

Pilkington **Suncool™**
High performance solar control glass range



Pilkington **Suncool™** 50/25

Solar Control

Solar control is a key issue in terms of energy saving. In hot conditions or for buildings with high internal loads, solar control glass is used to minimise solar heat gain by rejecting solar radiation and help control glare. In more temperate conditions it can be used to balance solar control with high levels of natural light.

The topic of air-conditioning is becoming a major concern to building designers and architects. Often, more energy is used to operate air-conditioning systems during the summer months than to heat the building in winter thereby increasing the carbon footprint. It is therefore essential to improve the energy efficiency of buildings during the summer as well as winter.

During the winter, low-emissivity glass can reduce heat loss while allowing high levels of valuable free solar gain to heat buildings with no significant loss in natural light. However, unless combined with solar control, in the summer it can become uncomfortably hot. The correct choice of glass can help to reduce the capital outlay, running costs and associated carbon emissions of a building throughout the year.

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.

We are continually innovating and developing products that satisfy the full range of architectural requirements. Over the years the company has developed a wide range of energy management solutions for large and small glazed areas on all types of building.

NSG Group's innovative solar control glass can be used with many other product types to achieve countless benefits in terms of safety, functionality and cost-efficiency.

How it works

Glass controls solar heat radiation from the sun by reflectance, transmittance and absorptance. For solar control purposes these are defined in terms of the following parameters:

Reflectance – the proportion of solar radiation reflected back into the atmosphere

Direct Transmittance – the proportion of solar radiation transmitted directly through the glass

Absorptance – the proportion of solar radiation absorbed by the glass

Total Transmittance (also known as g value, solar factor or Solar Heat Gain Coefficient) – the proportion of solar radiation transmitted through the glass by all means. This is composed of the direct transmittance and that which is absorbed by the glass and re-radiated inwards

Further parameters given to glass are as follows:

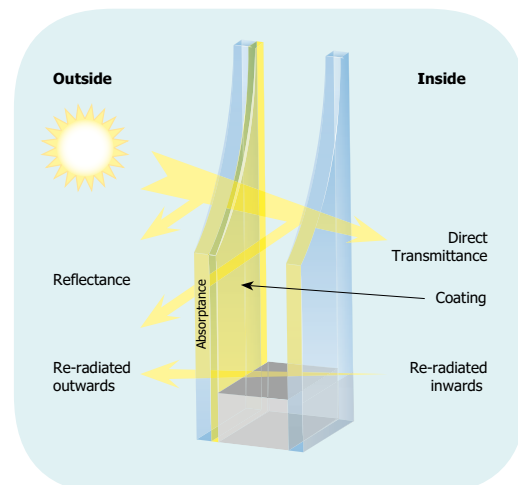
Light transmittance – the proportion of the light that is transmitted by the glass

Light reflectance – the proportion of the light that is reflected by the glass

Total Shading coefficient – the ratio between total solar heat transmittance of the glass and that of a single 3 mm thick clear float glass

Selectivity index – the ratio between light transmittance and total solar heat transmittance

Insulating Glass Unit
incorporating coated
solar control glass



Pilkington **Suncool™** 70/35 OW



Pilkington
Suncool™
70/35

Pilkington **Suncool™** Range

Pilkington **Suncool™** is a range of off-line coated, high performance solar control glass with a wide range of visible light transmittance, reduced solar transmittance and excellent low-emissivity all in one superb product. The excellent solar control properties of Pilkington **Suncool™** greatly reduce the need for air conditioning and artificial lighting within a building, whilst its insulation properties can reduce heat loss to 1.0 W/m²K in a standard Insulating Glass Unit (6-16-6). 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™** glass incorporates a thin, sputtered, metal oxide coating applied off-line. This method is used to obtain different types of coatings to offer a range of properties, increasing freedom of design and aesthetic options and ensuring efficient use of light and heat. Depending on the individual application a wide range of appearance and performance options are available.

Pilkington **Suncool™** products are suitable for commercial and residential applications that demand high light transmission properties. They are designed to achieve optimum performance in large glazed areas and are available in a wide range of performances.

Pilkington **Suncool™** must be incorporated in an Insulating Glass Unit with the coating on the inside surface of the outer pane. The Pilkington **Suncool™** range of products can be used with many other functional solutions, to achieve countless benefits in terms of functionality and cost-efficiency. Pilkington **Suncool™** products are available in annealed, toughened, laminated and sound insulation form and on Pilkington **Optiwhite™** in addition to Pilkington **Optifloat™** Clear substrate.*

Pilkington **Suncool™** Pro T (Toughenable version) is now available locally.

