

SMARTGLASS® by name. SMARTGLASS® by nature.



SMARTGLASS® is a revelation.

This is a range of intelligent glazing solutions for the next generation of conservatories, atriums, garden rooms, orangeries and lantern roofs.

Welcome to
SMARTGLASS®

Intelligent Glazing



There is a growing demand by consumers for better performing conservatory roofing systems and that's why we've developed our SMARTGLASS® range to be unsurpassed in terms of product quality, innovation and performance.



Like its name suggests, SMARTGLASS® is indeed intelligent. It's far quieter than the polycarbonate glazing sheets used historically and does much more to regulate the temperature in a conservatory so it can be used all year round. It reflects the unwanted heat and glare from the sun in the summer, yet helps retain warmth during the winter months and is almost three times as efficient as standard double glazing in this regard.

There are a number of different SMARTGLASS® options for conservatories and other glazed roofs, including our latest offerings for the windows and doors of a conservatory.

SMARTGLASS® Tints

We've built considerable expertise in developing our range of intelligent glazing over the last decade, and in doing so learnt that as consumers we're always looking for choice. Our SMARTGLASS® range therefore comes not only in a tier of three performance levels, but all except the ultimate product can be specified in one of four different colour configurations.

The four different tints in our SMARTGLASS® range are suited to a wide range of applications, all with the option to upgrade to higher levels of performance for warmer regions or South facing elevations which receive far more sunlight. While the subtle sky blue remains the most popular choice, others also like the greenish tones of our aqua tint. Many consumers choosing a woodgrained conservatory look to the warm tones of our bronze SMARTGLASS®, whilst those looking for a more natural hue, look to our neutral tint.



Aqua



Blue



Neutral



Bronze



SMARTGLASS®

Proven Performance

Standard SMARTGLASS® remains our most popular roof product and has been continually developed, enhanced and upgraded over the last decade. We have many thousands of satisfied consumers from all over the UK and it's comforting to know that we supply many of the UK's largest and most trusted conservatory brands with our revolutionary SMARTGLASS®, in its four subtle tints.

Because it is possible to accurately evaluate each one of the key properties of SMARTGLASS®, we're confident that the product we make and install performs as good in situ as it does on paper. With a U-value of 1.2 W/m²K it helps minimise heat loss in the winter months, whilst a typical G-value of 40% means that 60% of the sun's heat is reflected back, helping to reduce heat build-up during the summer months.

With visible light transmittance of around 50% your conservatory will feel open and airy, yet benefit from the anti-glare properties inherent in SMARTGLASS®. There's also true self-cleaning and warm edge technologies built in to all our roof glass products as standard.



SMARTGLASS® Plus+

Enhanced Performance

For those consumers looking for enhanced performance, SMARTGLASS® Plus+ is the perfect choice, offering a class-leading U-value of just 1.0 W/m²K and typically reflecting 73% of the sun's heat, a particular benefit for

South facing and exposed elevations. Like our standard SMARTGLASS® range, this enhanced version benefits from true self-cleaning and warm edge technologies, along with four subtle tint options.



SMARTGLASS® Ultimate A Technological Benchmark

SMARTGLASS® Ultimate represents the very pinnacle in terms of glass technologies for conservatory and glazed roofing areas and is unsurpassed in the UK market. This glass is a product of our on-going development programme and designed by the same team that is currently working on tomorrow's glazing solutions, including the latest dynamically switchable glass.

This market-leading glass boasts a U-value of 1.0 W/m²K, the ability to reflect 80% of the sun's rays and yet still provides a visible light transmittance of 27%, ensuring the spacious and open feel isn't compromised in the search for solar control. SMARTGLASS® Ultimate naturally comes with true self-cleaning and warm edge technologies, and is exclusively available in our popular cool blue tint.

Replacement Conservatories

There's an estimated 3 million conservatories in the UK, with around 500,000 in need of upgrade or repair and the market for replacements is now emerging. These first generation conservatories have now come to the end of their useful life and now consumers are looking to the latest glass technologies for replacement projects.



