



# Glass & Glazing Solutions



Nicholls & Clarke  
— Est 1875 —





#### Environmental

Sustainability continues to be a core focus. We are consistently aligning our company initiatives to integrate sustainable practices into every facet of our operations.



#### Delivery

With our private fleet of delivery vehicles, we offer all delivery solutions, from curb side drop off to commercial sites requiring certificated stillages coupled with 150 years' experience of handling glass.



#### Meeting Standards

Working with our suppliers and commercial partners is important to our company values. At Nicholls & Clarke, we ensure that all products purchased meet all industry standards, quality and performance.



#### Technical Support

Our UK based technical team are readily available to answer any technical queries. We also have a dedicated website [www.ncglass.com](http://www.ncglass.com)



#### Unrivalled Service

Our team are on hand to assist with your project requirements. From specifications for standard to bespoke projects, Nicholls & Clarke will deliver the right advice.



#### Safe Supplier Verified

Working with our suppliers and commercial partners is important to our company values. At Nicholls & Clarke, we ensure that all products purchased meet all industry standards, quality and performance.





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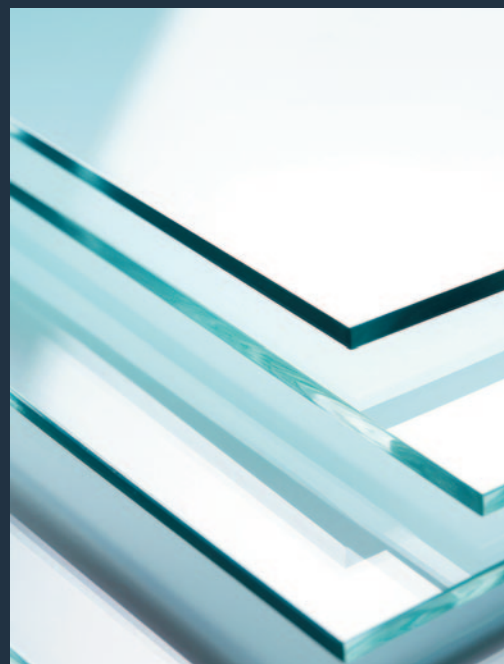
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# Quality Glass & Glazing Solutions Made in Britain

It's our expertise and 150 years of longevity in the UK glass industry that has enabled us to take the position as trusted manufacturers and suppliers of glass and glazing solutions. We own two state of the art manufacturing facilities in the UK giving us broad manufacturing capabilities. As such, we offer a comprehensive portfolio of glass products, sealed units, high performance glasses, heritage slim units, balustrade glass, fire glass, to name a few.



[www.ncglass.com](http://www.ncglass.com)

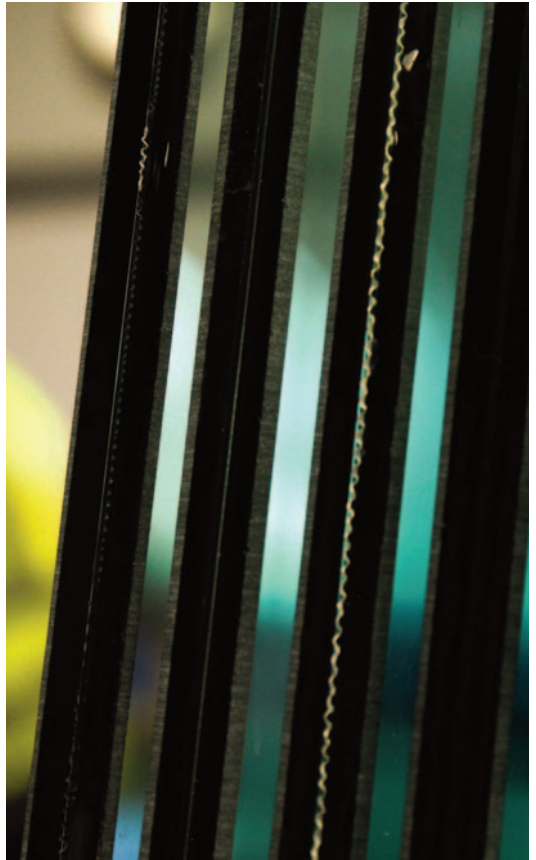


# Quality, Since 1875

N&C Glass is one of the largest Independent glass companies in the UK since 1875. Operating from 2 sites the company offer an unrivalled level of service for all Glass and Glazing related products, with a wealth of knowledge for over 150 years our dedicated team are always available to support our customers.

We specialise in meeting all glass requirements for the fenestration industry. Being independent is a key to our success. Not only do we offer a wide portfolio of products and processes, we also have the flexibility to offer brands by other manufacturers.

We can meet the demands of all market sectors from domestic glass through to the most complex and challenging glass requirements of the specification market with the ability to offer stillage deliveries within our private fleet of vehicles for customer reassurance and reliability.



