



The Pilkington Glass Range



PILKINGTON
NSG Group Flat Glass Business

Pilkington. Everything you need in glass from the experts.

We have been manufacturing and processing glass since 1826. This experience has been invaluable and has enabled us to invest in and develop our ideas into world leading products.

Products like high-quality float glass, coated, toughened, laminated, fire protection and specialist glass, as well as energy saving Insulating Glass Units were developed by combining our unrivalled technical expertise with true innovation.

Today, part of the NSG group, we supply these products to our partners in 130 different countries – just one of the reasons why the brand Pilkington has become synonymous with glass.

This brochure gives a brief outline of our most popular commercial products. To help you choose the right glass for your particular project, we have divided the range by product benefit.

For more details and technical data for all the Pilkington glass range – including various specialist products for specific uses – visit www.pilkington.co.uk, email pilkington@respond.uk.com or phone our technical helpline on 01744 692000.

If there is anything we could do for you please let us know. We are in this business together, and we are stronger for it.





The Pilkington Range

Solar Control:

Pilkington **Suncool™** Range
Pilkington **Eclipse Advantage™**
Pilkington **Solar-E™**
Pilkington **Optifloat™** Tint
Pilkington **Arctic Blue™**
Pilkington **Optilam™** I
Pilkington **Insulight™** Sun

Thermal Insulation:

Pilkington **K Glass™** Range
Pilkington **energiKare™** Range
Pilkington **Insulight™** Therm
Pilkington **Optitherm™** Range
Pilkington **Optifloat™**

Fire Protection:

Pilkington **Pyrostop®**
Pilkington **Pyrodur®**
Pilkington **Pyrodur®** Plus
Pilkington **Pyroshield™** 2 Range

Noise Control:

Pilkington **Optiphon™**
Pilkington **Insulight™** Phon

Safety/Security:

Pilkington **Optilam™** Range
Pilkington **Insulight™** Protect

Self-Cleaning:

Pilkington **Activ™** Clear
Pilkington **Activ™** Blue
Pilkington **Activ™** Neutral
Pilkington **Activ Suncool™**
Pilkington **Activ Optitherm™**
Pilkington **Insulight Activ™**
Pilkington **Cervoglass Activ™**

Decoration:

Pilkington **Texture Glass**
Pilkington **Decorative Glass**
Pilkington **Optifloat™** Opal
Pilkington **Optimirror™** Range
Pilkington **Oriel Collection**
Pilkington **Insulight™** Décor
Pilkington **Spandrel Glass**

Glass Systems:

Pilkington **Planar™**
Pilkington **Profilit™**

Special Applications:

Pilkington **Optiwhite™**
Pilkington **Plateau™**
Pilkington **Microfloat™**
Pilkington **Galleria™**

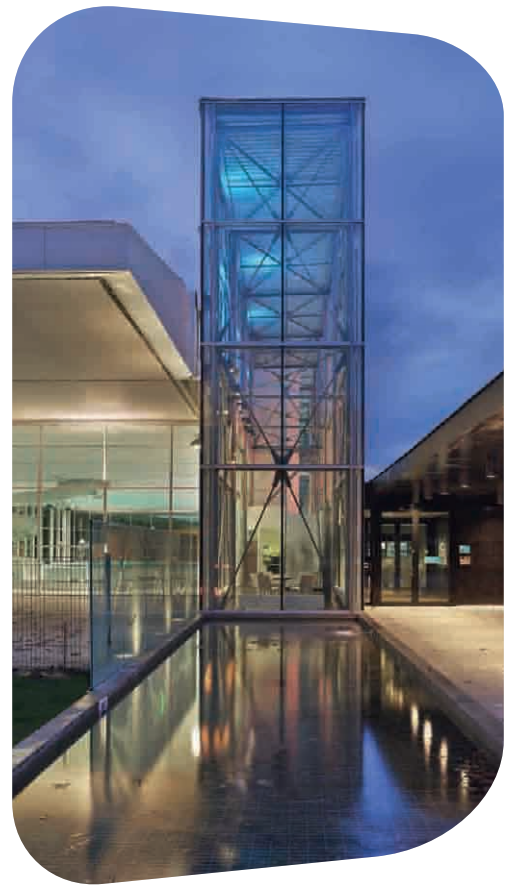
Solar Control

In winter, the fact that glass allows the sun's heat as well as light into a building can be beneficial; but in summer months, without solar control it can become uncomfortably hot.

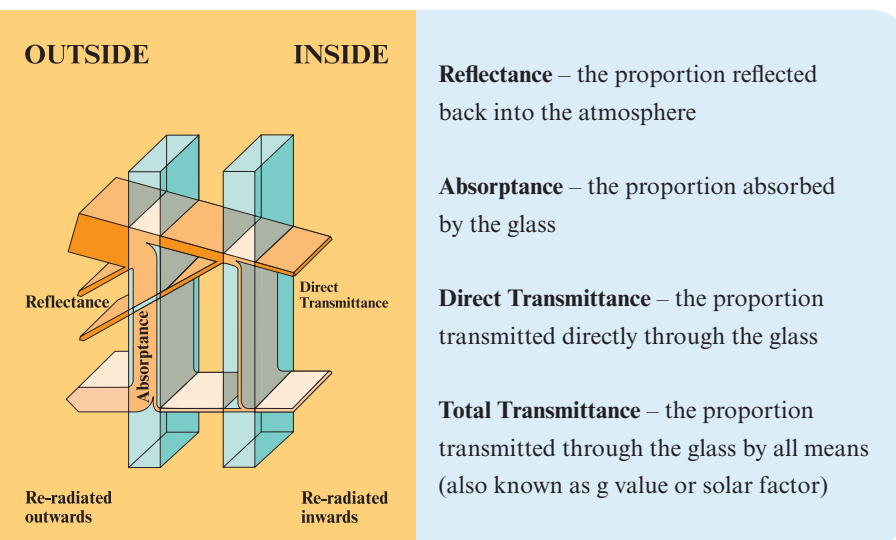
Solar control glass provides a more comfortable environment, and can help to reduce the capital outlay, running costs and carbon emissions of a building throughout the year, by reducing or eliminating the requirement for air conditioning.

