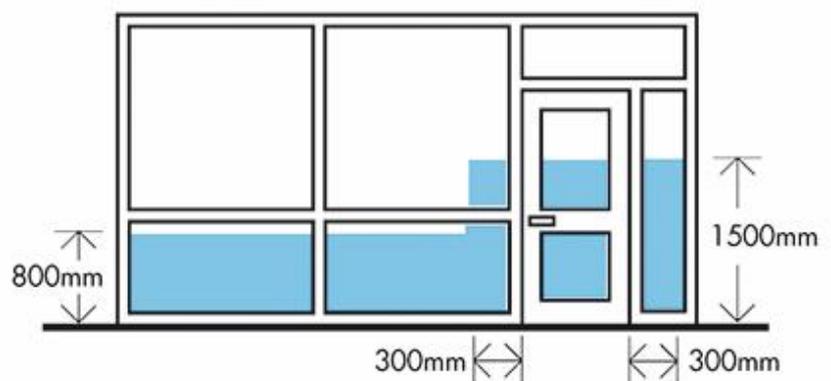
## 7. Safety glass

*In certain locations within a building it is a requirement of building regulations to install safety glass*

*Safety glass is glass that will break safely on impact and reduces the risk of injury*

*There are two types of safety glass:*

- **Laminated** - made up two sheets of glass bonded together with a membrane between. This membrane holds the glass together when broken preventing sharp edges being exposed
- **Toughened** – made by heating a sheet of glass to a very high temperature before rapidly cooling. If broken the treated glass will shatter in hundreds of small fragments without sharp edges



*In all normal installation safety glass will always be supplied toughened*

*Safety glass will be required (see shaded areas above) for example:*

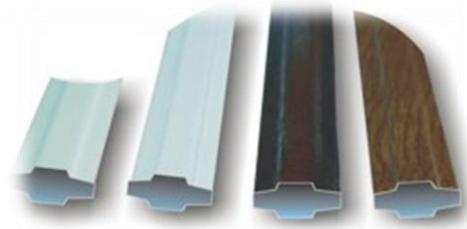
- *In all doors (below 1500mm)*
- *Any side panel (less than 300mm from the door)*
- *Any glass below 800mm (measured from finished floor level)*

## **8. Georgian fret and astragal bar**

*Astragal bar & Georgian fret provides a decorative feature which can be incorporated into any double glazed unit for windows or doors*

*The resulting window can give an appearance from the Victorian or Georgian periods*

*Modern Georgian bar emulates the style of the period without the need for individual units of glass*



*Available as Georgian fret (between the panes) or Astragal glazing bars (externally mounted just like real wood)*

*Both options are available in differing bar widths 18mm and 25mm*

*Colour options include oak, rosewood and white*

*Unlike leading Georgian bar windows are divided equally to*

*provide a pattern of squares of equal size. The largest unit in a window will be split equally, this grid will then line through into surrounding units (which will not then have equal sized squares)*

*Georgian fret layouts will be determined to provide the most pleasing aesthetic. However this is a matter of opinion as there are no rules. Any customer having a specific preference should indicate this on the order form*

## **8. Scratches**

*It is virtually impossible to manufacture glass which is 100% free from all marks and scratches. All manufacturers adopt the standard criteria issued by Pilkington, a copy is available on this website "GGF Visual quality standard of glass"*

## **9. Condensation**

*Condensation has recently been a problem occurring on the outside of the glass sealed unit. This is a recent problem and is associated with the high quality of glass unit supplied*

*A full explanation is available on the website "Pilkington condensation on exterior of glass unit"*

## **10. Guarantee**

- *Hardware 1 year*
- *Window (profile and manufacture) 5 years*
- *Glass 5 Years*