* Pilkington **Optiwhite™** is a low iron glass with improved light and solar transmittance properties. It can be used as the substrate for most Pilkington **Suncool™** products or on its own to take advantage of desirable solar heat and light transmittance. Available on special request.

Product features summary:

- good visible light transmittance with excellent solar control and low-emissivity performance all in one product;
- high level of thermal insulation;
- available in a wide range of appearances and performance options;
- available in conjunction with Pilkington **Optiphon™** laminated version for additional noise control;
- available in annealed, toughened and laminated form, as well as on Pilkington **Optiwhite™**;
- a toughenable version (Pilkington **Suncool™** Pro T) is now available locally, improving lead times and enhancing flexibility;
- range of thicknesses available: 6 mm, 8 mm & 10 mm in annealed and toughened form (12 mm available upon special request);
- laminates available from 6.4 mm to 13.1 mm.



Pilkington **Suncool™** 50/25

The Pilkington **Suncool™** range and appearance

Product	IGU construction (6 mm external pane – 16 mm – 4 mm Pilkington Optifloat™ Clear)		
	Appearance in reflection (External view)	Level of reflection*	Appearance in transmission
Pilkington Suncool™ 71/39	neutral	low	neutral
Pilkington Suncool™ 70/40	neutral	low	neutral
Pilkington Suncool™ 70/35	neutral/blue	medium	neutral
Pilkington Suncool™ 66/33	neutral	medium	neutral
Pilkington Suncool™ Grey 61/32	grey	low	neutral
Pilkington Suncool™ 60/31	neutral	low	neutral
Pilkington Suncool™ 50/25	neutral/blue	medium	neutral
Pilkington Suncool™ Blue 50/27	blue	medium	neutral
Pilkington Suncool™ Silver 50/30	silver	high	neutral
Pilkington Suncool™ 40/22	neutral/blue	medium	neutral
Pilkington Suncool™ 30/16	neutral/blue	high	neutral

* Level of reflection: Low reflection < 15%, Medium reflection 15-25%, High reflection > 25%.

Pilkington **Suncool™** Blue 50/27





Pilkington **Suncool™** 50/25

- Pilkington **Suncool™** 70/40 is particularly suitable for buildings where maximum natural light is required, such as windows in residential housing. This product combines good solar control performance with low external reflection (10%) and high thermal insulation (U_g -value = $1.1 \text{ W/m}^2\text{K}$).
- Pilkington **Suncool™** 71/39 and Pilkington **Suncool™** 70/35 offer very low total solar heat gain and extremely high light transmittance. They also offer outstanding thermal insulation with a U_g -value of $1.0 \text{ W/m}^2\text{K}$ in a standard Insulating Glass Unit.
- Pilkington **Suncool™** 66/33, Pilkington **Suncool™** 60/31 and Pilkington **Suncool™** 50/25 are formulated to comply with the most demanding specifications. They maintain a neutral aspect, adding character to the building and preserving the illumination/comfort of the interior spaces and also offer outstanding thermal insulation with a U_g -value of $1.0 \text{ W/m}^2\text{K}$ in a standard Insulating Glass Unit.



Pilkington
Suncool™
70/40 OW T



Pilkington **Suncool**™ 66/33

- Pilkington **Suncool**™ Grey 61/32 is grey in reflection and offers the lowest reflection level from the entire Pilkington **Suncool**™ range. It combines high light transmittance, good solar control and high thermal insulation (U_g -value = $1.0 \text{ W/m}^2\text{K}$).
- Pilkington **Suncool**™ Blue 50/27 offers very distinctive blue colour in reflection providing at the same time medium level of reflection. It combines reasonably high light transmission with very good solar control and high thermal insulation (U_g -value = $1.0 \text{ W/m}^2\text{K}$).
- Pilkington **Suncool**™ Silver 50/30 is a highly reflective silver in reflection solar control glass suitable for facades where a highly reflective mirrored appearance from the outside is required. It offers high light transmittance, good solar control and low U_g -value of $1.0 \text{ W/m}^2\text{K}$.
- Pilkington **Suncool**™ 40/22 is neutral/blue in reflection, has high-level shading properties and limited heat absorption, reducing the need for toughening in many applications*.
- Pilkington **Suncool**™ 30/16 offers maximum protection against solar radiation and glare. It is designed for use in large façades and horizontal roof structures. The extremely low Solar Heat Gain Coefficient (0.18) makes it suitable for applications where significant solar radiation is an issue. Its reflective properties are suitable for large office building façades.

Often buildings are designed to have glass that appears as natural as possible whilst still providing a high degree of energy management. The Pilkington **Suncool**™ range of neutral transmission products provides a choice of performance whilst staying close to a clear transparent façade. It should be noted that a product with a neutral colour means that the glass has no distinct visible colour. However, as the light transmission is lower, it can have a slightly darker appearance than uncoated glass.