Given the variety of building designs and climatic conditions and the different levels of exposure to solar radiation during the year, the choice of glass must be able to protect the inside of the building to ensure maximum comfort, minimise energy consumption, guarantee safety and, not least, provide the optical and aesthetic qualities that satisfy the designer.

Solar control glass controls solar radiation by managing reflectance, transmittance and absorptance. For solar control purposes, and assuming solar radiation at near normal incidence, these are defined as:



Swimming Pool, Moreux, France.



How glass can provide solar control

Solar control can be achieved in a number of ways, including body-tinted glass, coated glass, laminated glass with tinted interlayers and IGUs incorporating blinds.

Specifying solar control glass

Today's increased use of glass in architecture makes it imperative to consider the comfort of a building's occupants. In hot climates, solar control glass can be used to minimise solar heat gain and help control glare; while in temperate regions, it can be used to balance solar gain with heat loss and achieve high levels of natural light.

Solar control glass can be specified for any situation where excessive solar heat gain is likely to be an issue, from large conservatories to glass walkways, and building façades to atria. The Pilkington range of solar control glass offers performance options to suit almost every need, with each product available in toughened or laminated form.

Pilkington Suncool™

A range of superior solar control products with a wide range of visible light transmittance, reduced solar transmittance and excellent low-emissivity all in one superb product. With its extensive range, Pilkington **Suncool™** offers the ideal choice for providing maximum light transmission and thermal comfort for occupants all year round. Pilkington **Suncool™** products are available in annealed, toughened, laminated and sound insulation form and, if required, on Pilkington **Optiwhite™** to increase light transmission.

Pilkington **Suncool™** is always used as part of an IGU – or a Pilkington **Planar™** system – where the coating also provides the highest level of thermal insulation. A range of colours including clear, neutral, and silver are available, as well as several self-cleaning Pilkington **Activ Suncool™** versions.

Other solar control options

Pilkington Eclipse Advantage™

A world-leading environmental control glass, offering a unique combination of high light transmittance, with reduced solar gain and glare. Pilkington **Eclipse Advantage™** provides subtle reflectivity with consistent colour through application of a durable pyrolytic coating.

Pilkington Solar-E™

A new addition to our range which offers all the benefits of being a durable, pyrolytic coating with improved solar gain and lower external reflectivity.

Pilkington Optifloat™ Tint

A range of low to medium performance, body-tinted glass types manufactured using the standard float glass process. Solar control level and colour densities vary with thickness. Available in Bronze, Grey, Green, and Pilkington **Arctic Blue™**.

Pilkington Optilam™ I

This range of laminated glass incorporates coloured or patterned interlayers, thus offering a wider choice of colours or designs than body tinted glass, without necessarily increasing the glass thickness.

Pilkington's own IGU incorporating Solar Control is known as Pilkington **Insulight™** Sun. Please specify this with your performance requirements. Also available is Pilkington **Insulight™** Sun incorporating ScreenLine® blinds, a specialist option exclusively from Pilkington in the UK and Ireland. See our website for further details.



Plymouth University, UK.

Pilkington Suncool™ Benefits

- Reduces solar heat gain
- Low-emissivity for high thermal insulation
- A flexible range of solar control options
- Choice of high to low light transmittance
- Wide range of colours and appearances
- Available in toughened or laminated forms
- Available with Pilkington **Planar™** architectural glazing system
- A range of matching Pilkington Spandrel Glass available
- Available on Pilkington **Optiwhite™** to help avoid thermal stress in annealed products and to increase light transmission

Pilkington Eclipse Advantage™ Benefits

- Offers design flexibility
- Durable hard coating can be easily handled, cut, toughened or curved
- Energy efficient, combining low-emissivity with solar control
- Range of colours
- Readily available from stock

Pilkington Solar-E™ Benefits

- Improved solar gain
- Lower external reflectivity

Pilkington Optifloat™ Tint Benefits

- Range of solar control performance options
- Range of colours
- Low reflection
- Can be toughened, laminated or curved
- Can be used in both single glazing and IGUs



Car Showroom, Utrecht, The Netherlands.

Thermal Insulation

With increasing environmental awareness, more emphasis is now being placed on ways to save energy in any building, domestic or commercial – to the extent that in recent years, new regulations have been introduced specifying minimum requirements for energy efficiency (Part L of the Building Regulations) – and glass can play an important role in saving energy.

Measuring heat loss

Heat loss is normally measured by the thermal transmittance or U value, usually expressed in W/m^2K . In its most basic terms, the lower the U value, the greater the thermal insulation.

Ways to improve thermal insulation

For any window, there are a number of ways its thermal performance can be improved:

- Incorporation of a low-emissivity (low-e) glass into the Insulating Glass Unit
- Incorporation of a gas of lower thermal conductivity (e.g. argon) in the airspace between the panes of glass
- Increasing the width of the airspace to an optimum for the type of glass eg. 16 mm for Argon
- Triple glazing

Pilkington **Insulight™**

Pilkington **Insulight™** is Pilkington's own IGU, able to incorporate two or more different types of Pilkington glass to achieve a combination of benefits, e.g. self-cleaning combined with low emissivity.

