



## Pilkington **Planar**<sup>™</sup> System Information

### Single glass – flat and curved

#### Single Pilkington **Planar**<sup>™</sup> Glazing – Performance

Glass Type	Colour	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> <sup>™</sup>	Clear	10	0.87	0.08	0.78	0.90	5.6	34	
		12	0.85	0.08	0.75	0.86	5.5	35	
		15	0.83	0.08	0.71	0.82	5.5	36	
		19	0.81	0.07	0.67	0.77	5.3	40	
Pilkington <b>Optifloat</b> <sup>™</sup>	Bronze	10	0.32	0.05	0.46	0.53	5.6	34	
		Grey	10	0.26	0.05	0.46	0.53	5.6	34
		Green	10	0.67	0.07	0.51	0.59	5.6	34
Pilkington <b>Optiwhite</b> <sup>™</sup>	Clear	10	0.90	0.08	0.89	1.02	5.6	34	
		12	0.90	0.08	0.88	1.01	5.6	35	
		15	0.90	0.08	0.87	1.00	5.5	36	
		19	0.89	0.08	0.86	0.99	5.3	40	
Pilkington <b>Arctic Blue</b> <sup>™</sup>	Blue	10	0.38	0.05	0.42	0.48	5.6	34	
Pilkington <b>Activ</b> <sup>™</sup> Clear	Clear	10	0.81	0.14	0.74	0.85	5.6	34	
Pilkington <b>Activ</b> <sup>™</sup> Blue	Blue	10	0.35	0.13	0.38	0.44	5.6	34	

Technical data has been calculated according to EN 410 and EN 673. The above table has been updated to take into account the declared values of radiation and thermal properties required for CE Marking.

#### Single Pilkington **Planar**<sup>™</sup> – Glass Types

Glass Type	Flat	Curved	Notes
Pilkington <b>Optifloat</b> <sup>™</sup> Clear	✓	✓	
Pilkington <b>Optifloat</b> <sup>™</sup> Bronze/Grey/Green	✓	✓	
Pilkington <b>Optiwhite</b> <sup>™</sup>	✓	✓	
Pilkington <b>Arctic Blue</b> <sup>™</sup>	✓	✓	
Pilkington <b>Activ</b> <sup>™</sup> Clear and Pilkington <b>Activ</b> <sup>™</sup> Blue	✓		
Pilkington Decorative Glass Screen Printed	✓	✓	Maximum screened area 2400 x 4500mm (See enclosed data sheet for further details)

#### Specification – flat single Pilkington **Planar**<sup>™</sup>

##### Flat glass

Thicknesses:	10, 12mm	±0.3mm
	15mm	±0.5mm
	19mm	±1.0mm

##### Flat glass size – rectangles

Maximum:	2400 x 4800mm	±1mm
Minimum:	300 x 500mm	±1mm
Aspect ratio:	14:1	Larger on request
Diagonal tolerance:	Up to 4m:	3mm Maximum difference
	Over 4m	4mm Maximum difference

##### Flat shape capability – simple shapes

All tolerances will vary depending on the complexity of shape.

##### Bow

Maximum bow:	0.1%	(Float glass)
	0.2%	(Ceramic coated glass)

##### Roller wave

Mean roller wave depth:	0.02mm
Maximum edge dip:	0.25mm

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

##### Hole drilling – rectangles

Diameter:	19mm ±1mm (countersunk)
Position:	Normally 60mm from glass edge at corners and sometimes along edge. Other configurations subject to confirmation.
Tolerance:	±2mm from one datum point.
Number:	Up to 10 (larger on request)

### Toughening stress

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

### Heat soak testing

All toughened glass (Pilkington T glass) will be supplied heat soaked to or  
in excess of international specifications eg. EN 14179-1.

### 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.

### Visual quality

Roller wave and natural bow in toughened glass have minimal effect on  
vision in transmission but can be observed in reflection, obviously more  
with reflective glass. This is kept to a minimum with the very low roller  
wave and bow in Pilkington T glass Plus. Site inspection should be from a  
distance of 3m and viewed at right angles to the glass.

### Installation

Whilst the Pilkington **Planar**<sup>™</sup> 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**<sup>™</sup> system and approval from  
Pilkington should be sought prior to application.

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## Specification – curved single Pilkington **Planar**<sup>™</sup>

### Curved glass

Thicknesses:	10mm, 12mm	±0.3mm
	15mm	±0.5mm
	19mm (on request only)	

### Curved glass size – rectangles

Developed width:	360 to 2130mm	±3mm
Length:	400 to 3650mm	±3mm
Aspect ratio:	2:1 maximum for large areas	
Minimum size:	360 x 900mm	±3mm
Minimum radius:	1000mm	
Maximum weight:	350kg	

Tolerances on curves are difficult to define. In simple terms:

Straight edge will be:	±3mm from the straight
Developed width will be:	10 - 12mm ±3mm from perfect curve
	15mm ±4mm from perfect curve
	19mm ±5mm from perfect curve

*Note: 'developed width' means the width of glass pane prior to bending.*

*Torsion ±5mm per metre measured along the straight edge.*

### Curved shape capability

Rectangles and simple rakes. All tolerances will vary depending on  
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 machine and/or hand forming is a requirement for manufacture.  
Such variations shall be kept to a minimum.

### Hole drilling

Diameter:	19mm ±1mm countersunk
	Curved glass countersunk on convex side only.
Position:	Normally 60mm from glass edge at corners and sometimes along edge. Other configurations subject to confirmation.
Tolerance:	± 2mm from one datum point
Number:	Up to 10

### Toughening stress

Thermally toughened soda lime silicate safety glass to EN 12150.  
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 eg. EN 14179-1.

### 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.

### Visual quality

A degree of distortion, both when looking through and in reflection, is  
inevitable in curved toughened glass, particularly when viewing a moving  
object through the glass. All curved glass should be site inspected from a  
minimum distance of 3m and viewed at right angles to the glass. It should  
also be noted that toughened curved glass will split direct sunlight into  
striped shadow.

### Installation

Whilst the Pilkington **Planar**<sup>™</sup> 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**<sup>™</sup> system and approval from  
Pilkington should be sought prior to application.

### General Notes – Curved Glazing

Curved Pilkington **Planar**<sup>™</sup> applications are the subject of continuing  
development and enquiries are welcomed for projects furthering current  
specifications and usage. Special fittings have been designed for curved  
glazing and particular torque settings determined. The angle of spring plate  
or 905 bar must suit the curve radius. At time of printing, the support  
structure must lie on the concave side of the glass but can be internally or  
externally located. The curve may be on any plane.

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