Largest  
Independent  
Glass Company



150 Years of  
Supplying Glass  
in Britain



Manufacturers with  
Flexibility to Sell  
Other Brands



Private Fleet with  
Stillage Deliveries  
Available





# We've got you covered

## Fareham & Beckton Coverage Areas



[www.ncglass.com](http://www.ncglass.com)



Bright Blue	Standard Lead Times
Light Blue	Tailored Service

For all enquirers please contact us  
Email: [Info.glass@nichollsandclarke.com](mailto:Info.glass@nichollsandclarke.com)  
Tel: 0845 605 1350

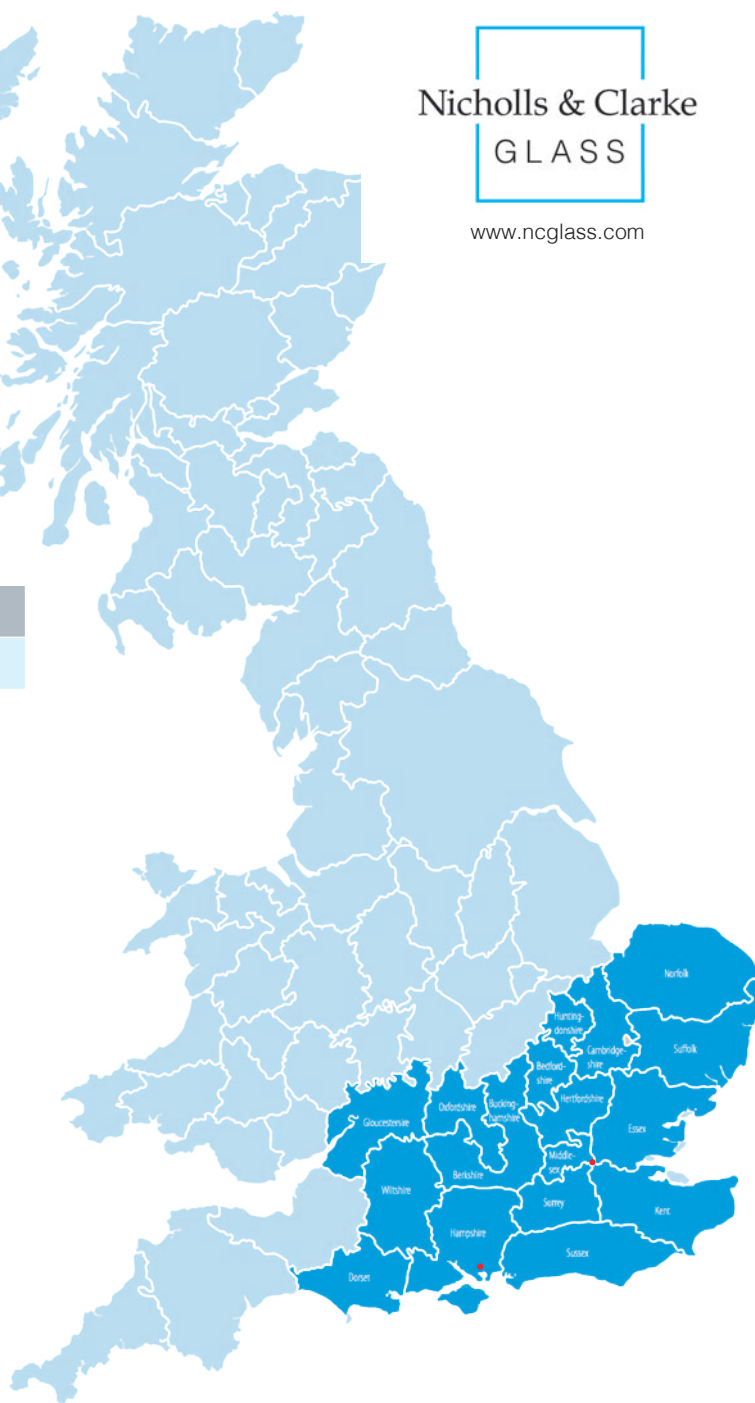
### Production Sites:

#### N&C Glass Beckton:

Unit 26 Gemini Business Park  
Hornet Way, Beckton, London E6 7FF  
Tel: 0207 473 0999

#### N&C Glass Fareham:

28 Barnes Wallis Road  
Fareham, Hampshire PO15 5TT  
Tel: 01489 589 858



Standard lead times apply for areas shaded in bright blue, delivered direct dependent on requirements. Please discuss with a member of our team for specific order requirements.

Our tailored service (light blue) is available via a third-party haulier. Please contact our branch for lead times and delivery charges.

Nationwide delivery is also available for our Eco-Lite™ Slim Range of Sealed Units and Cut Size Fire Glass. Contact us for further information.





James Farmer, Business Development Manager, Nicholls & Clarke Glass

## Talking Point: Designing for Today

Key factors can affect the specification of glass solutions in today's industry. This can include things such as fire safety, design requirements, changes in legislation and the largest part in my opinion, the huge ongoing shift towards implementing energy efficient solutions and a reduction in energy usage.

As one of the longest established British manufacturers and distributors of sealed units, fire safety glass and processed glass, it is the continuous evolution of the industry that captures the interest of the dedicated team at HQ today. Nicholls & Clarke Glass Business Development Manager, James Farmer talks to us about production schedules and product sourcing in the glass industry today.

Fully engaged in the UK glass and glazing industry since 1875, the evolution has been continuous to meet the needs of the changing world we live in.

Watch our latest video paying tribute to our 150 year celebrations.



### **Q** Product Quality is a crucial requirement for all customers, How can a customer gain assurances of Quality?

**A** Working with Glass is inherently difficult, it is a building product that is fragile, heavy, sharp and can mark and blemish extremely easy. Hence why you need a supplier you can trust and who knows what they are doing. The use of glass has increased in building design away from traditional uses which means that the expected demand on quality also increases. It is becoming a common place to see large feature windows, internal and external balustrades and glass as a main focal point of many new designs. Therefore, it is important that we supply best in industry quality. N&C are constantly investing in the best in class machinery, continued training of staff, and purchasing the best products available to ensure our customers expectation are met and exceeded.