Pilkington **Insulight™** is a technically advanced dual sealed unit meeting all current British and European Standards, and designed to offer a variety of cavity widths, spacer bar colour and performance. A choice of dual seal designs are able to withstand a wide range of environments eg. temperature, UV light and moisture vapour permeation.

Pilkington Low-Emissivity Glass (low-e)

Pilkington offers two types of low-e glass; Pilkington **K Glass™** and Pilkington **Optitherm™** both offer a number of common benefits:

- Reduced heat loss to save energy and help maintain a comfortable environment

- Reduced cold spots and downdraughts near windows, improving comfort and usable space
- Increased inner glass surface temperatures, reducing internal condensation
- Reduced capital and running costs of heating systems
- Allow extensive use of glass in buildings through the ability to trade off improved U values with other building elements

Pilkington **K Glass™** Range

Pilkington **K Glass™** is an on-line coated glass, which makes it easy to handle and process. It can be toughened or laminated for safety applications, and is available from stockists nationwide. A well-known brand amongst specifiers, trade and consumers alike, it is the market-leading low-e glass.

Pilkington **K Glass™** OW is an advanced form of the original Pilkington **K Glass™**; solely for use within Pilkington **energiKare™** IGUs. It improves solar gain and enables you to achieve the highest energy ratings in the greatest range of profiles yet.

Pilkington **K Glass™** Benefits

- The UK's leading low-emissivity glass
- High brand awareness, established 1990
- The simplest way to meet Part L
- Can be toughened and laminated, retaining uniform appearance
- On-line coating makes for easy handling and processing
- Exhaustively tried and tested to all relevant European and British Standards
- Good transmitter of solar radiant heat
- Increased light transmission levels for improved lighting
- Extended range offers greater solar gain to improve Window Energy Ratings (WERs)
- Can be combined with other Pilkington products to provide multiple benefits

Pilkington Optifloat™

Pilkington **Optifloat™** is the name for our high quality float glass frequently used as the outer pane in Insulating Glass Units.

Pilkington Optitherm™ Range

Pilkington **Optitherm™** is an off-line coated glass offering a lower emissivity and U value, hence better reduction in heat loss, particularly suitable for commercial applications. It can be toughened or laminated for safety and security applications, and can be combined with other Pilkington glass for additional benefits, such as Pilkington **Activ™** for self-cleaning.

Where to use thermal insulation glass

Quite simply, low-e glass should be specified wherever there is a need to reduce energy consumption and heat loss, from domestic windows and conservatories to large scale curtain walling applications.

Low-e glass is generally the inner pane of an IGU, with the low-e coated surface facing the cavity on surface 3. For privacy or aesthetic reasons, it can be combined with decorative glass, such as Pilkington **Optifloat™** Tint, the inclusion of which has no effect on the window's thermal properties.

Where there is a need to reduce internal solar heat gain in summer and heat loss in winter, Pilkington **Suncool™** products can be specified without the need for a separate low-e glass.

Pilkington **Insulight™** Therm is our own IGU incorporating thermal insulation. Please specify this with your performance requirements.

Pilkington Optitherm™ Range Benefits

- Excellent thermal insulation – U value as low as 1.1 W/m²K – in IGU form
- High light transmittance
- Can be combined with other Pilkington products to provide multiple benefits
- Available in three versions: annealed, toughened and laminated

Pilkington energikare™

Glazing which reduces the amount of heat lost through windows and allows more heat from the sun in, an effect known as solar gain. It achieves this because it contains Pilkington **K Glass™**, the UK's best selling low-emissivity glass which reduces heat escaping from homes, and Pilkington **Optiwhite™**, a special 'extra-clear' type of glass that increases the degree of solar heat gain and makes homes feel warmer using free heat from the sun.

The expanded family of Pilkington **energiKare™** products lets you get all your energy saving requirements from one source:

Pilkington **energiKare™** Classic – The original Pilkington **energiKare™** unit. This is capable of achieving a minimum C Window Energy Rating in most framing systems.

Pilkington **energiKare™** Plus – This is an upgrade from Pilkington **energiKare™** Classic as it incorporates warm edge spacer and argon gas to help achieve a Window Energy Rating of A or B, depending on the framing system.

Pilkington **energiKare™** Triple – These high performance triple-glazed units optimise the balance between U values and g values to maximise energy efficiency.

Pilkington **energiKare™** Legacy – using advanced Pilkington **Spacia™** technology, is the world's first commercially-available vacuum glazing. It allows the manufacture of extremely thin glazing which can be fitted in old style fine frames, maintaining the original appearance of older traditional buildings.



Residential home, UK – illustrative image.



Note: Microspacers only visible on close inspection.

Fire-Resistant Glass

A range of fire-resistant glass is available offering varying levels of protection, which is measured in terms of integrity (the time the glass remains intact in a fire) and insulation (the amount the glass will limit the temperature rise on the non-fire side). It should be noted that fire-resistant glass should always be specified as part of a complete glazing system, and installation carried out by specialists in order to ensure it achieves its expected fire performance.

Pilkington Pyrostop®

The clear alternative to a solid wall, combining a high level of fire performance with impact protection.

- Grades available for internal and external applications
- Tested and approved with a wide range of fire-resistant framing materials, glazing gaskets and sealants
- Tried and successfully tested in a wide range of applications, including the Certifire Scheme
- Readily available and easy to handle, stock and cut
- Pilkingtons range of fire resistant glass can be combined with other functional glass and made into an IGU

Pilkington Pyrodur® and Pilkington Pyrodur® Plus

These products use laminated intumescent layers to combine integrity and insulation for a short period of time in a completely clear glass. In a fire the clear interlayer foams to provide an opaque barrier, thus reducing fear and panic during evacuation.

