

PLANITHERM® TOTAL+

ADVANCED PERFORMANCE

LOW-E GLASS



SAINT-GOBAIN GLASS UK & IRELAND



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Our latest generation of PLANITHERM TOTAL+ represents an advanced performance low-emissivity (low-E) coating from the UK & Ireland's leading low-E coating brand.

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.

MARKETING CAMPAIGN TO PROMOTE THE COMFORT BENEFITS OF GLASS

Since 2011, Saint-Gobain Glass UK & Ireland has orchestrated a high-impact marketing campaign, utilising direct mail, new campaign-based websites, e-mail, PR and advertising (TV, radio and press).

This exciting and significant promotion has supported the industry by changing the end-consumers awareness of the comfort benefits of glass and has elevated PLANITHERM TOTAL+ to one of the most recognised low-E coating brands in the market.

Created in response to consumer demand, the Planitherm Network is a nationwide group of like-minded window fabricators and installers who supply PLANITHERM.

Fabricators and Installers can sign-up by visiting our dedicated website www.planitherm.com

Free to join, all members receive a host of great support initiatives.

- ✓ Free Member Profile on our consumer site www.planitherm.com
- ✓ Consumer enquiries directed to members
- ✓ Free Toolkit of Marketing materials
- ✓ Free Planitherm literature and showroom materials
- ✓ Free training films that explain the range of Planitherm glazing packages
- ✓ Free membership certificate
- ✓ Competitions and reward opportunities



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+ offer more than double the insulation compared to older-style double glazing and significantly better thermal insulation compared to hard coated low-E products:

- 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 to reduce condensation on the inner pane.
- environmentally friendly solution, given the lower CO₂ emissions associated with reduced energy consumption.
- 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.

PLANITHERM
TOTAL+

U - value

1.2 W/m²K

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

Light Transmittance

79%

Light Reflectance

13%

Solar Factor

73%



RANGE

STOCK SIZES

| Thickness | Standard Sizes |
|--------------|----------------|
| 4mm | 3210 x 6000 |
| 6mm | 3210 x 2550 |
| 6.4mm (33.1) | 3210 x 2250 |
| 6.8mm (33.2) | 3210 x 6000 |
| | 3210 x 2550 |
| 8mm / 10mm | 3210 x 6000 |

Toughened Glass:

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 into a double or triple glazed unit. 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 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 self-cleaning properties to a double glazed unit. This product combination offers a significantly more neutral and less reflective solution compared to equivalent products currently available on the market.

• Acoustic Glazing

STADIP SILENCE is an acoustic PVB laminated glass, which noticeably reduces noise whilst also offering the same safety and security characteristics as laminated glass.

• Vision Control

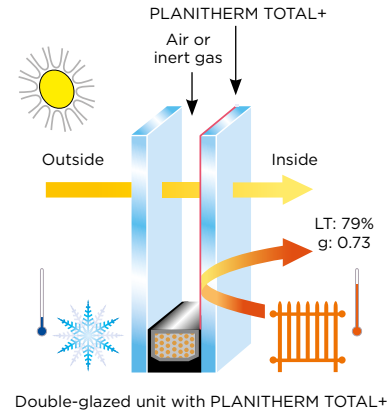
DECORGLASS is a range of traditional patterned glass with varying obscuration levels which can be combined with PLANITHERM TOTAL+ to offer privacy in various applications. MASTERGLASS (a range of contemporary geometric textured glass) and SATINOVO MATT (acid-etched glass) offer further design possibilities for commercial or domestic applications.

• Window Energy Ratings

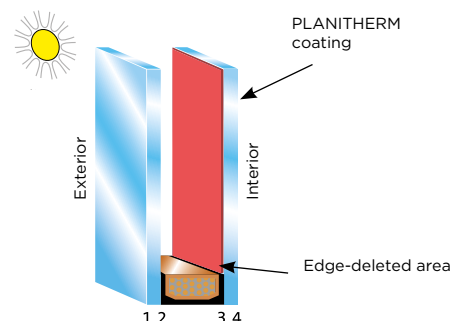
Combining PLANITHERM TOTAL+ with DIAMANT low-iron glass in the outer pane can improve the energy index of a given window by further increasing solar gain.

