



Pilkington **Spacia**[™] – revolutionary vacuum glazing

The width of single glazing

The warmth of double glazing



Pilkington **Spacia**[™] Revolutionary vacuum glazing solution

Pilkington **Spacia**[™] vacuum glazing

Advanced Pilkington **Spacia**[™] technology is the World's first commercially available 'Vacuum Glazing'. It provides a similar level of energy efficiency as modern double glazing, but in a unit that is typically only a quarter of the thickness. This brings a new degree of thermal performance to older buildings, and opportunities for thin glazing in new buildings. Pilkington **Spacia**[™] offers a real solution to the problem of balancing historical preservation with modern comfort and environmental requirements. It may even allow the use of the original frames as well as authentic copies and in most cases, can be used in secondary glazing applications.

The importance of energy-efficient glazing

Advances in technology have made windows a significant contributor to the energy efficiency of new homes. Current restrictions, which were put in place to preserve the character of the nation's buildings, in some circumstances prevent the improvement of thermal efficiency by not permitting upgrading from single glazing. So, whilst these properties look appealing, they carry a heavy price in terms of reduced internal comfort levels, high heating costs and carbon footprint. Pilkington **Spacia**[™] vacuum glazing can provide a huge step change



in window energy efficiency in older properties without sacrificing the style and appearance of the window frames.

Protection cap

The vacuum creation process in Pilkington **Spacia**[™] results in an extraction point in one of the panes, located 50 mm from the glass edge. This point is covered by a small permanent cap (12 mm diameter), which must remain on the glass surface and should be glazed towards the inside of the building. You can choose to have the cap positioned in any corner of the pane providing this is made clear prior to the order being placed.

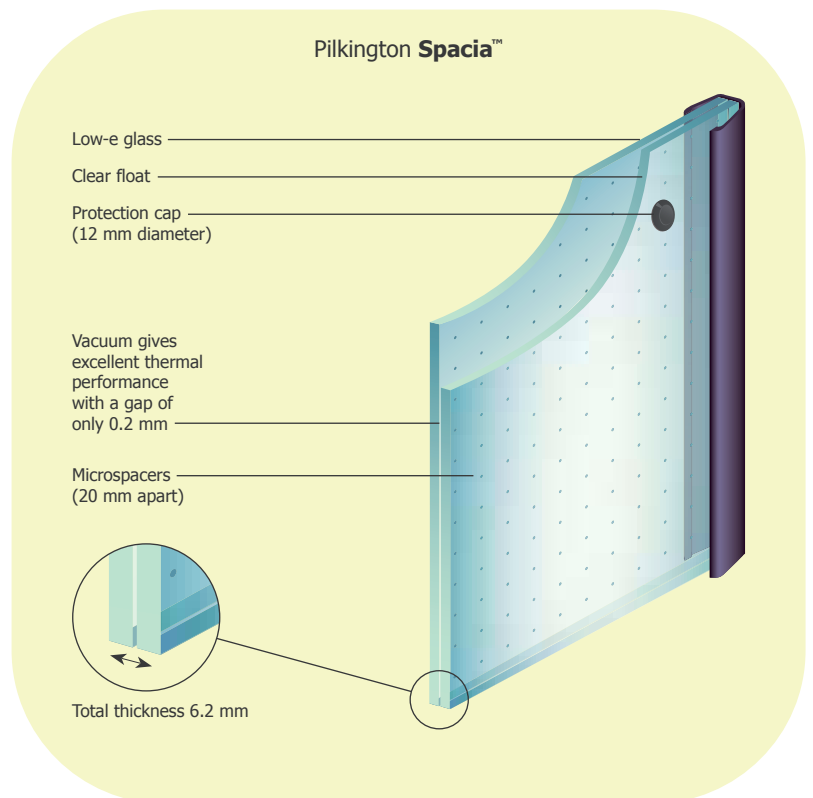
Image courtesy of Gadd Properties Ltd.