Pilkington Pyrostop® Benefits

- Clear, multi-laminated glass, retaining integrity and insulating against heat transfer from fire
- Turns opaque in a fire
- Restricts flames and hot gases
- Up to 120 minutes insulation and integrity in suitable glazing systems
- Impact safety performance up to Class 1(B)1 BS EN 12600
- Thicknesses from 15 to 60 mm for various levels of protection
- Grades available for internal or external applications
- Provides high levels of noise reduction
- Available direct from Pilkington or through nationwide network of stockists

Pilkington Pyrodur® Benefits

- Restricts flames and hot gases
Offers 30 and 60 minutes integrity, with full insulation for a short period of time, in a 10 mm thickness product
- Offers 60 minutes integrity with full insulation for a short period of time in larger sizes and higher levels of impact resistance in a 13 mm thickness product
- Up to Class 1(B)1 BS EN 12600
- Grades available for internal or external applications
- Turns opaque in a fire

Pilkington Pyrodur® Plus Benefits

- Restricts flames and heat
- Nominal 7 mm thickness
- 30 minutes integrity, with full insulation for a short period of time
- Exceptionally low levels of transmitted radiant heat
- Class 2(B)2 BS EN 12600
- Specially designed for internal fire doors and partitions in timber
- Turns opaque in a fire

Imperial War Museum, Manchester, UK.



Residential Apartment,
Manchester, UK.



Pilkington **Pyroshield™ 2** Benefits

- Meets European fire test standards
- Restricts the spread of flames and hot gases
- Offers up to 30 minutes integrity in approved steel and timber frames when tested to British and European Standards
- Maintains integrity even when fractured or sprayed with water
- Safety version provides impact safety to Class 3(B)3 BS EN 12600
- Suitable for fire resistant glazing in large sizes
- One of the most popular fire-resistant products in the world

Contact

For more details e-mail pilkington@respond.uk.com, or phone our technical helpline on 01744 692000 or visit www.pilkington.co.uk

Alternatively follow the link below for contact details of our Pilkington **Pyrostop®** or Pilkington **Pyrodur®** specialists around the UK and Ireland.

www.pilkington.co.uk/firerangesuppliers

Pilkington **Pyroshield™ 2**

A range of fire resistant wired glass and one of the most popular options. Wired glass has a good track record in fire resistance and test history with exceptional value for money, ease of handling, stocking and glazing.

It is a monolithic wired glass that provides integrity classification for fire protection even in timber frames. This product is available in a clear safety option for vision areas, Pilkington **Pyroshield™ 2** Safety Clear and a textured non safety option for obscuration, Pilkington **Pyroshield™ 2** Texture.

An integral wire mesh effectively holds any broken sections together in the case of thermal fracture caused by the extreme heat of a fire, allowing the product to continue holding back the flames and hot gas.



Residential Application, London, UK.

Noise Control

Pilkington **Optiphon™** – Laminated glass for transparent noise insulation.

With increasing traffic on the road, rail and in the air, noise insulation has become a very important topic. It is not a question of it being a luxury anymore it is essential that noise reduction is considered in the specification of the glazing. With regard to employment law, comfort and medical necessity, noise insulation in building construction is an undisputed requirement to decrease stress – and noise-related illnesses.



ELE building, Gelsenkirchen, Germany.

Pilkington **Optiphon™** is the ideal choice of glass in situations where there is excess noise from road, rail or air traffic, or various other sources, for example factories or nightclubs.

By using a special PVB (PolyVinyl Butyral) interlayer, Pilkington **Optiphon™** is a high quality acoustic laminated glass that offers excellent noise reduction without compromising on light transmittance or impact performance.

The desired acoustic performance can be achieved through combining various thicknesses of glass with a PVB interlayer. With a large variety of product combinations, Pilkington **Optiphon™** offers the opportunity to achieve specific noise reduction requirements.

Pilkington **Optiphon™** Benefits

- Special PVB interlayer for enhanced sound insulation performance
- A thinner and lighter glass for the equivalent acoustic performance
- Available in jumbo and lehr end sizes
- All products achieve a minimum impact classification to Class 2(B)2 BS EN 12600 and can also be designed to meet the security glazing standard classifications for manual attack EN 356
- A high acoustic performance can be achieved when used in Insulating Glass Units (IGUs)
- Can also be used to improve noise insulation in a triple glazing construction
- Pilkington **Optiphon™** has a specially developed interlayer for high performance sound insulation

Pilkington **Insulight™** Phon

Pilkington **Insulight™** is the name for Pilkington's own Insulating Glass Unit. This will help to improve sound insulation. However Pilkington **Insulight™** Phon, incorporating Pilkington **Optiphon™**, offers a better solution, providing enhanced sound insulation.

Safety/Security

For safety combined with security without compromising levels of natural daylight, Pilkington offers a choice of glass.

Pilkington toughened safety glass is subjected to a heating and cooling process, which creates high compressive surface stresses to make it up to five times stronger than ordinary annealed float glass of the same thickness.

Pilkington **Optilam**[™] is produced by combining two or more sheets of glass with PVB interlayers, and it is this lamination that enables it to offer impact protection and security. By varying the number of layers and thickness of the glass, increased levels of security can be obtained.