• Anti-Condensation

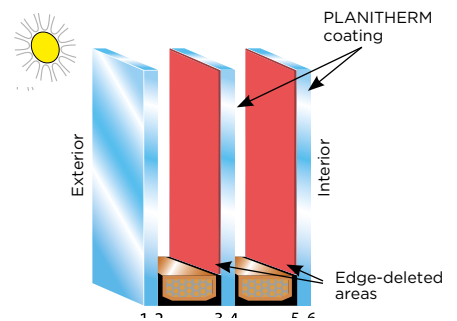
VIEWCLEAR II is a neutral anti-condensation coating designed to significantly reduce the number of days where external condensation may occur on an insulating glazing unit.



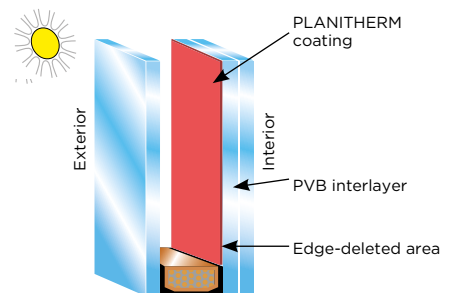
Double-glazed unit with PLANITHERM TOTAL+



Insulating glass unit with PLANITHERM (coating on face 3)



Insulating glass unit with PLANITHERM (coating on faces 3 and 5)



Insulating glass unit with laminated PLANITHERM (coating on face 3)

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.

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 BFRC Window Energy Rating scheme.

This performance advantage can help fabricators and installers comfortably meet the Window Energy Rating band C (or better) 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 (see overleaf), with the added ability to reach A+ ratings using double or triple glazing (depending on the complete window system).

TECHNICAL SPECIFICATIONS

| PERFORMANCE DATA | | | | |
|--|-------------------|---------|-------------|---------|
| | DGU | | TGU | |
| Internal Pane | PLANITHERM TOTAL+ | | | |
| 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 _{L,e} | 13% | | 17% | |
| Light Reflectance, Internal, R _{L,i} | 12% | | 15% | |
| Solar Energy Transmittance, T _s | 64% | 66% | 51% | 53% |
| Solar Energy Reflectance, External, R _{s,e} | 20% | 21% | 25% | 27% |
| Solar Factor, g Value (Argon (90%)) | 0.73 | 0.75 | 0.63 | 0.64 |
| U-value in W/m ² K** (Argon) | 1.2 | | 0.6 | |

PLANITHERM TOTAL+ meets the durability requirements of class C of European standards EN 1096 and is **CE** 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 principals using normal surface emissivity (ε = 0.05)

ENERGY SAVING TRUST

The Energy Saving Recommended logo has been developed by the Energy Saving Trust to distinguish the most energy efficient products on the market.

The Energy Saving Trust is an independent, non-profit making organisation backed by the Government. Its aim is to cut emissions of carbon dioxide (CO₂) - the main greenhouse gas causing climate change - by promoting the sustainable and efficient use of energy.

Windows with a B rating or higher are eligible to be endorsed by the Energy Saving Trust and (subject to approval) to use the Energy Saving Recommended logo.

High performance low-E glass products such as PLANITHERM TOTAL+ are recognised as being an essential component in improving the energy efficiency of windows and can help windows to qualify for Energy Saving Recommended status.



Certification mark

BIOCLEAN, COOL-LITE, DECORGLASS, MASTERGLASS, PLANICLEAR, PLANITHERM, SATINOVO MATT, STADIP, STADIP PROTECT, STADIP SILENCE add VIEWCLEAR and all other devices and logos are registered trademarks of Saint-Gobain.



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