How it works

Pilkington **Spacia™** vacuum glazing consists of an outer pane of low-emissivity glass and an inner pane of clear float glass, separated by a micro spacer grid of small pillars each measuring just 0.5 mm diameter, set 20 mm apart, which are robotically positioned, with 'intelligent' camera checking. This grid ensures that the two glass panes are kept a fixed distance apart. The edges are welded to achieve a hermetic seal. Air is extracted to create a vacuum via the extraction point, rather than being air or gas filled. The result is an excellent thermal performance from a unit that is only slightly thicker than single glass.



A new level of performance for older buildings

Pilkington **Spacia™** provides similar energy efficiency performance as a standard double glazed unit containing a low-emissivity glass, such as Pilkington **K Glass™** but in a much thinner profile. It is therefore perfectly suited for use in original, refurbishment or new thin profile frames, allowing the property to maintain its original appearance.

Pilkington **Spacia™** provides a cost-effective method of improving the energy efficiency of older properties where glazing choice is restricted, or where the original frames are a desirable feature.

- Five times better thermal insulation than single glazing, helps to reduce heat loss from the property
- Suitable as a replacement for single glazing in original frames, to retain the appearance of older traditional buildings
- Suitable for other applications where use of thinner, low-weight glazing is desirable, such as sliding box sashes
- 10 year warranty with an even longer life expectancy
- Can be used in secondary glazing applications for enhanced thermal performance
- Pilkington **Spacia™** Cool a solar control version, providing medium solar control, and a measured U value of 0.9 W/m²K
- Reduced interior noise levels of R_w (C; C_{tr}) 35 (-1;-3) dB when compared to 29 (-2;-3) dB for 4 mm single glazing
- Greater internal comfort, as cold spots close to the window are reduced
- Internal condensation risk levels are significantly reduced when compared to single glazing
- Compatible with most silicone sealants and a broad range of putties for a traditional finish
- Can be leaded to match traditional designs
- Face applied bead can be used to mimic existing Georgian designs if one large pane is preferred to using several small panes
- A range of non-rectangular shapes, for flexibility with original frames
- A sandblasted version is available where privacy is required
- Proven solution; successfully used in Japan for over a decade
- Large maximum sizes to accommodate most glazing areas
- Improves energy efficiency, reduces carbon emissions and your heating bills
- Where there is a risk of overheating in the summer, there is also a solar control version, Pilkington **Spacia™** Cool. Providing medium performance solar control, and a U value of 0.9 W/m²K

Image courtesy of Lumen Rooflight Ltd.



Pilkington **Spacia™** – technical data

Product	Nominal thickness [mm]	Light Transmittance	Light Reflectance	Centre Pane U-value U _o [W/m ² K]	Solar		Total Solar Heat Transmittance (g value)
					Direct Transmittance	Reflectance	
6 mm Pilkington Spacia™	6.2 ± 0.7	0.78	0.13	1.1	0.62	0.17	0.67
Traditional Glazing options							
4 mm Pilkington Optifloat™ Clear	4	0.90	0.08	5.8	0.85	0.08	0.87
4 mm Pilkington Optifloat™ Clear / 16 mm air / 4 mm Pilkington K Glass™	24	0.75	0.18	1.7	0.62	0.16	0.73
Single Glazing							
Pilkington Spacia™ Cool	6.2	0.70	0.23	0.9	0.48	0.34	0.53

Max size: 2400 mm × 1350 mm Min size: 350 mm × 200 mm. Sandblast max size: 1800 mm × 1200 mm.

The above table is determined in general accordance with EN 410 and EN 673 with the exception of the U value for Pilkington **Spacia™** which has been measured in accordance with EN 674.

Image courtesy of AM Joinery.



This publication provides only a general description of the products. Further, more detailed, information may be obtained from your local supplier of Pilkington products. It is the responsibility of the user to ensure that the use of these products is appropriate for any particular application and that such use complies with all relevant legislation, standards, codes of practice and other requirements. To the fullest extent permitted by applicable laws, Nippon Sheet Glass Co. Ltd. and its subsidiary companies disclaim all liability for any error in or omission from this publication and for all consequences of relying on it. Pilkington, "Spacia", "Optifloat" and "K Glass" are trade marks owned by Nippon Sheet Glass Co. Ltd, or a subsidiary thereof.

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