



PLANITHERM TOTAL+

Advanced performance low-E glass

PLANITHERM® TOTAL+

ADVANCED PERFORMANCE LOW-E GLASS

Our latest generation of Planitherm Total+ represents an advanced performance low-emissivity (low-E) coating.

Planitherm Total+ is a high performance low-E glass developed and manufactured in the UK, specifically for the particular needs of the UK market. It has been optimised for even better Window Energy Ratings (WERs) and as such is one of the most energy efficient window glass products available today.

Using the very latest advancements in magnetron coating technology from Saint-Gobain Glass UK & Ireland, this new coating combines much improved processing qualities and performance, whilst maintaining the excellent aesthetics that are expected from the Planitherm range.





PLANITHERM TOTAL+

U - value

1.2 W/m²K

Light Transmittance

79%

Light Reflectance

13%

Solar Factor

71%

(4(16)4 unit with 90% argon gas filling)

APPLICATIONS

Planitherm Total+ is an extremely versatile low-E solution suitable for a wide range of domestic applications:

RESIDENTIAL:

- Windows and skylights
- Patio doors, French doors and other external doors

DESCRIPTION

Planitherm Total+ is manufactured on the Saint-Gobain Glass UK & Ireland magnetron coater. A unique combination of multiple metal oxide layers are applied to high quality Planiclear clear float glass using a magnetically enhanced cathodic sputtering process under vacuum conditions. The resultant microscopically thin and transparent metallic coating very effectively reflects long-wave heat radiation back into a room, thereby retaining heat within a building, whilst maximising natural light transmission and natural solar gain.

BENEFITS

Planitherm Total+ offers a number of key benefits that clearly differentiate it from other low-E products, helping to give processors and window fabricators an added edge in an increasingly discerning and competitive market:

BENEFITS FOR GLASS PROCESSORS:

- Planitherm Total+ is a 'single stock' product; the same version can be used in either annealed or toughened form.
- This significantly reduces stockholdings, reducing working capital, freeing up warehouse space, as well as simplifying logistics and production planning.
- The latest Planitherm Total+ has been developed to significantly improve its durability and ease of processing helping to ensure that finished units are of the highest quality.
- As a durable, single version product, Planitherm Total+ can help to improve processing optimisation in terms of cutting, planning, and 'right first time' yields.
- Produced at the Saint-Gobain Glass UK & Ireland float plant in Eggborough on the magnetron coater, Planitherm Total+ is available in a full range of thicknesses and dimensions.

BENEFITS FOR FABRICATORS/ CONSUMERS:

Enhanced Thermal Insulation

Double glazed units incorporating Planitherm Total+ (4(16)4 double glazed unit with Planitherm Total+ on face 3 and 90% argon gas filling) offer more than double the insulation, compared to a 4(16)4 uncoated double glazed unit filled with air:

- Considerable reductions in heating bills.
- Eliminates cold areas around windows.
- Maximises the amount of natural light into the home, without haze or tint effects.
- Helps ensure compliance with current Building Regulations requirements for most frame types and designs.

- Exceptional Window Energy Rating performance thanks to the optimised balance between a very low U-value and high solar gain.

Neutral Appearance

The Planitherm coating is remarkably neutral in both transmission and reflection as opposed to traditional hard coated low-E products which typically suffer from a noticeable tint:

- White curtains remain looking white from outside.
- No discolouration of Georgian bars.

Exceptional Clarity

Planitherm Total+ offers a high level of light transmittance, maximising the entry of natural daylight into the building. This type of coating also benefits from the lack of 'haze effect' commonly associated with hard coated products.

Brand Marketing Support

By offering Planitherm Total+ fabricators and installers can sign up to be part of our unique Planitherm Network, accessing a wealth of marketing support materials and tools to help them differentiate their offer.

RANGE

STOCK SIZES

Thickness	Standard sizes
4mm	3210 x 6000
	3210 x 2550
	3210 x 2250
6mm	3210 x 6000
	3210 x 2550
	3210 x 2250
6.4mm (33.1)	3210 x 2550
6.8mm (33.2)	3210 x 2550

ENHANCED THERMAL INSULATION

Planitherm Total+ is an offline coated low-E glass that can be used as a single version in both annealed and toughened form. Critically, once toughened, the coating retains the same technical characteristics and aesthetic qualities. For applications requiring safety glass Planitherm Total+ can be readily toughened to meet the requirements of BS EN 12150.

