

## Pilkington **Planar**™ System Information

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



Pilkington Architectural offer a wide range of coated performance glasses for incorporation into the Pilkington **Planar**™ system. A selection of such products and performance data is indicated below:

Pilkington **Planar**™ IGUs with 6 mm Pilkington **Optifloat**™ Clear THS inner pane and 16 mm airspace

Pilkington Toughened and Heat Soaked Glass Outer Pane	Colour / Performance	Thickness (mm)	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U Value (W/m <sup>2</sup> K)	R <sub>w</sub> Value (dB)
Pilkington <b>Optifloat</b> ™	Clear	10	0.77	0.14	0.67	0.77	2.7	38
Pilkington <b>Optifloat</b> ™	Clear	12	0.76	0.14	0.64	0.74	2.7	38
Pilkington <b>Optifloat</b> ™	Clear	15	0.74	0.13	0.60	0.69	2.6	40
*Pilkington <b>Planar</b> ™ Sun	73/42	10	0.69	0.10	0.40	0.46	1.4	38
*Pilkington <b>Planar</b> ™ Sun	70/39	10	0.67	0.12	0.37	0.43	1.3	38
*Pilkington <b>Planar</b> ™ Sun	69/37	10	0.66	0.11	0.35	0.40	1.3	38
*Pilkington <b>Planar</b> ™ Sun	62/29	10	0.58	0.09	0.29	0.33	1.3	38
*Pilkington <b>Planar</b> ™ Sun	50/27	10	0.48	0.10	0.26	0.30	1.3	38
*Pilkington <b>Planar</b> ™ Sun	30/17	10	0.29	0.24	0.19	0.22	1.3	38

\*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. Please check current availability of the coated product range at [www.pilkington.com/planarcoatedupdate](http://www.pilkington.com/planarcoatedupdate) at the time of specification. It is strongly recommended that indicative 6/12/6 colour samples are viewed and approved as the basis for colour selection. It should be noted that although the performance data of some of the products are very similar there may still be colour differences.

Pilkington **Planar**™ IGUs with 6 mm Pilkington **K Glass**™ Clear THS inner pane and 16 mm airspace

Pilkington Toughened and Heat Soaked Glass Outer Pane	Colour / Performance	Thickness (mm)	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U Value (W/m <sup>2</sup> K)	R <sub>w</sub> Value (dB)
Pilkington <b>Optifloat</b> ™	Clear	10	0.72	0.16	0.63	0.72	1.7	38
Pilkington <b>Optifloat</b> ™	Clear	12	0.70	0.16	0.60	0.69	1.7	38
Pilkington <b>Optifloat</b> ™	Clear	15	0.68	0.16	0.56	0.64	1.7	40

Pilkington **Planar**™ IGUs with 6 mm Pilkington **Optitherm**™ S3 Pro T (toughened), inner pane and 16 mm airspace

Pilkington Toughened and Heat Soaked Glass Outer Pane	Colour / Performance	Thickness (mm)	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U Value (W/m <sup>2</sup> K)	R <sub>w</sub> Value (dB)
Pilkington <b>Optifloat</b> ™	Clear	10	0.76	0.12	0.55	0.63	1.4	38
Pilkington <b>Optifloat</b> ™	Clear	12	0.75	0.12	0.53	0.61	1.4	38
Pilkington <b>Optifloat</b> ™	Clear	15	0.73	0.12	0.50	0.57	1.3	40
Pilkington <b>Optiwhite</b> ™	Extra Clear	10	0.80	0.13	0.64	0.74	1.4	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	12	0.79	0.13	0.63	0.72	1.4	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	15	0.79	0.13	0.63	0.72	1.3	40

Pilkington **Planar**™ IGUs with 6 mm Pilkington **Optiwhite**™ THS inner pane and 16 mm airspace

Pilkington Toughened and Heat Soaked Glass Outer Pane	Colour / Performance	Thickness (mm)	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U Value (W/m <sup>2</sup> K)	R <sub>w</sub> Value (dB)
Pilkington <b>Optiwhite</b> ™	Extra Clear	10	0.83	0.15	0.81	0.93	2.7	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	12	0.82	0.15	0.80	0.92	2.7	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	15	0.82	0.15	0.79	0.91	2.6	40
Pilkington <b>Planar</b> ™ Sun OW	73/42	10	0.74	0.11	0.43	0.49	1.4	38
Pilkington <b>Planar</b> ™ Sun OW	69/37	10	0.70	0.12	0.38	0.44	1.3	38
Pilkington <b>Planar</b> ™ Sun OW	62/29	10	0.63	0.10	0.30	0.34	1.3	38
Pilkington <b>Planar</b> ™ Sun OW	50/27	10	0.51	0.10	0.28	0.32	1.3	38