A new conservatory roof will not only look good, but with SMARTGLASS® will perform as an all-year round room. It's one of the most cost-effective ways in which to re-discover lost space in any home, helping to add value to your property and indeed to the lives of those within it. These second time conservatory purchasers understand the need of adding a little intelligent glazing to their new room and SMARTGLASS® has proven to be the perfect choice.



SMARTGLASS® -W

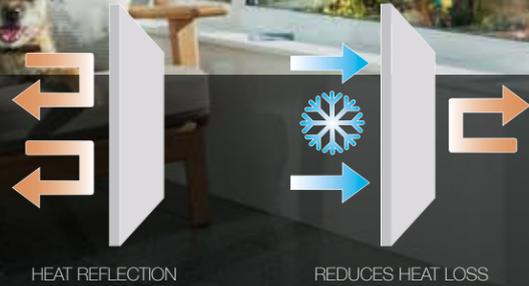
For Side Frames

While much of the focus remains on the performance of the conservatory roof and fundamentally the glass within it, more and more consumers are looking carefully at the performance of the windows and doors under their roof. Although the modern energy rated sealed units now available for standard domestic applications are good, they are not designed for a room that is made almost exclusively of glass.

As a result we have spent considerable time researching and developing a range of revolutionary glass for side frames (doors and windows), and our solution is SMARTGLASS® -W. Like our roofs, one of the key attributes of this dedicated range is its solar control properties - SMARTGLASS® -W is unobtrusive, just looking and feeling like normal glass yet is able to reflect twice the amount of solar energy as typical double glazing.

Moving up the range, SMARTGLASS® -W Plus+ offers enhanced sound reduction, increased security and blocks out 98% of the sun's harmful UV rays, whilst premium SMARTGLASS® -W Ultimate offers all this and true self cleaning technology, helping to keep your view of the world outside beautifully clear.





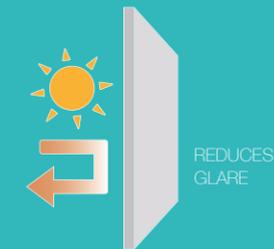
Solar Control All year round

Solar control by its very definition involves the regulation of the sun's rays within any environment and this is fundamentally important within any conservatory or living area with a glazed roof. The solar control and subtle tint in SMARTGLASS® reflects up to 80% of the sun's radiant heat during the summer months, dramatically reducing the unwanted build up of heat that has plagued the first

generation of conservatories over the years.

Using a modern low E coating, argon gas and warm edge technology, a typical conservatory roof glazed with SMARTGLASS® is able to retain warmth in the winter months, twice as well as standard glazing and almost 50% better than traditional energy saving glass, such as Pilkington K.

Anti Glare On the sunniest of days



Whilst the conservatory is the best room in the house to enjoy the sun and light of the summer, at the same time the glare from the sun can be an issue. SMARTGLASS® is designed to dramatically reduce the glare of the sun, reflecting typically over 60% of visible light and filtering out harmful UV rays. The result is a light and airy room, enhanced in tone by one of our four subtle tints.

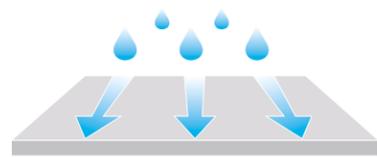
If it's a conservatory or room with a glazed roof that's South facing, then our advice would be to upgrade to SMARTGLASS® Plus+ or even SMARTGLASS® Ultimate for the very best in solar control and the reduction in excessive glare from the sun's rays.



True Self Clean Properties

Using a new generation of 'photo catalytic' self-cleaning glass, SMARTGLASS® is able to offer the ultimate in low maintenance technology. Each one of our SMARTGLASS® units is manufactured with an invisible dual action coating to the outer face, which first acts by harnessing the ultraviolet energy in ordinary daylight to power a chemical reaction that breaks down organic dirt. Secondly, rather than forming droplets, under rainfall this technology allows for the water to 'sheet off' the glass, carrying the dirt away with it.