* As each application must be judged individually, a thermal safety check will be required to establish if heat treatment is required for thermal safety reasons.

NEW

Pilkington **Suncool™** Q Range

Pilkington **Suncool™** Q – is a neutral, superior solar control glass range with high colour-stability, low reflection and superb selectivity. The range includes Pilkington **Suncool™** Q 50, Pilkington **Suncool™** Q 60 and Pilkington **Suncool™** Q 70 offering various levels of light transmission and a solar heat gain. All types look homogenous and attractive and can be combined in the same project.

The coating allows maximum natural daylight to enter the building whilst at the same time minimising solar radiation. This provides a more comfortable environment and cost-effective solution for building occupants and developers alike. In addition, its U_g -value of only 0.7* W/m²K, combined with the lowest reflectance on the market at only 8-10%** and colour-stability from all viewing angles, ensures a visually stunning façade.

Product features summary:

- neutral appearance;
- low reflection;
- superb selectivity;
- high colour-stability from all angles;
- standard sizes: 6000 × 3210 mm and 3210 × 2550 mm;
- thicknesses: 4-10*** mm;
- laminated version: Pilkington **Suncool Optilam™** Q in thicknesses of 6.4-13.1*** mm;
- other sizes, thicknesses and Pilkington **Optiwhite™** low-iron substrate available on request;
- Pilkington **Suncool™** Q can also be combined with other Pilkington glass products, such as Pilkington **Optitherm™** S3 low-e and others to provide additional functionality.

* in a triple-glazed IGU (6 mm Pilkington **Suncool™** Q – 12 mm argon – 4 mm Pilkington **Optifloat™** Clear – 12 mm argon – 4 mm Pilkington **Optitherm™** S3)

** in a double-glazed IGU (6 mm Pilkington **Suncool™** Q – 16 mm argon – 4 mm Pilkington **Optifloat™** Clear)

*** other thicknesses on request

The Pilkington **Suncool™** Q Range appearance

Product	IGU construction (6 mm external pane – 16 mm – 4 mm Pilkington Optifloat™ Clear)		
	Appearance in reflection (External view)	Level of reflection*	Appearance in transmission
Pilkington Suncool™ Q 70	neutral	low	neutral
Pilkington Suncool™ Q 60	neutral	low	neutral
Pilkington Suncool™ Q 50	neutral	low	neutral

* Level of reflection: Low reflection < 15%, Medium reflection 15-25%, High reflection > 25%.



Pilkington **Suncool™** Q 60



Pilkington **Suncool™** One 30/21

Pilkington **Suncool™** One

Pilkington **Suncool™** One 60/40 and Pilkington **Suncool™** One 30/21 are off-line coated mid-range solar control products.

They combine excellent low-e properties with medium solar control performance. They are very versatile and can be used in both commercial and residential applications such as schools, building facades, bi-folding doors and other large glazed areas.

Product features summary:

- suitable for both commercial and residential applications, e.g. bi-fold doors, schools, glass facades;
- low internal reflection – improving the external view;
- neutral external appearance;
- must be incorporated into an IGU;
- available in 4 mm*, 6 mm, 8 mm, 10 mm** and 12 mm** substrate thickness.

* Pilkington **Suncool™** One 60/40 only

** Pilkington **Suncool™** One 30/21 only
12 mm available on special request

The Pilkington **Suncool™** One range and appearance

Product	IGU construction (6 mm external pane – 16 mm – 4 mm Pilkington Optifloat™ Clear)		
	Appearance in reflection (External view)	Level of reflection*	Appearance in transmission
Pilkington Suncool™ One 60/40	neutral	medium	neutral
Pilkington Suncool™ One 30/21	neutral	high	neutral

* Level of reflection: Low reflection < 15%, Medium reflection 15-25%, High reflection > 25%.

An infinite number of combinations for multi-functional glass

Pilkington **Suncool™** products are also available on Pilkington **Optiwhite™***, low-iron substrate which will offer higher light transmission and lower absorption than on standard float glass.