Pilkington **Planar**™ IGUs with 6 mm Pilkington **K Glass**™ OW THS inner pane and 16 mm airspace

Pilkington Toughened and Heat Soaked Glass Outer Pane	Colour / Performance	Thickness (mm)	Light Transmittance LT	Light Reflectance LR	Total Solar Radiant Heat Transmittance	Total Shading Coefficient	U Value (W/m <sup>2</sup> K)	R <sub>w</sub> Value (dB)
Pilkington <b>Optiwhite</b> ™	Extra Clear	10	0.77	0.17	0.76	0.87	1.7	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	12	0.76	0.17	0.76	0.87	1.7	38
Pilkington <b>Optiwhite</b> ™	Extra Clear	15	0.76	0.17	0.75	0.86	1.7	40

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.

Pilkington **Planar**™ Units – Glass Types

Glass Type	Colour	6 mm	8 mm	10 mm	12 mm	15 mm	19 mm	Notes
Pilkington <b>Optifloat</b> ™	Clear	✓	✓	✓	✓	✓	✓	
Pilkington <b>Optifloat</b> ™	Grey	✓		✓				
Pilkington <b>Optifloat</b> ™	Bronze	✓		✓				
Pilkington <b>Optifloat</b> ™	Green	✓		✓				
Pilkington <b>Optiwhite</b> ™	Extra Clear	✓	✓	✓	✓	✓	✓	
Pilkington <b>Arctic Blue</b> ™	Blue	✓		✓				
Pilkington <b>K Glass</b> ™	Clear	✓						
Pilkington <b>Optitherm</b> ™ S3	Clear		✓					Subject to minimum quantity. Max. size 2400 x 4800 mm
Pilkington <b>Planar</b> ™ Sun	Clear	✓	✓	✓	✓	✓	✓	Subject to minimum quantity. Max. size 2400 x 4800 mm
Pilkington Screen Printed Glass	All	✓	✓	✓	✓	✓	✓	Maximum screened area 2400 x 4500 mm (See enclosed data sheet for further details)
Pilkington <b>Activ</b> ™ Clear Pilkington <b>Activ</b> ™ Blue	Clear Blue	✓		✓				

Specification – Pilkington **Planar**™ IGUs**Composition**

Pilkington **Planar**™ IGUs are manufactured from two Pilkington Toughened and Heat Soaked Glass panes and reference should be made to the single Pilkington **Planar**™ Specification for technical data which is not contained herein.

**Outer glass**

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

**Inner glass**

Thickness: 6 mm ±0.2 mm  
8, 10, 12 mm ±0.3 mm

Pilkington **Planar**™ Insulating Glass Units

Airspace: 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  
Overall thickness: ±2 mm tolerance

**Glass size – rectangles**

Maximum: 2400 x 4800 mm 0 + 4.5 mm  
Minimum: 300 x 500 mm 0 + 4.5 mm  
Aspect ratio: 14:1 Maximum  
Diagonal tolerances: Up to 4 m: 3 mm Maximum difference  
Over 4 m: 4 mm Maximum difference  
Overall thickness: 54 mm Maximum  
Maximum weight: 600 kg

**Shape capability**

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

**Roller wave – both glasses in same direction**

Mean roller wave: t ≤ 8 mm 0.05 mm  
Mean roller wave: t > 8 mm 0.02 mm  
Pilkington **Planar**™ Sun mean roller wave: 0.05 mm  
Maximum edge dip: 0.25 mm  
Roller wave is usually parallel to the short side and in coated glasses should be glazed horizontally where possible.

**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. The Pilkington **Planar**™ Sun range of coatings 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.

**Hole drilling – rectangles**

Diameter: 34 mm ±1 mm  
Diameter: 19 mm ±1 mm Countersunk  
Position: Normally 60 mm from glass edge at corners and sometimes along edge. Other configurations subject to confirmation.  
Tolerance: ±2 mm from one datum point.  
Number: Up to 10

**Toughening stress**

Thermally toughened soda glass silicate safety glass to BS EN 12150. Classified as 1 (C) 1 to BS EN 12600. Checked regularly during production by fracture count or the Differential Stress Refractometer (DSR) method.

**Heat soak testing**

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

**Glass marking**

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

**Visual quality****Distortion**

Pilkington **Planar**™ IGUs are manufactured from two Pilkington Toughened and Heat Soaked Glass panes which have minimal effect on visual transmission through the glass but some distortion can be seen in reflection. The air in all sealed units expands and contracts in hot and cold weather causing the glass to bow out and in respectively and again reflections will reflect this movement. On occasion such effects can be increased by the specification of a coated glass. 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. Weatherseals used around the periphery must be compatible with the Pilkington **Planar**™ system and approval from Pilkington Architectural should be sought prior to application.

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, 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.

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