

Pilkington **Planar**™ System Information

Pilkington **Planar**™ Laminated Insulating Glass Units (IGUs)

Pilkington **Planar**™ Laminated IGUs

Performance of typical combinations with clear interlayer

Pilkington Toughened and Heat Soaked Glass Outer Leaf	Pilkington Heat Strengthened Glasses forming Laminated Inner Leaf	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U _g -value [W/m ² K]	R _w -value [dB]
Pilkington Optifloat™ Clear	Pilkington Optifloat™ Clear						
10 mm	6 mm + 6 mm	0,78	0,14	0,69	0,79	2,6	42
12 mm	6 mm + 6 mm	0,77	0,14	0,67	0,77	2,6	41
15 mm	6 mm + 6 mm	0,76	0,14	0,65	0,75	2,5	42
10 mm Pilkington Planar ™ Sun 60/27	6 mm + 6 mm	0,57	0,16	0,27	0,31	1,3	42
10 mm Pilkington Planar ™ Sun 62/29	6 mm + 6 mm	0,59	0,09	0,29	0,33	1,3	42
10 mm Pilkington Suncool ™ 70/40	6 mm + 6 mm	0,70	0,10	0,42	0,48	1,3	42
10 mm Pilkington Suncool ™ 70/35	6 mm + 6 mm	0,67	0,15	0,36	0,41	1,3	42
10 mm Pilkington Suncool ™ 66/33	6 mm + 6 mm	0,64	0,16	0,35	0,40	1,3	42
10 mm Pilkington Suncool ™ 50/25	6 mm + 6 mm	0,48	0,18	0,27	0,31	1,3	42
Pilkington Optifloat™ Clear	Pilkington K Glass™ & Pilkington Optifloat™ Clear						
10 mm	6 mm + 6 mm	0,72	0,17	0,67	0,77	1,6	42
12 mm	6 mm + 6 mm	0,71	0,17	0,65	0,75	1,6	41
15 mm	6 mm + 6 mm	0,71	0,17	0,63	0,72	1,6	42
Pilkington Optifloat™ Clear	Pilkington Optitherm™ S1 Plus & Pilkington Optifloat™ Clear						
10 mm	6 mm + 6 mm	0,66	0,22	0,45	0,52	1,3	42
12 mm	6 mm + 6 mm	0,65	0,21	0,45	0,52	1,3	41
15 mm	6 mm + 6 mm	0,65	0,21	0,44	0,51	1,2	42
Pilkington Optiwhite™	Pilkington Optiwhite™						
10 mm	6 mm + 6 mm	0,83	0,15	0,79	0,91	2,6	42
12 mm	6 mm + 6 mm	0,83	0,15	0,79	0,91	2,6	41
15 mm	6 mm + 6 mm	0,82	0,15	0,78	0,90	2,5	42
10 mm Pilkington Planar ™ Sun 60/27 OW	6 mm + 6 mm	0,60	0,16	0,28	0,32	1,3	42
10 mm Pilkington Planar ™ Sun 62/29 OW	6 mm + 6 mm	0,63	0,10	0,30	0,34	1,3	42
10 mm Pilkington Suncool ™ 70/40 OW	6 mm + 6 mm	0,74	0,10	0,44	0,51	1,3	42
10 mm Pilkington Suncool ™ 70/35 OW	6 mm + 6 mm	0,72	0,16	0,38	0,44	1,3	42
10 mm Pilkington Suncool ™ 66/33 OW	6 mm + 6 mm	0,68	0,17	0,37	0,43	1,3	42
10 mm Pilkington Suncool ™ 50/25 OW	6 mm + 6 mm	0,51	0,19	0,28	0,32	1,3	42
Pilkington Optiwhite™	Pilkington K Glass™ OW & Pilkington Optiwhite™						
10 mm	6 mm + 6 mm	0,77	0,18	0,76	0,87	1,6	42
12 mm	6 mm + 6 mm	0,77	0,18	0,75	0,86	1,6	41
15 mm	6 mm + 6 mm	0,76	0,18	0,75	0,86	1,6	42

* Using PVB Interlayer

Please note that these are a selection of Solar Control glasses within the range and the performance data supplied is indicative only and can vary subject to the substrate used.

Technical data has been calculated according to BS EN 410 and BS EN 673. The above table has been updated to take into account the declared values of radiation and thermal properties required for CE Marking. R_w Value is indicative for PVB interlayer product only and will be subject to minor variations dependent upon the size of the glass panels and the number of fittings required.

