

Pilkington **energiKare™** Triple and Pilkington **Insulight™** Triple

Low window U-values



Adding an extra pane to an Insulating Glass Unit (IGU) adds greater flexibility to the range of the products allowing greater choice and performance. By using Spectrum Online you can select the performance characteristics that suit you. There are product combinations to meet most requirements in terms of thermal insulation, Window Energy Rating (WER) and overall energy efficiency. Examples of Pilkington high performance specifications to achieve low U-values are;

Typical PVCu Framing with Thermal Insert¹

Product	Light		Solar	U-value (Centre pane)	Indicative Window U-value ² Aluminium Spacer (calculated result)	Indicative Window U-value ² Warm Edge Spacer (calculated result)
	Transmittance	Reflectance	g value	W/m ² K		
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington Optitherm™ S3 T / 16 mm argon / 4 mm Pilkington Optitherm™ S3	0.73	0.17	0.55	0.6	1.13	0.94
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ S T / 16 mm argon / 4 mm Pilkington K Glass™ S	0.71	0.15	0.64	0.6	1.16	0.99
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ OW T / 16 mm argon / 4 mm Pilkington K Glass™ OW	0.67	0.25	0.69	0.8	1.30	1.13

Typical Softwood Timber Framing¹

Product	Light		Solar	U-value (Centre pane)	Indicative Window U-value ² Aluminium Spacer (calculated result)	Indicative Window U-value ² Warm Edge Spacer (calculated result)
	Transmittance	Reflectance	g value	W/m ² K		
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington Optitherm™ S3 T / 16 mm argon / 4 mm Pilkington Optitherm™ S3	0.73	0.17	0.55	0.6	1.18	0.98
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ S T / 16 mm argon / 4 mm Pilkington K Glass™ S	0.71	0.15	0.64	0.6	1.21	1.01
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ OW T / 16 mm argon / 4 mm Pilkington K Glass™ OW	0.67	0.25	0.69	0.8	1.35	1.16

Typical Steel Framing¹

Product	Light		Solar	U-value (Centre pane)	Indicative Window U-value ² Aluminium Spacer (calculated result)	Indicative Window U-value ² Warm Edge Spacer (calculated result)
	Transmittance	Reflectance	g value	W/m ² K		
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington Optitherm™ S3 T / 16 mm argon / 4 mm Pilkington Optitherm™ S3	0.73	0.17	0.55	0.6	1.58	1.51
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ S T / 16 mm argon / 4 mm Pilkington K Glass™ S	0.71	0.15	0.64	0.6	1.61	1.55
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ OW T / 16 mm argon / 4 mm Pilkington K Glass™ OW	0.67	0.25	0.69	0.8	1.79	1.72

Typical Aluminium Framing¹

Product	Light		Solar	U-value (Centre pane)	Indicative Window U-value ² Aluminium Spacer (calculated result)	Indicative Window U-value ² Warm Edge Spacer (calculated result)
	Transmittance	Reflectance	g value	W/m ² K		
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington Optitherm™ S3 T / 16 mm argon / 4 mm Pilkington Optitherm™ S3	0.73	0.17	0.55	0.6	1.76	1.46
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ S T / 16 mm argon / 4 mm Pilkington K Glass™ S	0.71	0.15	0.64	0.6	1.80	1.50
4 mm Pilkington Optiwhite™ E / 16 mm argon / 4 mm Pilkington K Glass™ OW T / 16 mm argon / 4 mm Pilkington K Glass™ OW	0.67	0.25	0.69	0.8	1.94	1.64

Further options for Pilkington **energiKare™ Triple** and Pilkington **Insulight™ Triple**

Construction options using krypton gas

Product	Light		Solar	U-value (Centre pane)
	Transmittance	Reflectance	g value	W/m²K
4 mm Pilkington Optiwhite™ E / 12 mm krypton / 4 mm Pilkington K Glass™ S T / 12 mm krypton / 4 mm Pilkington K Glass™ S	0.71	0.15	0.64	0.5
4 mm Pilkington Optiwhite™ E / 12 mm krypton / 4 mm Pilkington K Glass™ OW T / 12 mm krypton / 4 mm Pilkington K Glass™ OW	0.67	0.25	0.69	0.7
4 mm Pilkington Optiwhite™ E / 12 mm krypton / 4 mm Pilkington Optitherm™ S3 T / 12 mm krypton / 4 mm Pilkington Optitherm™ S3	0.73	0.17	0.55	0.5

Construction option for noise reduction

Product	Light		Solar	U-value (Centre pane)	Noise Reduction dB R _w (C;Ctr)
	Transmittance	Reflectance	g value	W/m²K	
8.8 mm Pilkington Optiphon™ / 12 mm krypton / 6 mm Pilkington Optitherm™ S3 T / 12 mm krypton / 10.8 mm Pilkington Optiphon™ Therm S3	0.66	0.16	0.46	0.5	48(-3;-8)

In comparison IGUs constructed with three panes of 4 mm glass and two 16 mm argon filled cavities provide an acoustic performance of 32(-1;-5) R_w(C;Ctr). A 3 dB difference is a barely noticeable improvement. 5 dB is a clearly noticeable improvement. 10 dB is a halving of the noise.

Notes:

- 1 The performance values for triple-glazed units shown in the tables are based on the average performance of a wide range of profiles within each frame material group. Detailed analysis may give results that may be better in some cases and worse in others.
- 2 All WER scores are based on several simulations across a range of products provided by Build Check Ltd. Pilkington **Insulight™ Triple** can be used to achieve passiv haus standards of performance when fitted into a suitable frame and installed by the approved method.
- 3 The centre pane is toughened on all Pilkington **Insulight™ Triple**-glazed units as standard, to eliminate the risk of thermal breakage.
- 4 These calculations are based on median values from a range of frames and as such could be worse or better depending on the result of the real calculation.
- 5 The cavity between the panes and the gas fill both have an effect on the WER score of the IGU. Please refer to Pilkington Spectrum online for common cavity and gas options by using our website www.pilkington.com/spectrum.
- 6 The performance data above has been determined in accordance with EN 410 and EN 673.

This publication provides only a general description of the product. Further, more detailed information may be obtained from your local Pilkington Building Products supplier. It is the responsibility of the user to ensure that the use of this product is appropriate for any particular application and that such use complies with all relevant legislation, standards, code 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.



CE marking confirms that a product complies with its relevant harmonised European Norm.
The CE marking label for each product, including declared values, can be found at www.pilkington.com/CE



PILKINGTON
NSG Group Flat Glass Business

Pilkington Building Products - UK
Prescot Road, St Helens, WA10 3TT United Kingdom
Telephone 01744 692000 Fax 01744 692880
pilkington@respond.uk.com
www.pilkington.co.uk