LAMINATED GLASS

Planitherm Total+ is available as Stadip and Stadip protect laminated glass in most common configurations. Laminated glass offers safety and security performance as well as UV filtration.



PROCESSING

Planitherm Total+ must always be assembled in to a double glazed unit (DGU) or triple glazed unit (TGU). The coating is generally placed on face 3 for DGU (or face 3/5 for TGU), though it is possible to place the coating on face 2 without affecting the U-value. Appearance may vary slightly, so it is important to maintain consistent coating positioning throughout a particular façade.



Full guidance on handling and processing Planitherm products are detailed in a separate document available from Saint-Gobain Glass UK & Ireland.

TRIPLE GLAZING

Thanks to its optimised balance of solar gain (g-value) and thermal insulation (U-value), Planitherm Total+ is ideally suited to triple glazing applications. Typically the coating is positioned on face 3 and 5 of the insulating glass unit (IGU) to provide the best Window Energy Rating performance. Triple-glazing also provides even more advanced thermal insulation properties with U-values as low as 0.6 W/m²K. It is recommended that the centre pane is always toughened for thermal safety reasons.

PRODUCT COMBINATIONS

By combining Planitherm Total+ with other specialist glass products available from the Saint-Gobain Glass UK & Ireland range, a multitude of high performance, multi-functional glazing solutions can be achieved.

SOLAR CONTROL GLAZING

The Cool-Lite family presents an extensive range of solar control solutions, designed to reduce solar heat gain, thereby reducing reliance on ventilation and air conditioning systems.

LOW-MAINTENANCE GLAZING

Bioclean can be combined with Planitherm Total+ to add effective low-maintenance properties to a double glazed unit.

ACOUSTIC GLAZING

Stadip Silence is an acoustic polyvinyl butyral (PVB) laminated glass, which noticeably reduces noise whilst also offering the same safety and security characteristics as laminated glass.

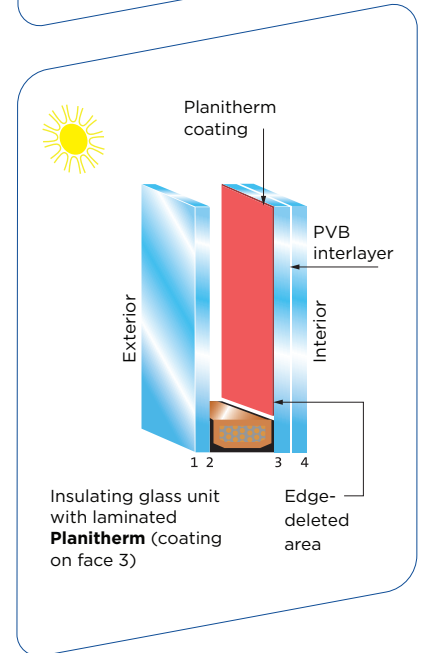
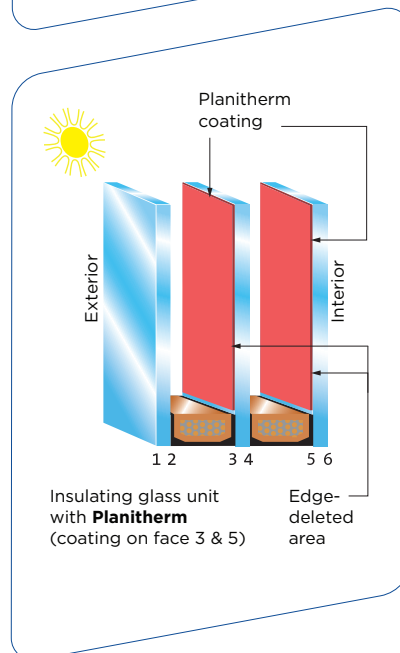
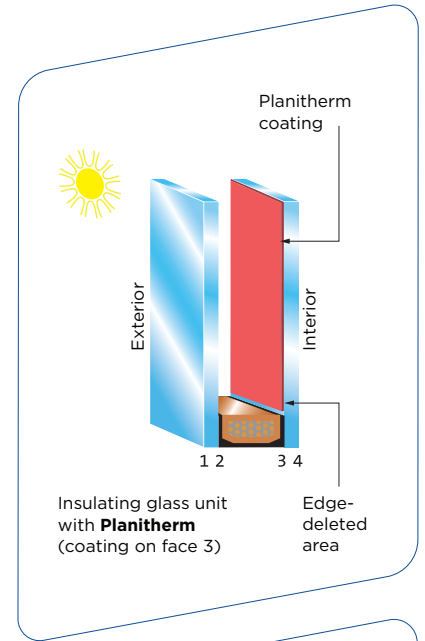
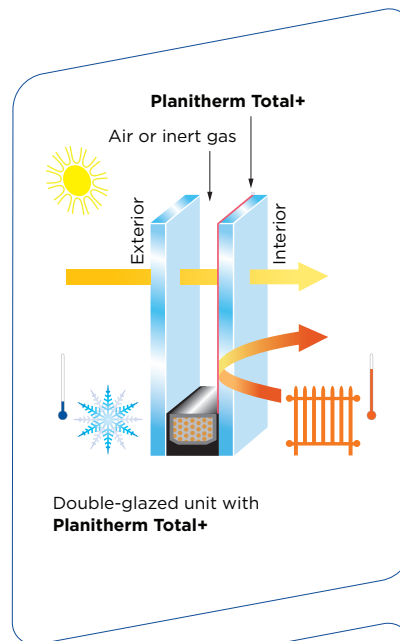
VISION CONTROL