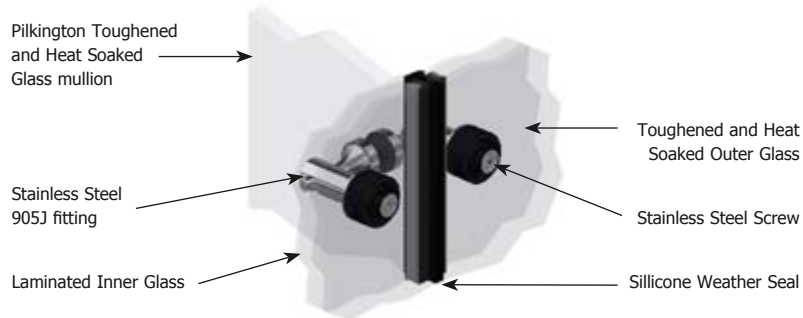
Pilkington **Planar**™ Laminated IGUs – Glass Types

Glass Type	6 mm	10 mm	12 mm	15 mm	19 mm	Notes
Pilkington Optifloat ™ Clear	+	+	+	+	+	
Pilkington Optifloat ™ Bronze	+	+				
Pilkington Optifloat ™ Grey	+	+				
Pilkington Optifloat ™ Green	+	+				
Pilkington Suncool ™ 70/40	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Suncool ™ 66/33	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Suncool ™ 50/25	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Optiwhite ™	+	+	+	+	+	
Pilkington Suncool ™ 70/40 OW	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Suncool ™ 66/33 OW	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Suncool ™ 50/25 OW	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Arctic Blue ™	+	+				
Pilkington Activ ™ Clear	+	+				
Pilkington Activ ™ Blue	+	+				
Pilkington K Glass ™	+					
Pilkington K Glass ™ OW	+					
Pilkington Optitherm ™ S1	+	+	+			Campaign Product. Must be forecast in advance of manufacturing
Pilkington Screen Printed Glass	+	+	+	+	+	Maximum screened area 2400x4500 mm (See enclosed data sheet for further details)

Notes

Pilkington **Planar™** Laminated IGUs are available with a selection of interlayers including PVB and Kuraray™ SentryGlas®. Silicone perimeter seals must be compatible with Pilkington Laminated Safety Glass. A wide range of glass combinations and a choice of clear, translucent and coloured interlayers are available with laminated glasses. Please refer to Pilkington Architectural for advice. In line with regulations applicable in many European countries, Pilkington Architectural recommend the use of laminated glass in overhead or sloping overhead glazing.

905 Fitting to Double Glazed Pilkington Planar™ Laminated IGUs



Specification - Pilkington Planar™ Laminated IGUs

COMPOSITION

Pilkington **Planar™** Laminated IGUs are manufactured from an outer pane of Pilkington toughened and heat-soaked glass and one laminated inner glass (typically comprising 6 mm or 8 mm glasses). The use of heat strengthened or toughened glass in the laminate is dependent on the exact interlayer specification.

OUTER GLASS

Outer glass to conform to single Pilkington **Planar™** specification.

INNER COMPONENT GLASSES

Thickness:	6 mm	±0.2 mm
	8 mm to 12 mm	±0.3 mm

Pilkington **Planar™** Laminated IGUs

Air space:	16 mm	±1 mm
Depth of silicone seal:	Minimum 4 mm	
Aluminium spacer depth:	7 mm	
Sight line of unit edge seal:	12 mm min.	20 mm max.
Spacer colour:	Black or Natural	
Laminated interlayer:	1.52 mm or 2.28 mm	
There may be a step on each side up to 3 mm		
Overall unit thickness:	±2 mm tolerance	

GLASS SIZE – RECTANGLES

Maximum:	2500 × 5000 mm	0 + 4.5 mm
	(Larger sizes upon request)	
Minimum:	300 × 500 mm	0 + 4.5 mm
Aspect ratio:	14:1 Maximum for larger sizes	
Diagonal tolerance:	Up to 4 m	3 mm
	Over 4 m	4 mm

Overall unit thickness:	58 mm (Larger on request)
Maximum weight:	1000 kg

SHAPE CAPABILITY

Rectangles and simple shapes. All tolerances will vary depending on the complexity of shape.

