



Pilkington Planar™ System Information

Single glass - flat and curved

Single Pilkington Planar™ Glazing – Performance

Glass Type	Colour	Thickness (mm)	Light Transmittance (Tvis)	Light Reflectance (Rfvis)	Solar Heat Gain Coefficient (SHGC)	Total Shading Coefficient (SC)	U'-value (Summer) (Btu/hr-ft ² -°F)	U'-value (Winter) (Btu/hr-ft ² -°F)
Pilkington Optifloat ™	Clear	10	0.88	0.08	0.82	0.95	0.90	1.00
Pilkington Optifloat ™	Clear	12	0.88	0.08	0.81	0.93	0.89	0.99
Pilkington Optifloat ™	Clear	15	0.87	0.08	0.79	0.90	0.88	0.97
Pilkington Optifloat ™	Clear	19	0.85	0.08	0.76	0.87	0.86	0.95
Pilkington Optifloat ™	Bronze	10	0.33	0.05	0.52	0.60	0.90	1.00
Pilkington Optifloat ™	Grey	10	0.27	0.05	0.50	0.58	0.90	1.00
Pilkington Optifloat ™	Green	10	0.67	0.06	0.52	0.60	0.90	1.00
Pilkington Optiwhite ™	Extra Clear	10	0.91	0.08	0.90	1.03	0.90	1.00
Pilkington Optiwhite ™	Extra Clear	12	0.91	0.08	0.89	1.03	0.89	0.99
Pilkington Optiwhite ™	Extra Clear	15	0.90	0.08	0.89	1.02	0.88	0.97
Pilkington Optiwhite ™	Extra Clear	19	0.90	0.08	0.88	1.01	0.86	0.95
Pilkington Arctic Blue ™	Blue	10	0.38	0.05	0.45	0.51	0.90	1.00
Pilkington Activ ™ Clear	Clear	10	0.83	0.14	0.79	0.90	0.90	1.00
Pilkington Activ ™ Blue	Blue	10	0.35	0.13	0.42	0.48	0.90	1.00

Technical data has been calculated using Window 7.3.4.0 (NFRC 100-2010).

Single Pilkington Planar™ – Glass Types

Glass Type	Flat	Curved	Notes
Pilkington Optifloat ™ Clear	+	+	
Pilkington Optifloat ™ Bronze	+	+	
Pilkington Optifloat ™ Grey	+	+	
Pilkington Optifloat ™ Green	+	+	
Pilkington Optiwhite ™	+	+	
Pilkington Arctic Blue ™	+	+	
Pilkington Activ ™ Clear	+		
Pilkington Activ ™ Blue	+		
Pilkington Screen Printed Glass	+	+	Maximum screened area 2400×4500 mm (See enclosed data sheet for further details)

Specification - flat single Pilkington Planar™

FLAT GLASS

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

FLAT GLASS SIZE – RECTANGLES

Maximum: 3050×6000 mm ±1 mm
 Minimum: 300×500 mm ±1 mm
 Aspect ratio: 14:1 Larger on request
 Diagonal tolerance: Up to 4 m: 3 mm Maximum difference
 Over 4 m: 4 mm 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: 0.02 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.

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: 19 mm ±1 mm countersunk
 23 mm ±1 mm countersunk (Min. 12 mm glass thickness)
 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 (larger on request)

TOUGHENING STRESS

Thermally toughened soda lime 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.

LITSENTRY OSPREY SCANNER

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

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 Toughened and Heat Soaked Glass. Site inspection should be from a distance of 3 m and viewed 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.

Specification - curved single Pilkington Planar™

CURVED GLASS

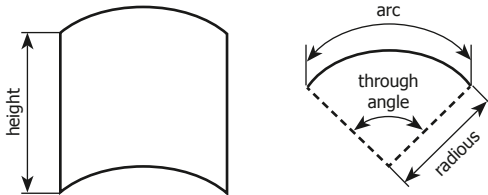
Thicknesses: 10, 12 mm ±0.3 mm
15 mm ±0.5 mm

CURVED GLASS SIZE – RECTANGLES

Oven 1	6 mm - 15 mm	Oven 2	6 mm - 15 mm
Arc length	600-2440 mm	Arc length	600-4200 mm
Panel height	400-4500 mm	Panel height	250-3200 mm
Radius	1000-25000 mm	Radius	2000-16000 mm

Oven 3	6 mm - 12 mm
Arc length	600-1500 mm
Panel height	250-3200 mm
Radius	700-20000 mm

These are general limits and are subject to confirmation. For specific details, please contact Pilkington Architectural.



TOLERANCES

Dimension	Edge	Diagonal
≤1000 mm	±1 mm	±3 mm
1000-3000 mm	±2 mm	±4 mm
>3000 mm	±3 mm	±2 mm per metre length

Straight edge deviation: ±3 mm from the straight

Twist: ±5 mm per metre measured along the straight edge

Maximum angle: 120° (depending on glass thickness)

Tolerance of curve will be 2x glass thickness. i.e. a 10 mm thick glass will fit into a 10x2 = 20 mm channel width. Please be aware that all curved toughened glass will have flats of 100 mm to 150 mm on the leading and trailing edges.

	Toughened	Ceramic coated
Roller Wave	0.3 mm per 300 mm	0.5 mm per 300 mm

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: 19 mm countersunk ±1 mm

Curved glass generally countersunk on convex side only although exceptions can be made. Please contact Pilkington Architectural for further assistance.

Position: Hole edge must be at least 6x glass thickness from corner of panel:

Thickness	Hole position	Thickness	Hole position
10	60x60	12	60x60
15	70x70	19	90x90

Tolerance: ±2 mm from one datum point

Number: Up to 10

TOUGHENING STRESS

Thermally toughened soda lime silicate safety glass levels equivalent to BS 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 e.g. BS EN 14179.

GLASS MARKING

Glass will be marked with a 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 3 m 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™** 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.

GENERAL NOTES – CURVED GLAZING

Curved Pilkington **Planar™** 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. The curve may be on any plane.

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USA 2801 – December 2020