This technology has been developed by one of the largest global glass manufacturers who over years have invested £millions into new and proven glass technologies. It is our market focus combined with the resources of these companies that will also allow us to develop tomorrow's specialist SMARTGLASS® for conservatories and glazed roofs.



NORMAL GLASS

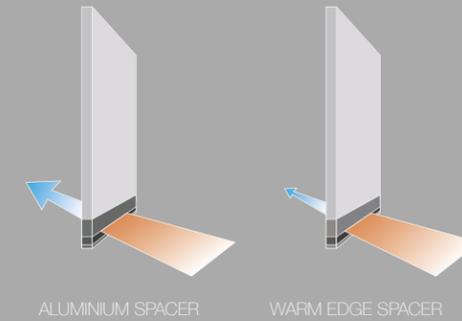


SMARTGLASS®



Warm Edge Technology

Condensation has plagued windows for many decades now and that includes recent years in double glazing where the glass may be advanced, but the material separating the two panes in a double glazed unit is not. This is because no matter how efficient the double glazed unit may be at the centre, the metallic spacer bar at the edges acts as a bridge, allowing the cold to pass through and 80% of the energy lost through a window occurs here for this reason.



To eliminate this phenomenon, SMARTGLASS® uses 'Warm Edge Technology' - the use of a spacer bar that is up to 950 times less conductive than aluminium, thereby increasing internal temperatures around the edges and vastly reducing condensation. This is just another reason why SMARTGLASS® makes for truly intelligent glazing.

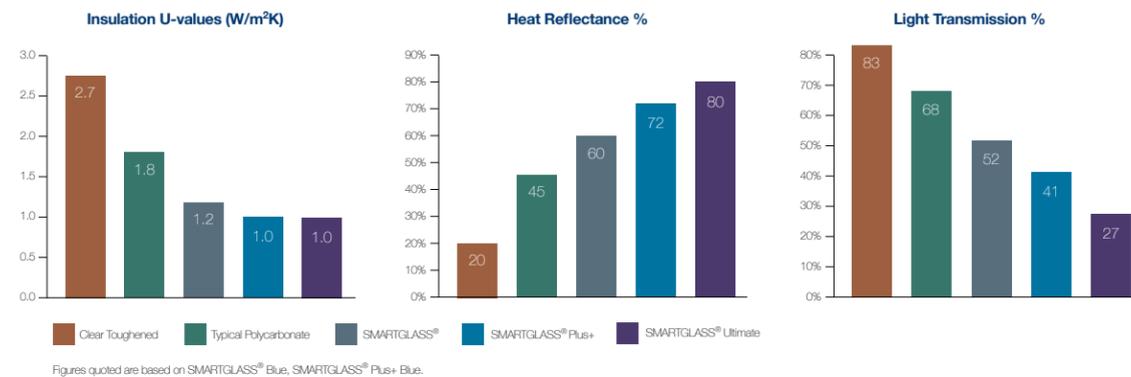


Technical Specifications

The tables below highlight the key performance characteristics of the full SMARTGLASS® range.

SMARTGLASS® Conservatory and Glazed Roof Glass Specifications.

Product	Solar Factor	Light Transmission	U-Value	True Self Clean	Argon filled Low E	Warm Edge Technology
SMARTGLASS® Ultimate	20%	27%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Aqua	18%	30%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Blue	28%	41%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Neutral	29%	37%	1.0	Yes	Yes	Yes
SMARTGLASS® Plus+ Bronze	34%	42%	1.0	Yes	Yes	Yes
SMARTGLASS® Aqua	24%	33%	1.2	Yes	Yes	Yes
SMARTGLASS® Blue	40%	52%	1.2	Yes	Yes	Yes
SMARTGLASS® Neutral	40%	45%	1.2	Yes	Yes	Yes
SMARTGLASS® Bronze	49%	52%	1.2	Yes	Yes	Yes
Standard Clear (Toughened) Glass	80%	83%	2.7	No	No	No



Solar Factor = Total transmittance of radiant heat through the unit, as a percentage. The lower the solar factor, the cooler and more comfortable in summer the room will be.
Light Transmittance = Percentage of visible light passing through the unit. The lower the light transmission, the lower the glare within the room.
U-Value = Heat transmitted through the unit, measured in Watts per m² per Kelvin. The lower the U-Value, the warmer in winter the room will be.