Decorglass is a range of traditional patterned glass with varying obscuration levels which can be combined with Planitherm Total+ to offer privacy in various applications.

Masterglass (a range of contemporary geometric textured glass) and Satinovo Matt (acid- etched glass) offer further design possibilities for commercial or domestic applications.

WINDOW ENERGY RATINGS

Combining Planitherm Total+ with Diamant low-iron glass in the outer pane can improve the energy index of a given window by further increasing solar gain.



BUILDING REGULATIONS

Planitherm Total+ is the ideal low-E solution for compliance with Building Regulations relating to energy efficiency in England, Wales and the Republic of Ireland (Part L), Scotland (Section 6) and Northern Ireland (Part F).

WHOLE WINDOW U-VALUES

Thanks to its superior thermal insulating performance, Planitherm Total+ enables a wider range of frame types and designs to meet mandatory maximum and/or area weighted average whole window U-value requirements, affording greater flexibility to architects, specifiers and fabricators.

TECHNICAL SPECIFICATIONS

WINDOW ENERGY RATINGS

With its optimised balance of very low emissivity and high solar gain Planitherm Total+ is one of the most energy efficient low-E glazing products available under the British Fenestration Rating Council Window Energy Rating scheme.

This performance advantage can help fabricators and installers comfortably meet the Window Energy Rating band B requirements of Document L of the Building Regulations using standard double glazed units for the majority of windows. Indeed many standard window designs will now achieve a minimum B rating, allowing for application to be endorsed by the Energy Savings Trust, with the added ability to reach A+ ratings using double or triple glazing (depending on the complete window system).

PERFORMANCE DATA

	Double Glazed Unit (DGU)		Triple Glazed Unit (TGU)	
	Planitherm Total+			
Internal Pane				
External Pane	Planiclear	Diamant	Planiclear	Diamant
Composition in mm	4(16)4		4(16)4(16)4	
Low-Emissivity Coating Position	Face 3		Face 3 & 5	
Light Transmittance, T_L	79%	80%	69%	70%
Light Reflectance, External, R_{Le}	13%		17%	
Light Reflectance, Internal, R_{Li}	13%		17%	
Solar Energy Transmittance, T_e	62%	63%	49%	50%
Solar Energy Reflectance, External, R_{ee}	22%	23%	26%	28%
Solar Factor, g Value (Argon (90%))	0.71	0.73	0.61	0.63
U-value in $W/m^2.K^*$ (Argon (90%))	1.2		0.6	

PLANITHERM TOTAL+ meets the durability requirements of class C of European Standard EN 1096 and is CE and UKCA marked. Light and solar performance according to EN 410.

* Centre-pane U-values have been rounded in accordance with EN 673.

For Window Energy Ratings, simulators should calculate whole window U-values from first principles using normal surface emissivity ($E=0.05$). Performance data calculated using Calumen III 1.26 and is correct at the time of publishing (29.08.2023) but is subject to change at any time.



SAINT-GOBAIN GLASS

Weeland Road
Eggborough
East Riding of Yorkshire
DN14 0FD UK

saint-gobain-glass.co.uk

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