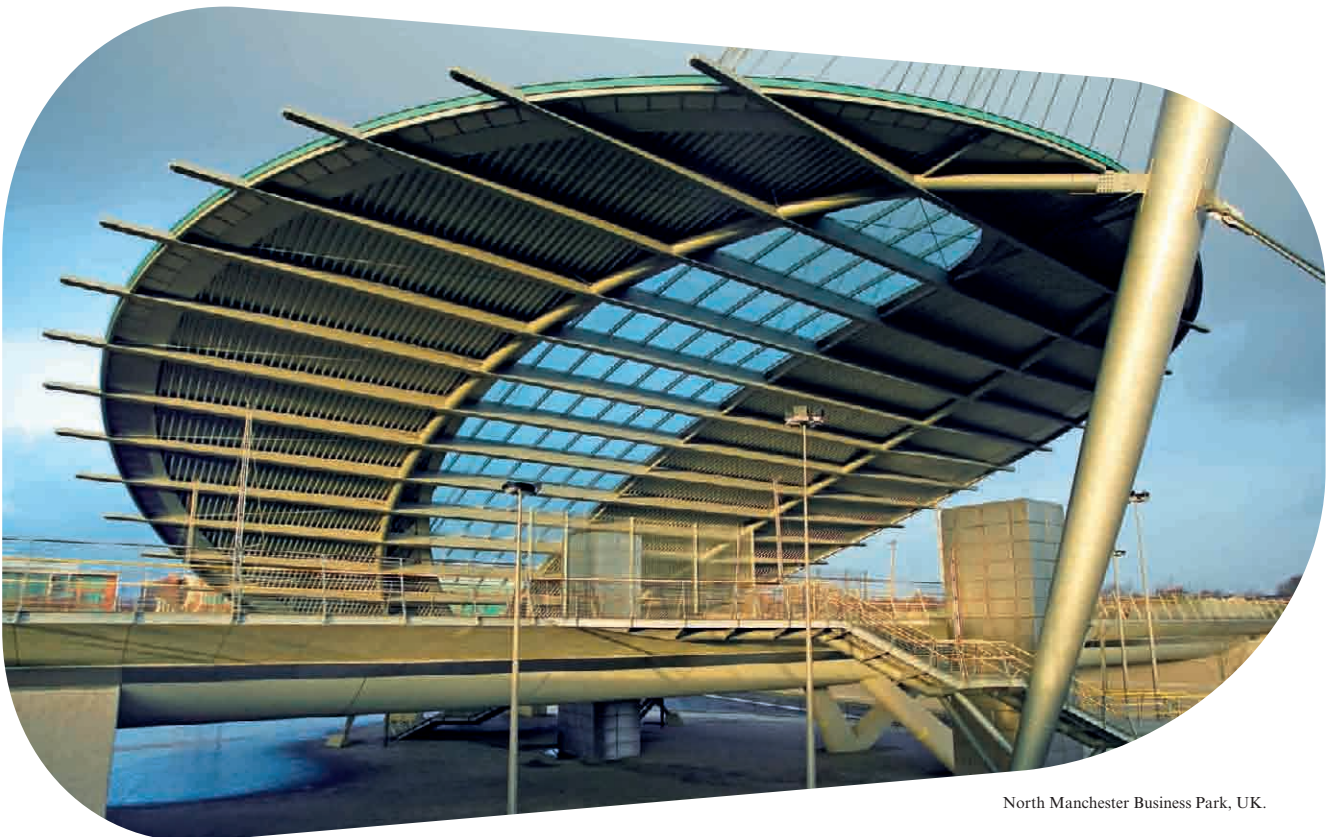
Pilkington's own IGU incorporating Safety and Security is known as Pilkington **Insulight**[™] Protect.

Pilkington Toughened Safety Glass Benefits

- Up to 5 times stronger than annealed glass of the same thickness
- Breaks into small pieces to reduce risk of serious injury
- Up to Class 1(C)1 to BS EN 12600
- Available heat-soaked where required
- Eliminates risk of thermal fracture

Pilkington **Optilam**[™] Benefits

- Remains in position on impact, thus reducing the risk of serious injury
- Resists attack for longer as it remains bonded to the interlayer
- Can be used in IGUs, for different combinations of benefits, such as decorative effects
- Up to Class 1(B)1 to BS EN 12600
- Grades available to meet EN 356



Self-Cleaning Glass



The world's first self-cleaning glass Pilkington **Activ**[™], represents the very latest in glass technology.

Using Pilkington **Optifloat**[™] as a base, Pilkington **Activ**[™] has a specially developed coating on the outside that has an innovative dual action. Once exposed to daylight the coating chemically reacts in two ways. Firstly, it breaks down any 'organic' dirt deposits – such as the organic content of bird droppings and tree sap – and secondly, rain water 'sheets' down the glass to wash the loosened dirt away.

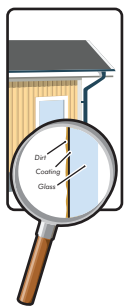


Figure 1:
Coating is activated by UV light
After installation the special coating needs 5 to 7 days exposure to daylight to activate

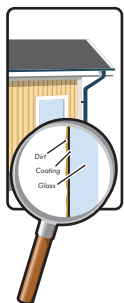


Figure 2:
Organic dirt is broken down
The coating breaks down organic dirt and also reduces the adherence of inorganic dirt

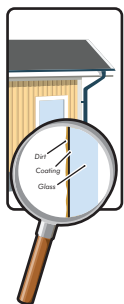


Figure 3:
Rain washes dirt away
Water droplets spread out to form a 'sheet', dirt particles on surface are picked up by water and washed off glass

Pilkington **Activ**[™] Range Benefits

- The world's first self-cleaning glass
- Breaks down and loosens soiling
- In normal use, the coating will not be worn away or rubbed off, and lasts the lifetime of the glass
- Pilkington **Activ**[™] needs only a small amount of UV radiation to activate the coating and remain 'charged' – so it works on overcast days and even during the night
- High light transmission
- Range of products available combining Pilkington **Activ**[™] with other glass types
- Pilkington **Activ**[™] Blue and Pilkington **Activ**[™] Neutral combine self-cleaning and solar control, helping to keep your conservatory cooler in the summer, and warmer in the winter when combined with low-emissivity glass

Dry spells

During prolonged dry spells organic dirt will continue to be broken down, but the lack of rainfall may prevent the washing effect from taking place. Cleaning can be carried out simply by gently hosing the glass with water. This technique can also be used in areas protected from direct rainfall.