### **Q** Industry regulations are forever changing, how do you support customers through changes?

**A** We pride ourselves on the knowledge base throughout the team. Our 150 year heritage means that we have been in the industry for a long time, and there is invaluable experience amongst the team that ensures the latest regulations are met. In the management team alone, there are centuries worth of industry experience and exposure which is an incredibly rare and precious asset. How do we support customers? We have a customer focused approach with our team and customers to share knowledge and expertise and ensure that we are all winning together.

### **Q** The Nicholls and Clarke Group have reached the 150 year anniversary, How has glass evolved within the business?

**A** Since its inception in 1875, the business started as a glass merchant and has developed and adapted within the industry over the last 150 years, becoming a market leader in many areas including processing, fire glass, cut sizes, sealed units and heritage sealed units. The ability to adapt to everchanging market conditions, industry demands, regulation changes, stock advancements have allowed N&C Glass to cement its position in the market and increase its reputation for knowledge, quality and service across a variety of products. This has allowed our customer base a 'one stop shop' for all their glass needs.



**Q** We often hear about the requirements of Document L. In a nutshell, what is it?

**A** Essentially Document L of the Building Regulations, is titled "Conservation of Fuel and Power," and it outlines the legal requirements for energy efficiency in buildings. It ensures that construction projects use a combination of building materials and methods that meet the latest energy-saving standards. However, these standards are not uniform across all projects; Document L is divided into several sub-sections tailored to specific types of buildings. These include regulations for Newbuild Dwellings, Newbuild Non-dwellings (Commercial), and Replacement Windows and Doors, among others. If our customers need assistance on meeting these requirements, we can assist with this.



**Q** Is Part L important for domestic or commercial clients?

**A** Part L of the Building Regulations is essentially for both residential and commercial clients because it ensures buildings are designed and constructed to be energy efficient. For residential clients, this means lower energy bills, improved comfort, and a home that meets modern sustainability standards making it more attractive to future buyers. For commercial clients, compliance with Part L supports corporate sustainability goals, reduces operational costs, and helps meet ESG (Environmental, Social, and Governance) criteria. Importantly, adhering to Part L also ensures legal compliance, avoiding delays, fines, or the need for costly redesigns later. Ultimately, the main driver is to improve the energy efficiency of all exterior glazed window and door products. It really focuses on getting better U and G values, with a big commitment to reducing overall carbon emissions, adding long-term value, efficiency, and environmental responsibility to any building project.

**Q** How do N&C fit into the conversation when it comes to meeting regulations?

**A** We can help achieve those U and G value performances by using things like Low Emissivity and Low Iron Glasses in our double or triple glazed sealed units.

**Q** What is WER in reference to glass performance?

**A** WER stands for the Window Energy Rated scheme. It's specifically a scheme for replacement windows in the residential market, and it's a rating that combines the performance of both the frame and the glass.

**Q** Product quality is a crucial requirement for most projects, especially where usage is demanding. How can a specifier gain assurance of this quality?

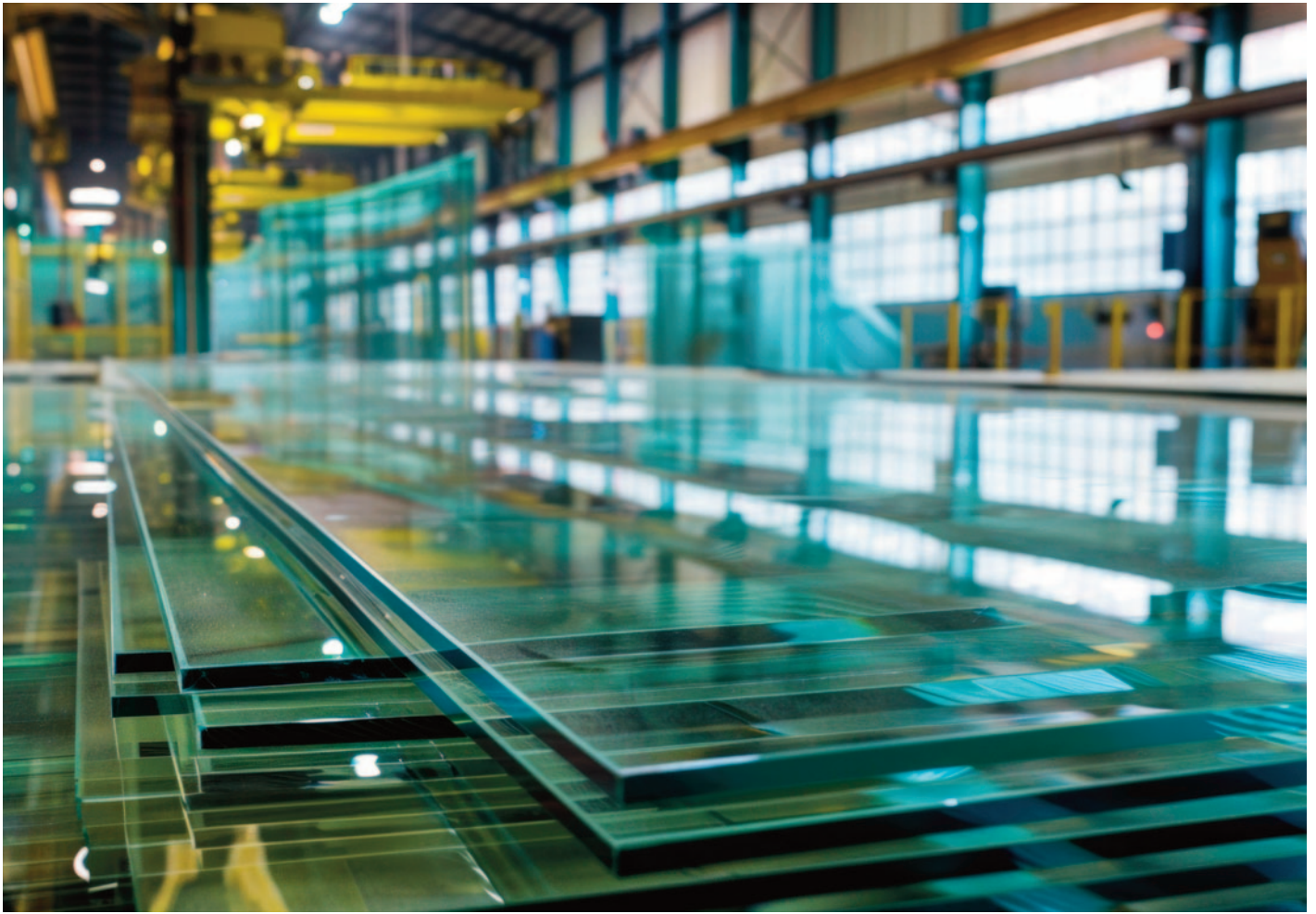
**A** A great deal goes into ensuring that products meet the required legislation including rigorous testing and transparency over sourcing of components. Like a cog in a clock, it is the sourcing of quality components that ensures reliability and durability, offering products that are fit for purpose. We work closely with our partners to ensure that all the products that we both manufacture or source for our business achieve all the relevant industry regulations regarding the manufacturing process, sourcing of materials and testing. This ensures that the products we offer to our customers are of the highest quality and provide reliability, durability and are suitable for the environment for which they have been specified.