SMARTGLASS®-W Side Frame (windows and doors) Glass Specifications.

Product	Argon filled Low E Glass	Warm edge spacer	Solar control	Anti Fade	Enhanced Acoustics	Enhanced Security	Self Clean
SMARTGLASS®-W Ultimate	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SMARTGLASS®-W Plus +	Yes	Yes	Yes	Yes	Yes	Yes	-
SMARTGLASS®-W	Yes	Yes	Yes	-	-	-	-
Standard (Wall) Glass	Maybe	-	-	-	-	-	-

Your Questions Answered

Q My old conservatory used to overheat terribly in the summer, will SMARTGLASS® help?

Yes. Older conservatories may either have a basic plain glass roof or a polycarbonate roof, neither of these have any great effect in controlling the sun's heating effect. A basic glass roof would only reflect about 20% of the sun's heat, but by contrast a SMARTGLASS® roof would reflect up to 80%, meaning the room stays considerably cooler during hot weather.

Q I've heard about 'easy clean coatings' is that the same as self-cleaning?

No. Only a true self-cleaning roof does exactly that, cleans itself. Using a specially coated glass, a chemical reaction physically breaks down and washes away dirt. A so called 'easy clean' roof simply does not have these properties.

Q In winter I'm concerned about my conservatory being cold, what type of roof should I consider?

One of the key properties of a SMARTGLASS® roof is its ability to retain warmth in winter. In fact SMARTGLASS® is probably a better insulator than any other form of glazing in the home, including the latest A+ rated windows. With a super low U-value down to 1.0 W/m²K, you can be assured that heat loss is kept to an absolute minimum, keeping the conservatory warmer in winter and thereby helping to reduce the cost of heating.

Q Will my furniture still fade under a SMARTGLASS® roof?

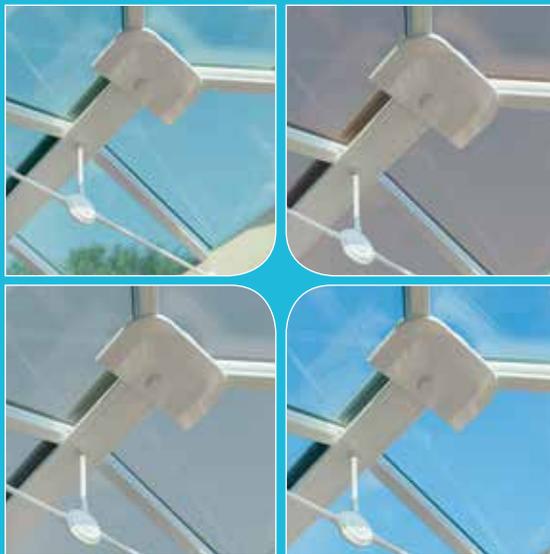
Over 75% of harmful UV rays are blocked, thereby dramatically reducing the risk of damage to soft furnishings. Our wall range includes options to increase this to 98%, ensuring no damage is going to occur this way, unlike standard clear glass.

Q What guarantees do I get with SMARTGLASS®?

Every SMARTGLASS® roof is manufactured to BS EN 1279 for seal quality and BS EN 12150 for toughened glass safety. With this we offer a 10 year warranty against seal failure with all of our products.

Q If I don't specifically choose SMARTGLASS®-W in my walls, what is the default option?

Our research suggests that at best you will get a low E unit which will help retain heat in winter. SMARTGLASS®-W also helps retain heat in winter - but unlike standard glass it can keep it out in summer too. It also can also help keep unwanted sound out, keep burglars out and keep UV light out. It can even clean itself too, making it the perfect all round choice for the modern conservatory.



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