A durable coating

As the coating is applied during manufacture, the coating lasts as long as the glass itself.

Pilkington **Activ**[™] meets the durability requirements for a Class A (i.e. surface 1) coated glass in accordance with EN 1096-2.

It also has no effect on the strength of the glass, with only a small reduction in the amount of light and energy that passes through.

The Pilkington **Activ**[™] Range comprises:

Pilkington **Activ**[™] Clear – the original self-cleaning glass with high light transmission.

Pilkington **Activ**[™] Blue – an attractive blue glass that combines dual-action, self-cleaning properties with solar control performance for a cooler internal environment. Its unique blue colour helps keep internal temperatures cooler whilst still maintaining excellent light transmittance.

Pilkington **Activ**[™] Neutral – a neutral coloured glass that combines self-cleaning with solar control. Its coating has a slightly darker grey appearance which helps reduce the transmission of light and heat from the sun.



Where to use Pilkington **Activ**™

Pilkington **Activ**™ can be used in almost any exterior application. It can be installed at any angle ranging from vertical to very shallow, (a minimum of 10 degrees from horizontal) and is especially useful for hard to reach places that are difficult to clean.

However, if rain cannot reach the glass – for example, beneath an overhang – dirt deposits are less likely to be washed away, and the window may need more regular hosing.

Note: Pilkington **Activ**™ is not suitable for internal use.

Pilkington is constantly developing products combining Pilkington **Activ**™ with a range of other glass types for extra versatility and additional benefits. It can, of course, also be used with other products within an IGU.

Energy management

For thermal control, Pilkington **Activ**™ can be incorporated into IGUs with Pilkington **K Glass**™ or the Pilkington **Optitherm**™ range.

For effective solar control, low-emissivity and self-cleaning in commercial buildings, a range of Pilkington **Activ Suncool**™ dual coated products are available. Pilkington offer the widest range of self-cleaning solar control products on the market.

For effective self-cleaning and thermal performance in homes and conservatories, combine Pilkington **Activ**™ Blue or Pilkington **Activ**™ Neutral with Pilkington **K Glass**™ in an IGU. Solar control can also be achieved by using tinted PVB interlayers.

Safety

Due to its special coating being applied during manufacture, the Pilkington **Activ**™ products can be toughened to achieve Class 1 BS EN 12600 impact performance and Class 1 or 2 BS EN 12600 performance in laminated form, offering safety performance with self-cleaning.

Noise control

Pilkington **Activ**™ can be teamed with an acoustic laminated glass, such as Pilkington **Optiphon**™, either as Pilkington **Activ Optiphon**™ or in an IGU providing sound insulation with self-cleaning.

Decoration

Pilkington **Activ**™ and Pilkington **Stippolyte**™ – (one of the patterns from our exclusive Pilkington Texture Glass range) are available combined in laminated form, to provide privacy with self-cleaning and decorative effect.



Decoration

The Pilkington range of decorative glass turns it from a basic construction material into a means of adding style and elegance. By incorporating decorative glass, you can add privacy or meet any other aesthetic or practical requirements.

Pilkington Texture Glass

Offers an extensive choice of designs and finishes, with five levels of obscuration for privacy. Available toughened or laminated for safety or security.

Pilkington Decorative Glass

This includes the Pilkington Oriel range of etched glass, offering a choice of four contemporary designs in clear or patterned glass.

Pilkington Optifloat™ Opal

A high quality translucent float glass that offers high light transmission, excellent privacy and easy handling. It is ideal for creating striking interiors with a lighter touch. It lets in almost as much light as clear glass, but diffuses it to give a natural feel. It offers a high degree of privacy and is suitable for all processes, including brilliant cutting and toughening.

Pilkington Oriel Collection

The Pilkington Oriel collection is our premium range of decorative glass. It comes in a choice of four designs offering charm through to sophistication, enabling the interior of your home to benefit from the natural light-enhancing properties of glass. Each design can be toughened or laminated for safety or security and can be incorporated into Insulating Glass Units for thermal insulation or noise control.

Pilkington's own IGU incorporating Decoration is known as Pilkington **Insulight™** Décor. Please specify this with your performance requirements.

The Pilkington Optimirror™ Range

Pilkington **Optimirror™** Plus is a revolutionary advance in mirror glass technology.

It provides high performance in light reflection and a superior standard of manufacture, and is environmentally-friendly, being copper free and virtually lead free. It can be used across a vast array of buildings and applications including walls, partitions, doors, displays, ceilings, cupboards, wardrobes and other furniture.

Pilkington **Optimirror™** Protect has the features of Pilkington **Optimirror™** Plus with the addition of a special safety film backing to protect against possible injury resulting from breakage. This makes it the ideal choice for applications anywhere in the home where there is a greater risk of accidental damage, e.g. doors, wardrobes and childrens' rooms.



Kindergarten, Warsaw, Poland.