**Q** As an independent company, what benefits does the customer have over alternative suppliers?

**A** As the largest independent glass business, we have the flexibility when it comes to service, product sourcing and deliveries. We own our fleet of commercial vehicles and continually invest in what is needed and when. It sounds cliché, but we are large enough business to invest in our production, machinery and operations, but flexible enough to cater to emerging clients order and requirements in a fast manner.







## Quality, As Standard

Continually investing in production

As part of a £70 million Group, we have been able to commit to our market through significant investment that has enabled us to supply toughened and processed glass to our customers. Furthermore, it allows us to offer the best in quality, capacity, performance, availability, distribution and customer service. To us, quality is paramount. We have a dedicated and experience team dedicated to the production of quality products.

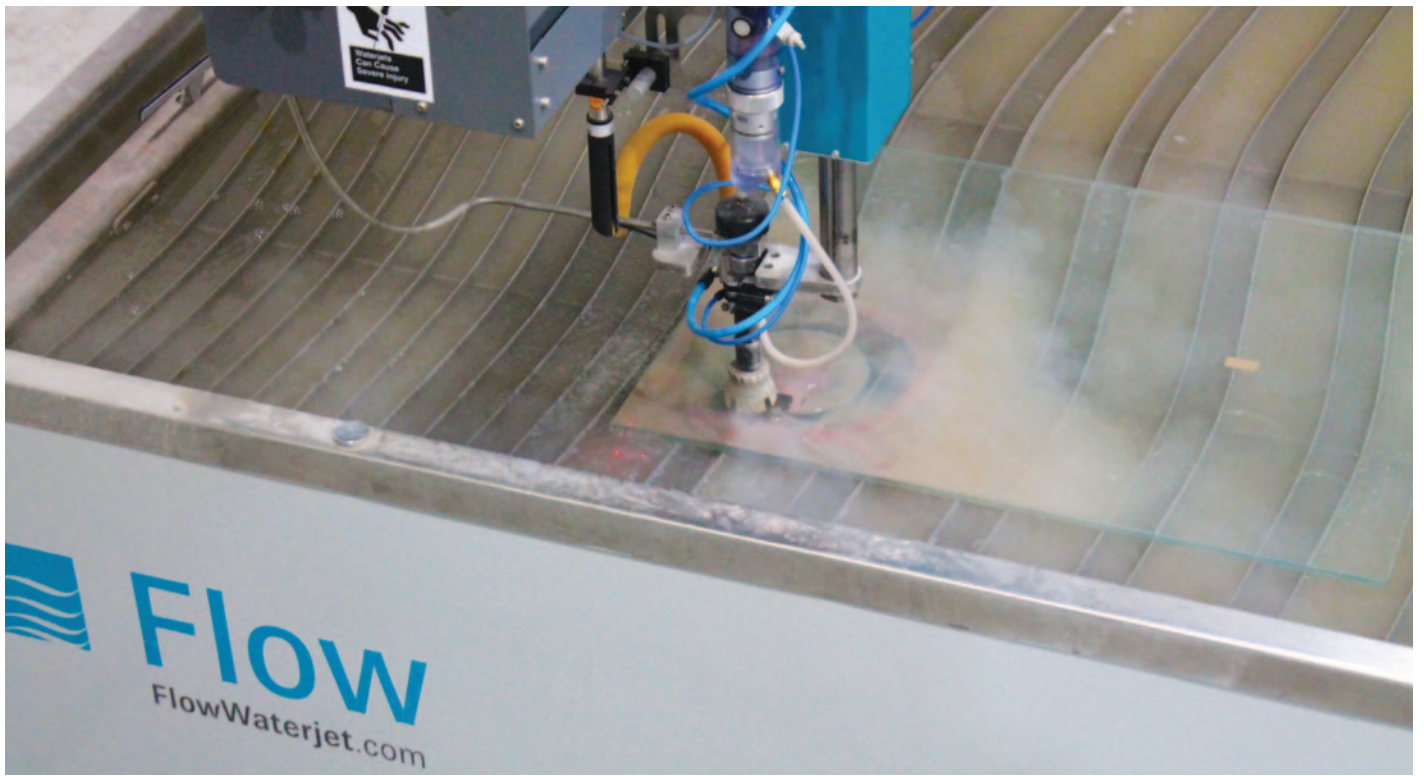
Glass manufacturing begins with cutting accuracy. Across our two sites, we employ an extensive range of cutting technology to handle everything from clear float to laminated and solar control glass. Our Fareham facility is home to two main cutting tables for high-volume annealed glass and a specialised laminated cutting table that delivers versatility across both annealed and laminated requirements.