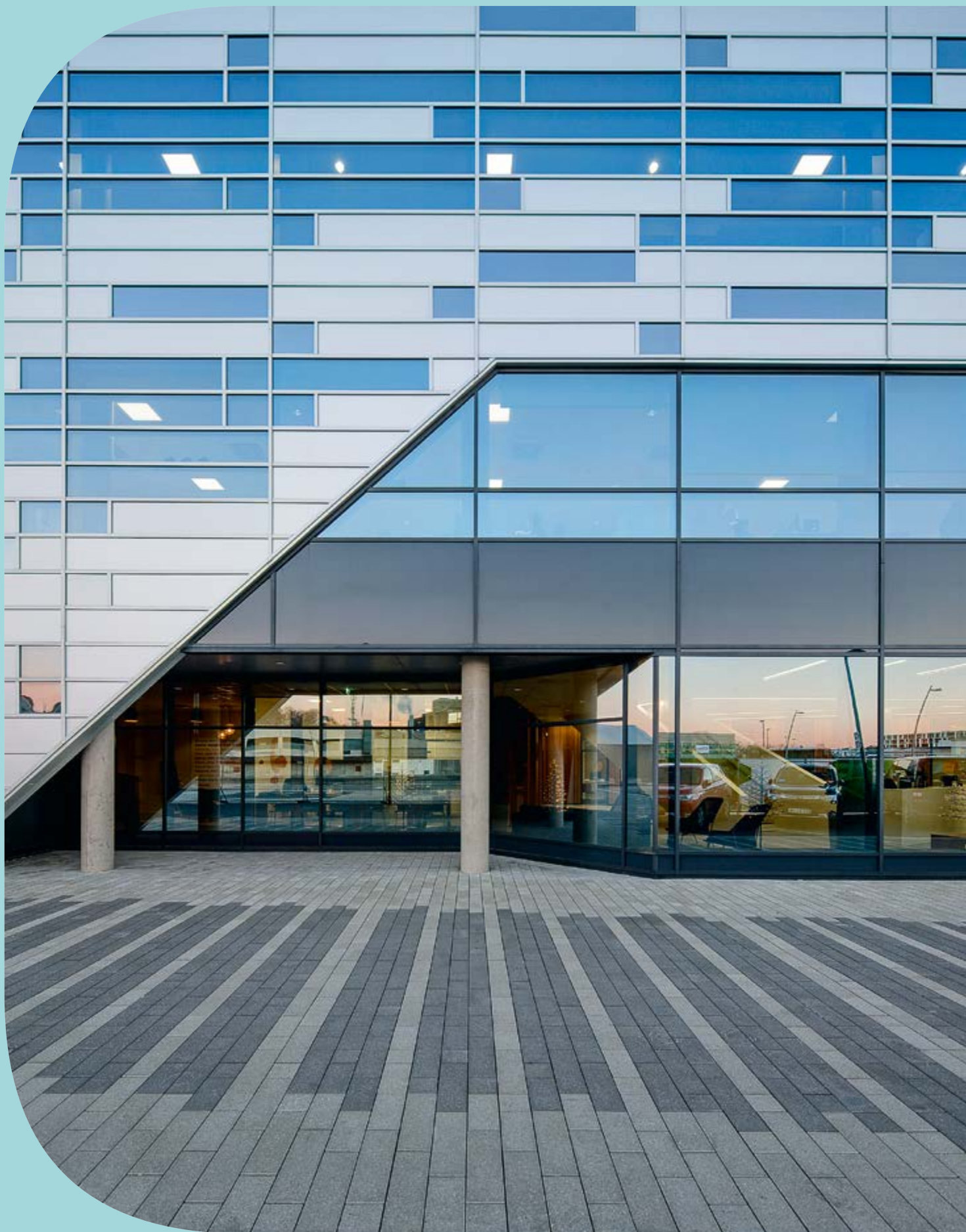
Pilkington **Suncool™** products are designed to be used as the outer pane of an Insulating Glass Unit, with the coating on surface 2, and can be combined with many other Pilkington products:

- **Safety/Security:** Pilkington **Suncool™** glass products can be ordered in laminated or toughened form. The Pilkington **Suncool Optilam™** laminated glass is available in thicknesses of 6.4 mm to 13.1 mm to comply with safety and security requirements. The toughened Pilkington **Suncool™** glass offers impact and thermal stress resistance.
- **Noise control:** Pilkington **Suncool Optiphon™**, the acoustic laminated version, combines sound insulation and impact resistance in thicknesses from 6.8 mm to 13.1 mm.
- **Self-cleaning:** many of the Pilkington **Suncool™** products are available in conjunction with the Pilkington self-cleaning coating on surface 1 (external surface), within the Pilkington **Activ Suncool™** product range. The result is a glass product with a coating on both surfaces; it combines self-cleaning, solar control and thermal insulation properties. Thicknesses of 6 mm to 8 mm are available.
- **Spandrel Glass:** NSG Group has developed a range of Spandrel products for use with Pilkington **Suncool™** solar control glass to ensure continuity in the aesthetic design of façades.

* On special request.



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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, codes 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. Pilkington, "Suncool", "Optifloat", "Optiwhite", "Optitherm" and "Optiphon" are trademarks owned by Nippon Sheet Glass Co. Ltd, or a subsidiary thereof.



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