Pilkington Optimirror™ Plus Benefits

- High light reflection of up to 92% in 3 mm thickness
- Completely lead-free top coat and <0.15% lead in the wet basecoat
- Excellent resistance to natural atmospheric corrosion
- Higher corrosion resistance than conventional copper mirrors
- Improved resistance to chemical attack in the form of cleaners and certain adhesives
- No copper and greatly reduced levels of ammonia waste produced in the process
- Complies with European standard EN 1036, the new European standard for quality and durability of mirrors
- Grey and Bronze Tints are available

The additional benefits of Pilkington **Optimirror™** Protect:

- Incorporates special safety film for added impact protection
- Available in 4 mm and 6 mm thicknesses, both of which achieve impact performance
- Easy to cut

Pilkington Spandrel Glass

This extensive range has been developed for use in curtain wall projects, where the specifier is seeking either to match the non-vision spandrel panels to the vision area of glazing or to provide a contrast to the vision area glazing.

The panels are available to match the whole range of visual effects created by the use of tinted or reflective glasses, and can be supplied with or without insulation, and in single glazing as well as Insulating Glass Unit form.

Pilkington Spandrel Glass Benefits

- Total concealment of internal structure or services
- Free from discolouration by internal condensation or deposit of volatiles
- No colour fading
- Ease of installation
- Available toughened to BS EN 12150 to meet impact resistance Class 1 BS EN 12600
- Resistance to corrosion and chemical attack
- Minimal maintenance

Reflection of building on Pilkington Spandrel Glass, Liverpool, UK.



Pilkington Decorative Glass illustrative image.

Pilkington Spandrel Glass Annealed

The world's first cuttable, opaque, coloured glass cladding panel available from stock product. As well as being available in the standard range of colours, Pilkington Spandrel Glass Annealed can be customised to your own bespoke or corporate colour requirements, and offers strong visual impact as a single glazed product.



World Financial Centre, New York, USA.

Glazing Systems

Pilkington **Planar**™

The world's leading structural glass system has evolved from the original patch plate system pioneered by Pilkington over 40 years ago.

With a proven track record in the most demanding applications, the Pilkington **Planar**™ system lets architects create a complete glass envelope for buildings, with façades on any plane. Which means you can build highly attractive working environments with more light and a greater feeling of space. Support structures, located internally or externally, can be as subtle or as dominant as you require. Support can be derived from glass mullions, a conventional steel construction, or the highly versatile Pilkington **Planar**™ Tension Structure design or even a combination of all such schemes.

Quality is assured by the use of Pilkington glass, with fabrication and design carried out in an ISO 9001 certified manufacturing facility in St Helens, UK. Operating under the BBA quality plan and ISO 14001 environmental management system, this factory is the only one in the world that is dedicated solely to structural glass systems. Further reassurance comes from our heritage. As a glass manufacturer since 1826, Pilkington supports constant innovation with sophisticated research and the most rigorous product testing programmes.

Recent additions include:

- Pilkington **Planar**™ Triple – a frameless triple pane Insulating Glass Unit (IGU) which can achieve U values lower than 0.8 W/m²K when using coated glass from the Pilkington range.
- Pilkington **Planar**™ HD – a heavy duty IGU which makes it possible to produce massive spans up to 2.4 m x 4.8 m, with minimal support and without compromising structural integrity.
- Pilkington **Planar**™ Integral – a unique laminated construction developed to achieve a completely flush external surface, enhancing the visual impact of the system and allowing the use of decorative glass options.
- Pilkington **Planar**™ **Activ**™ – combines Pilkington **Planar**™ with Pilkington **Activ**™ allowing designers to create the first ever self-cleaning frameless structural glazing system.

For further detailed information, please visit www.pilkington.co.uk/planar

Planar™ | SentryGlas® System

The latest addition to the Pilkington **Planar™** range is the **Planar™ | SentryGlas®** System, born from a unique collaboration between Pilkington engineers and the scientists at DuPont. This high performance laminated system offers the benefits of:

Planar™ | SentryGlas® System Benefits

- Increased strength
- Reduced weight of glass and structure
- Longer spans with reduced fixings
- Increased safety – even when broken
- Increased durability – even with exposed edges
- Incredible clarity, particularly when combined with Pilkington **Optiwhite™** low-iron glass
- Structural glass fin applications

Applications of the Planar™ | SentryGlas®

System are not just confined to complex projects. Significant benefits can be realised on any project in which increased strength or enhanced appearance are considered to be of importance. The versatility of the **Planar™ | SentryGlas®** System can now match the demands of projects on all levels.

Pilkington Profilit™

The Pilkington **Profilit™** glazing system is a simple yet effective concept that allows excellent light transmission, whilst maintaining privacy. It is a system in which translucent cast glass channels are fitted into an extruded metal perimeter frame, offering exciting design possibilities for internal or external use.

The product extends the versatility of glass façades by offering a wide number of aesthetic and performance options, particularly for curved structures.



55 Water Street, New York, USA.

Pilkington **Profilit™** offers excellent sound insulation and options in colour, texture, installation formats and light diffusion levels, whilst providing an economical but attractive solution for internal and external glass walls, creating both innovative and striking designs.

The key to the popularity of the Pilkington **Profilit™** system is its fundamental simplicity and versatility, allowing imaginative use of natural light, and to create a feeling of space, especially when used for internal applications such as partitioning.



Sports Centre, Jaslo, Poland.

Special Applications

Pilkington also offers a number of products for specialist applications such as Pilkington **Optiwhite™**. The perfect choice in applications that demand maximum light transmission and high clarity, Pilkington **Optiwhite™** is a special low-iron composition of float glass without the faint green tint that appears in standard 'clear' glass. It is particularly beneficial when using thick float glass.

Pilkington **Optiwhite™** is also used in the Pilkington **energiKare™** range for an extra clear appearance in thermal IGUs. Increasing passive solar gain and helping to achieve a minimum C Window Energy Rating in most framing systems.