Meanwhile, Beckton extends our capability further, with high-speed CNC stations for shaped polishing, internal cut-outs, and face etching, supported by waterjet technology for detailed and thicker fire glass shapes.

Every sheet is handled with care, automated processes such as the IGIS arrissing line and straight-line polishers ensure polished, smooth, and safe edges before further processing.







### High-Performance Toughening and Finishing

For applications that demand strength, our Pro E toughening furnace in Fareham guarantees high-performance results. Supported by two Semi automated arriissing lines, the toughening process is reliable and consistent, preparing glass for use in high-demand environments.

Our Beckton facility complements this with extensive edge processing options. From mitred edges and polished finishes to hole drilling for fixtures and fittings, the detailed finishing touches are applied with skill and consistency.





### Automated Excellence in Sealed Unit Production

Fareham houses our semi automated sealed unit robotic lines, designed to meet high-volume demands without compromising on quality. The main line features an infeed station, glass washer, assembly station, gas press, and an automated sealant robot.

Across five production lines, we manufacture a wide range of sealed units from standard double-glazing to leaded and Georgian grill styles, shaped units, and our energy-saving Eco-Lite™ Slim range. One line is exclusively dedicated to Eco-Lite™, showcasing our commitment to innovation and environmental performance.

### Efficient Storage and Streamlined Delivery

Between both sites, we manage a combined fleet of 17 commercial vehicles and maintain high-capacity storage for fast dispatch. Fareham alone holds up to 5k+ completed sealed units in readiness for delivery, ensuring that stock is always available to meet customer needs. Overhead cranes in both factories support efficient and safe loading and unloading, speeding up turnaround and minimising downtime.



### Product Range Built Around Performance

Our product range is as versatile as our machinery, offering:

- Sealed Units & Triple Glazing
- Eco-Lite™ Slim Units for Energy Efficiency
- Solar Control Glass
- Commercial and Fire Glass Units (Attestation Level 1)
- Processed Mirrors & Polished Glass
- Cut Size Laminated Glass
- Custom Shapes and Drilled Components

Whether it's a bespoke mirror finish, a triple-glazed unit, or a large-scale commercial specification, every product we create is a result of finely tuned processes, close attention to detail, and a combined legacy of manufacturing expertise.



[www.ncglass.com](http://www.ncglass.com)





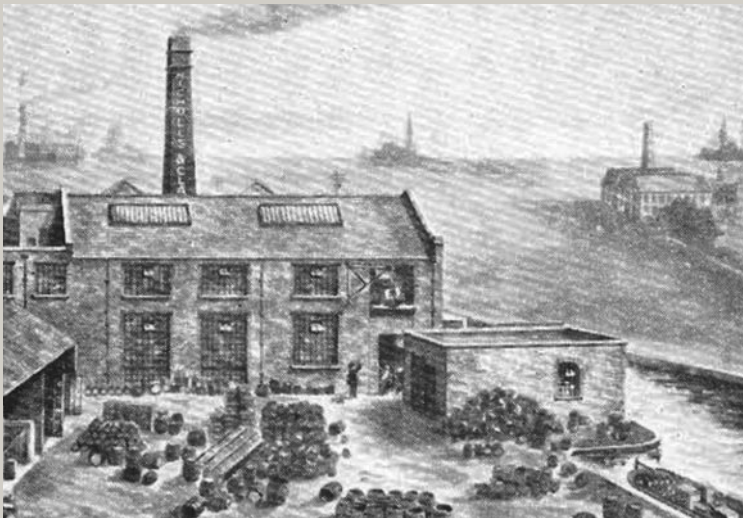


# Our story over 150 years...

It all began with a piece of glass

In 1875, at 6 Shoreditch High Street in East London, a new chapter in British industry quietly began. Samuel Nicholls, a trained glass cutter, began crafting windows and glass for Shoreditch's thriving furniture trade. He couldn't have known that the business would grow into one of the longest standing businesses in construction today.

The Victorian era was a time of sweeping change. Railways were reshaping the country, connecting cities and turning coastal towns into thriving destinations. London stood as the largest and most vibrant city in the world. Nicholls & Clarke seized the opportunity, playing a part in building the towns and cities of the South East, helping to shape the very fabric of a modernising Britain.