EDGE CONDITION

Smooth ground edges giving a flat profile with small ground arris. Shells or chips at edges will be ground out prior to toughening and do not constitute reason for rejection. Corners may be dubbed. Some variation in edgework may be discernible on exposed edges where different machines and/or hand forming is a requirement for manufacture. Such variations shall be kept to a minimum. Where the detail of a structure is such that the double glazing edge sealant is fully exposed, minor undulations in the edge seal may be discernible, particularly near corners of the unit. Where a unit uses a Pilkington **Planar™** Sun, Pilkington **Suncool™** or Pilkington **Optitherm™**, the coating will be edge deleted in the area of the unit edge seal to ensure maximum unit durability. Depending on product type, orientation and light conditions, the edge deleted area may be visible to the naked eye.

ARGON FILLING

It is generally accepted that Argon gas will slowly dissolve through the seals over a period of time, the rate of diffusion being dependent on several factors such as unit size and the environment in which it is glazed. The total retention of Argon in the unit cannot therefore be guaranteed for the life of the unit.

HOLE DRILLING – RECTANGLES

Diameters:	34 mm ±1 mm
	48 mm ±1 mm
	19 mm ±1 mm Countersunk
	23 mm ±1 mm Countersunk (min. 12 mm outer glass)
Position:	May be up to 67 mm from glass edge at corners and sometimes along edge, subject to confirmation.
Positional tolerance:	±2 mm from one datum point
Number of holes:	Up to 10 (more on request)

INTERLAYERS AVAILABLE AS STANDARD

Kuraray™ SentryGlas® or PVB.

TOUGHENING STRESS

10/12/15/19 mm glass: Pilkington Toughened and Heat Soaked Glass
6/8 mm glass: Pilkington Heat Strengthened or Toughened and Heat Soaked Glass

ROLLER WAVE

Mean roller wave:	t < 8	0.05 mm
	t ≥ 8	0.02 mm
	Coated glass	0.05 mm

Maximum edge dip: 0.25 mm

Roller wave is usually parallel to the short side and in coated glass should be glazed horizontal where possible.

GLASS MARKING

Glass will be marked with the Pilkington toughening stamp and will show compliance with other regulatory requirements. The mark will be on each glass pane. Multiple panes will not necessarily be marked in the same corner. However, the thinner glasses will generally be marked with a relatively discreet linear brand within the area of the unit edge seal.

HEAT SOAK TESTING

All toughened glass will be supplied heat soaked to or in excess of international specifications e.g. BS EN 14179.

LITESENTRY OSPREY SCANNER

A LiteSentry Osprey Scanner is used to monitor and ensure high quality aesthetics of the Pilkington **Planar™** glass products.

VISUAL QUALITY – PVB

Advances in PVB technology in recent years have led to improved edge stability. Under natural exposure conditions, the edge of a PVB laminate will be of an acceptable quality when properly installed and maintained. However, the possibility of minor delamination cannot entirely be excluded. When viewed from a distance of 3 m in transmission and in the vertical position, bubbles, dirt or fibres within the laminate will be considered to be unacceptable if readily visible due to their size or quantity.

KURARAY SENTRYGLAS

This interlayer technology delivers increased load bearing characteristics and improved overall durability. Compared to standard conventional glass interlayers, SentryGlas® ionoplast is more resistant to moisture and the effects of weather due to its exceptional edge stability, with no defect extending greater than 3 mm normal to the chamfered edge of the laminate. Laminates will conform to the specification for process blemishes set forth in ASTM C1172-03, Table 1. When viewed from a distance of 3 m in transmission and in the vertical position, bubbles, dirt or fibres within the laminate will be considered to be unacceptable if readily visible due to their size or quantity.

DISTORTION

When laminating toughened or heat-strengthened glasses together, slight visible distortion in transmission due to small lensing effects may be noted at certain viewing angles.

The phenomenon is not normally a problem in roof glazing but may be discernible in vertical glazing. In addition, the air in all sealed units expands and contracts in hot and cold weather causing the glass to bow out and in respectively, and this movement may be visible in reflection. On occasion, such effects can be increased by the specification of a coated glass within the unit. Site inspection should be from a distance of 3 m and at right angles to the glass.

INSTALLATION

Whilst the Pilkington **Planar™** system is completely weatherproof, the components are not designed to be left in contact with water for extended periods, and adequate ventilation or drainage should be provided to allow the system to dry out periodically. Weather seals used around the periphery must be compatible with the Pilkington **Planar™** system and approval from Pilkington Architectural should be sought prior to application.

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CE marking confirms that a product complies with its relevant harmonised European Norm.

The Declaration of Performance for each product, including declared values, can be found at www.pilkington.com/CE

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