Pilkington **Optiwhite™** Benefits

- Neutral clear appearance
- Maximum light transmission compared with standard float glass
- High light transmission maintained even in laminated form
- Ideal for display purposes such as shop or showroom façades
- Especially suitable for interior designs where glass edges are left exposed



Lotos Group SA Headquarters, Gdańsk, Poland.



Product manufactured using acrylic castings.

Pilkington **Plateau**™

Pilkington Architectural has supplied glass to the acrylic industry for over 60 years. Pilkington **Plateau**™ products are made from specially toleranced Pilkington **Plateau**™ glass to achieve the higher quality surface and thickness standards demanded by the acrylic casting industry and for other uses.

It can be purchased in a range of different finishes to provide a variety of cast acrylic sheet surface finishes. The standard thicknesses for Pilkington **Plateau**™ are 8 mm, 10 mm and 12 mm in both annealed and toughened form. Other thicknesses can be made on request.

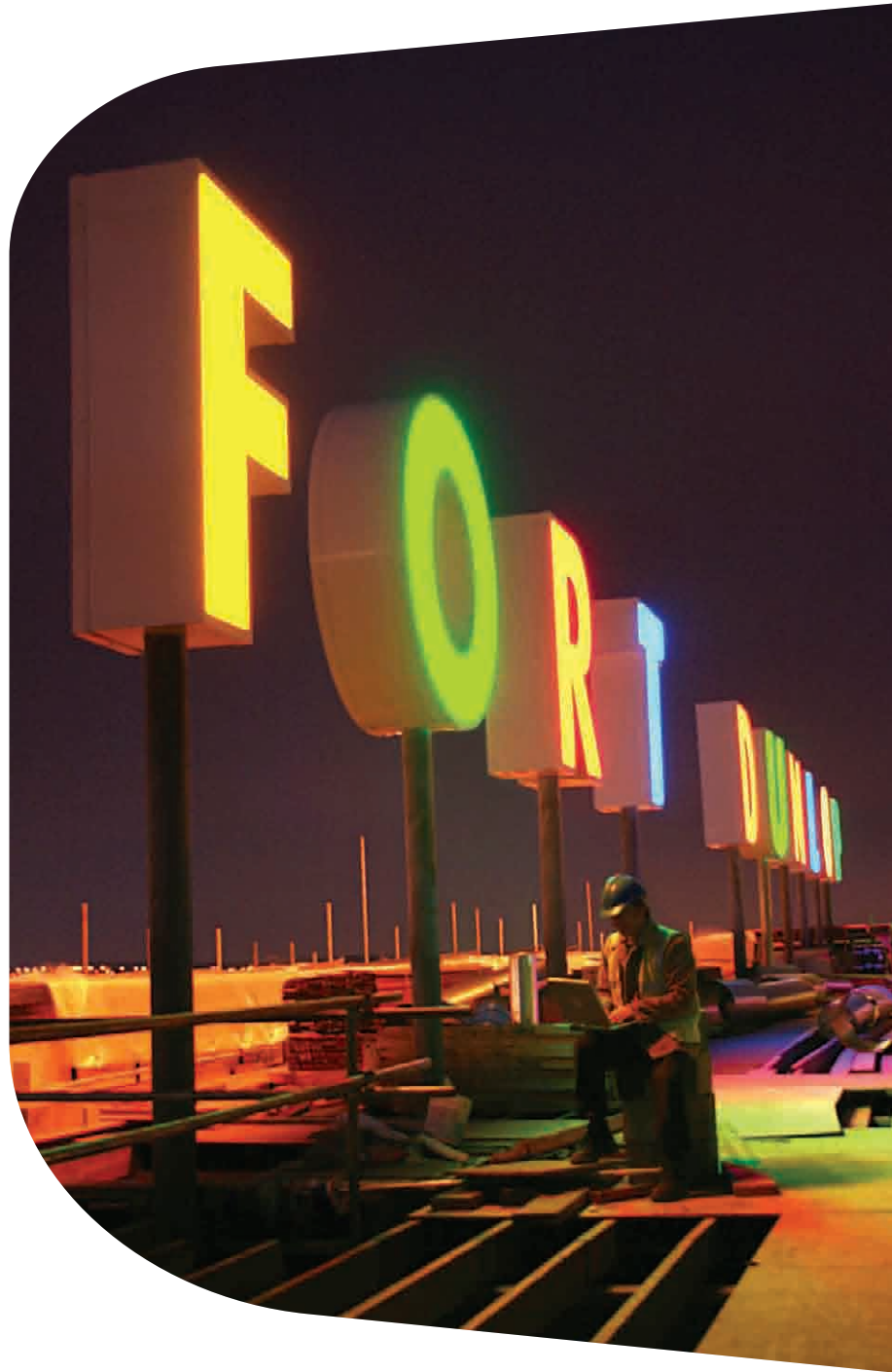
Pilkington **Microfloat**™

Pilkington **Microfloat**™ is an ultra-thin float glass made to exacting standards, suitable for a variety of applications.

Its excellent plane and low tolerances of thickness make it ideal for a wide range of uses, primarily microscope slides but also cosmetic mirrors, chromatographic plates, photomasks, automotive and technical glass, dependent on its thickness.

Pilkington **Galleria**™

Pilkington **Galleria**™ picture framing glass diffuses light across its surface so that instead of harsh, sharp reflexion, the reflected image is reduced to a soft sheen. Framed as close to the picture as possible, Pilkington **Galleria**™ will enhance the visibility of any framed print, photograph or watercolour.



This publication provides only a general description of the products. 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 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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