Over the past 150 years, N&C has provided sealed units and processed glass for some of the UK's most iconic projects, including the Argentine Railway Project (where glass made in Shoreditch was shipped by wooden vessels all the way to Argentina in the 1870s), the furniture-making industry of early Shoreditch, the construction of Selfridges on Oxford Circus, and the post-war restoration of St Paul's Cathedral, among many others.

In 1907, Samuel Nicholls became the very first Chairman of the Plate Glass Merchants, an organisation that lives on today as the Glass & Glazing Federation.



As the business grew, so did our ways of working. In the early 20th century, new motor lorries joined our delivery fleet, but the tradition of delivering plate glass by horse and cart endured sometimes travelling as far as Brighton and back, a three-day journey. Horses remained a part of our fleet until as late as 1947.

Today, Nicholls & Clarke is proud to continue our heritage of adapting, innovating, and supplying the British trade.









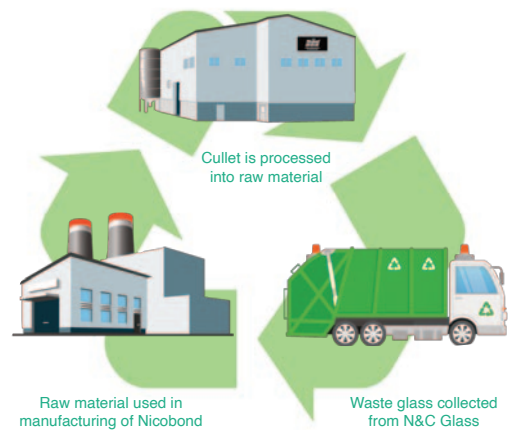
## Looking to the Future: Environmentally Conscious

We are fully involved in sustainable initiatives that enable a reduction in waste, energy savings and the use of natural energy sources. We also recycle and re-use material where possible in other areas of the Group.

As an ISO14001 certified business, we are continually progressing our environmental practices at all stages of production.

At Nicholls & Clarke Glass, we are proud to be part of an industry-leading sustainability initiative that supports a shared goal of achieving net zero by 2050. As a dedicated Glass Forever partner, we are actively reducing our environmental impact through responsible production and recycling practices.

Glass is a truly circular material – it can be endlessly recycled without compromising quality. That's why we work collaboratively with our partners to ensure both pre- and post-consumer glass is recycled wherever possible. This commitment contributes to the production of high-performance glass while conserving valuable resources.



Every year, Nicholls & Clarke Glass recycles approximately 1,700 tonnes of cullet, resulting in a saving of 2,040 tonnes of virgin raw materials and preventing 1,190 tonnes of CO<sup>2</sup> from entering the atmosphere. To put that into perspective, each tonne of CO<sup>2</sup> saved is equivalent to 2,500 miles driven in a petrol or diesel car, 120,000 smartphone charges, or the carbon absorption of 40 trees.

Our commitment to sustainability doesn't end with glass. We also recycle spacer bars, cardboard, metals, and other materials used in our production lines through a trusted network of environmental partners.







**84%** of glass cullet (waste) gets collected from our UK based glass factories, processed and re-used as raw materials back into the N&C Group in our glass production, adhesives, mortar & screed manufacturing.



**1t** of virgin material usage is being saved for every 1 tonne of processed waste glass used within our Group factories.



**1000** photovoltaic panels have been installed at our 6 acre Head Office in a bid to produce a sustainable solar powered energy source.



**100%** of our N&C Group company cars will be fully electric by 2026.



**1700t** of cullet is recycled annually



**2040t** tonnes of virgin raw material is prevented from being produced by using recycled cullet



**1190t** tonnes of CO2 is prevented from being released into the atmosphere.

# N&C



# Our Customers

Partnering across industries

At Nicholls & Clarke Glass, we proudly support a broad spectrum of customers with performance glass and sealed units, backed by over a century of expertise and experience. Whether you're creating standout retail spaces, enhancing residential homes, or specifying for ambitious architectural designs, we provide glass tailored to your needs.

Our glass products are widely used by trade glaziers in projects such as office buildings, educational institutions, healthcare facilities, retail environments, hospitality venues, and transport hubs. We specialise in supplying oversized and large format glazing for curtain walling, shopfronts, atriums, and facades where visual impact and durability are required. We also supply safety and security glazing for high-traffic or regulated areas



## Domestic Window Companies

We offer a wide range of domestic glass and glazing options for window shops selling domestic windows and glass options.

We also have the capability to offer an extensive range of conservatory glass, window glass options also including energy saving such as double and triple glazed units, and decorative options such as stained and patterned glass.

## Commercial & Retail

For trade companies involved in the installation of glass into the commercial and contract marketplace, the requirement for a reliable and experienced glass supplier is paramount.

We have supplied high performance sealed units for over 30 years with projects including school academies, hospitals, hotels, university, school refurbishments as well retail settings. We can produce large format units up to 3210 x 1600mm.





## Door & Joinery

For many years, we have been supplying glass and glazing products directly to joinery companies. Through our wide product portfolio, we have the capability to supply glass for a number of applications. These include patterned and decorative glass for obscurity, privacy, lighting or decoration, glass for internal and external doors, toughened glass for safety critical applications, fire rated glass for fire doors or Eco-lite™ Slim ultra thin double glazed units.



## Heritage & Conservation

Designed exclusively for the Heritage and timber market, Eco-lite™ Slim Sealed Units are by far the the market leader in heritage units option available in the marketplace.

With the experience of supplying product to a variety of buildings, from listed buildings to some of the most prestigious sites in the UK, Eco-lite™ Slim really is the perfect choice.







# Bespoke Solutions Tailored to You...

For trade companies involved in the installation of glass into the commercial and contract marketplace, the requirement for a reliable and experienced glass supplier is paramount. We have been involved in a grand variety of projects stretching across industries and include new school academies, hospitals, hotels, university and school refurbishments.

N&C Glass have also been supplying IGU manufacturers for over 65 years. As an independent company, we are able to offer our customers a full range of products from all manufacturers that meet the demanding requirements of the whole industry.

We supply everything, from for everyday applications, to more complex projects

## Fire Resistant Glass

As the largest distributor of Fire Glass in the South East of England, we offer a huge range of thicknesses from our Fire Glass range. Compliance to EN1279 is not enough for the manufacture of fire glass units. As an accredited IGU company, N&C manufacture Fire Rated units that are approved to Attestation Level 1 to ensure compliance to European Regulations.

## Acoustic Glass

N&C acoustic glass is available in a number of thicknesses with excellent lead times: 0.4mm 6.8mm RW/DB 35, 8.8mm RW/DB 37, 10.8mm RW/DB 38, 12.8mm RW/DB 39, 16.8mm RW/DB 40.

## Screen Printing/Patterned Glass

The requirement for screen printing is significant within the retail environment. N&C Glass are proven partners with in-house cutting, toughening and processing facilities, we are able to supply the required solutions with industry best lead times.

## Large Format Solutions

As major suppliers of oversized commercial glass, our large scale Bottero Loading Table has the capability of holding glass up to 6000 x 3210, perfect for shop fronts and office buildings. We also offer Clearshield technology for architectural glazing.

## Complete Commercial Processing

We can cater for complete commercial processing. We can edge, drill and polish both rectangles and shapes and can edgework internal and external cut outs.

## Engraving

We have the capabilities to manufacture engraved glass, perfect for office reception areas and branding.



## Partitions / Internal Glass Doors

We have the capabilities to manufacture high quality internal glass doors and partitions for applications across industries from commercial and residential, to retail and leisure.

Opt for total transparency or frosted/sand blasted solution where a degree of privacy and reduced light transmission can be achieved. We work closely with architects and designers to offer bespoke products and unrivalled technical expertise.

## Balustrades

Whether you require a bespoke balustrade construction, or a frameless system, we have the capabilities to offer toughened and toughened laminated structures to suit.

## Shower Screens

We specialise in producing high quality, 8-10mm toughened glass for the producing attractive wet room and shower screens. Opt for a self cleaning ClearShield coating which self cleans and prevents the build up of residue.

## Splash Backs / Cladding

We have specialist expertise in supplying back painted coloured glass for splashbacks and panels. Our water-jet cutting facilities can create high precision cut outs for plug sockets and other utilities. We use high quality toughened glass in a choice of thicknesses.

## Glass Shelves & Miscellaneous

We offer bespoke glass shelving solutions for the bathroom industry available in thicknesses 4mm to 19mm. We also offer mirrors in a wide range of sizes and tint options.





# Case Study: Tewkesbury Academy School

We worked closely with one of our longstanding partners, Joedan Windows & Doors Ltd (Commercial Division) who successfully completed the Phase 1 project at Tewkesbury Academy School, Gloucestershire.



The refurbishment programme required a tailored solution to meet modern performance standards while preserving the functionality and appearance of the school's facilities.

Joedan, known for their quality aluminium glazing systems, collaborated with Nicholls & Clarke Glass to deliver a robust and high-performing window specification for the school. The large-scale project incorporated a mix of high-performance N&C Eco-lite™ Sealed Units, selected to provide optimal thermal insulation, safety, and solar control.

Each unit was manufactured to fit seamlessly into Joedan's aluminium systems, combining aesthetics with longevity and regulatory compliance.

Over the course of several weeks, N&C produced and delivered more than 1,600 sealed units, totalling approximately 1300m<sup>2</sup> of glazing, equivalent to 27 tonnes of precision-made glass components. The result was a visually refreshed and significantly upgraded learning environment designed to benefit students and staff alike.

## Project Highlights:

- Enhanced thermal performance for better energy efficiency
- Improved solar & light management in classroom environments
- Delivered on time and to specification in collaboration with Joedan.

## What we supplied:

- Softcoat** for enhanced energy efficiency
- Grey Antisun** to manage solar glare and reduce overheating
- Toughened and Laminated Glass** for durability & improved security





# JOEDAN

WINDOWS & DOORS





## Shropshire House, Tottenham Court Road

Nicholls and Clarke Glass are proud to have supplied our Eco-Lite Slim™ sealed units to 'Shropshire House' located in the heart of London, right between Fitzrovia and Bloomsbury. The Building itself has recently had a full renovation maintaining its beautiful Art Deco design and character features.

With a prominence of wall to wall and near full height windows across 6 floors and basements levels, the natural day light is unmatched. This therefore made the requirement to get the right design of windows and glass an imperative detail. The Crittall windows offer a sleek and classic design in-keeping with the buildings aesthetic, and joined with Nicholls and Clarke's Eco-Lite slim™, allows sleek reduced sightlines and improved levels of performance over traditional glazing. With over 5000 sealed units supplied to the site, Nicholls and Clarke Glass are proud to be involved in such a prominent project.

**CRITTALL®**



## Glynde Estate, Sussex

Designed and manufactured in-house for the heritage and conservation market, we supplied Eco-lite slim sealed units within the Glynde Estate project in Sussex. The project consisted of the replacement of 300 traditional timber framed windows to keep the aesthetic of these windows but with the modern technology and performance offered by Eco-Lite Slim Sealed Units.



Watch our  
youtube video



## Stanmer House, Brighton

Over 210m<sup>2</sup> of Eco-lite Slim Plus sealed units were supplied to Stanmer House, a Grade 1 listed mansion set in the picturesque Stanmer Village.

Unique to N&C Glass, Eco-lite Slim Plus was the perfect solution for the new build extension to the existing historic building, allowing consistency of in the traditional aesthetics of the building.



STANMER HOUSE



## Wingham Wildlife Park, Kent

Wingham Wildlife Park, located in Kent, UK, is a leading zoological attraction that combines conservation, education, and visitor engagement. With a growing reputation for housing rare and exotic species, the park is committed to providing safe, enriching environments for animals whilst ensuring an immersive and secure experience for visitors.

As part of a development programme, Nicholls & Clarke were pleased to supply over 70m<sup>2</sup> of 21.5mm toughened laminated glass, comprising two 10mm sheets of toughened safety glass bonded with a 1.5mm PVB interlayer.



### The key priorities for the project included:

- Animal Safety:** Preventing escape or injury through strong, impact-resistant materials.
- Visitor Safety:** Providing a secure viewing experience for the public.
- Visibility:** Ensuring clear, unobstructed sightlines into the habitats.
- Durability:** Withstanding environmental stresses, animal interactions, and heavy visitor traffic.



The supply of 21.5mm toughened laminated glass to Wingham Wildlife Park demonstrates how specialist glazing solutions can enhance both safety and visitor experience in zoological environments. This project highlights the importance of combining engineering performance, animal welfare considerations, and visitor interaction in modern wildlife park design. Nicholls & Clarke are well positioned to support all kinds of project requirements from residential buildings to visitor attractions.





## It all starts with a piece of glass...

We offer a huge variety of glass options, specific for a multitude of project requirements. Dependent on the application, the glass of choice is where it all starts...



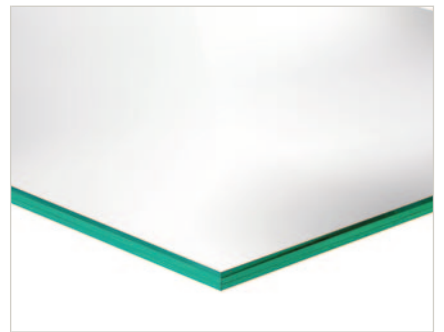




Clear Float Glass



Low Iron



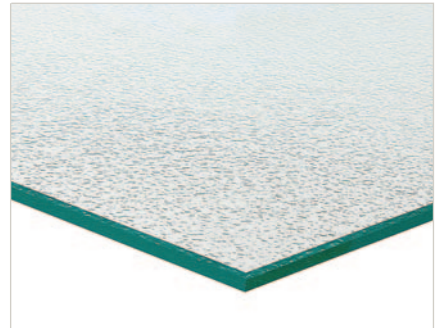
Silvered / Mirror



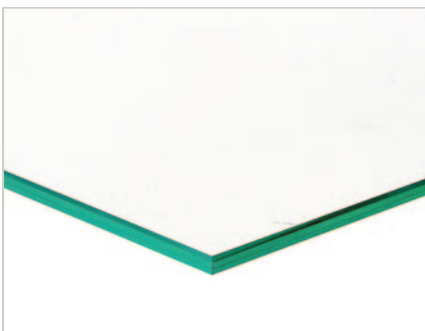
Toughened



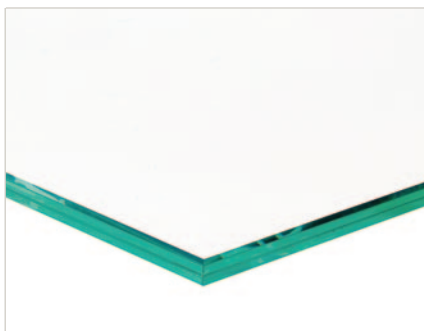
Toughened Laminated



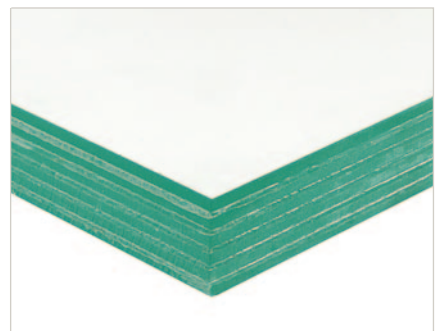
Patterned



Laminated Safety & Security



Laminated Acoustic



Fire Glass



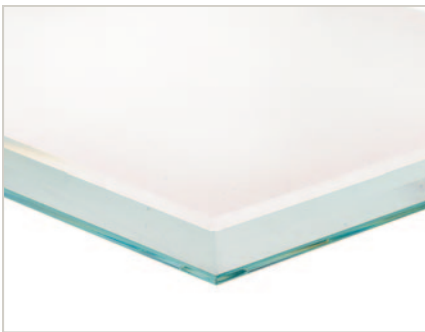
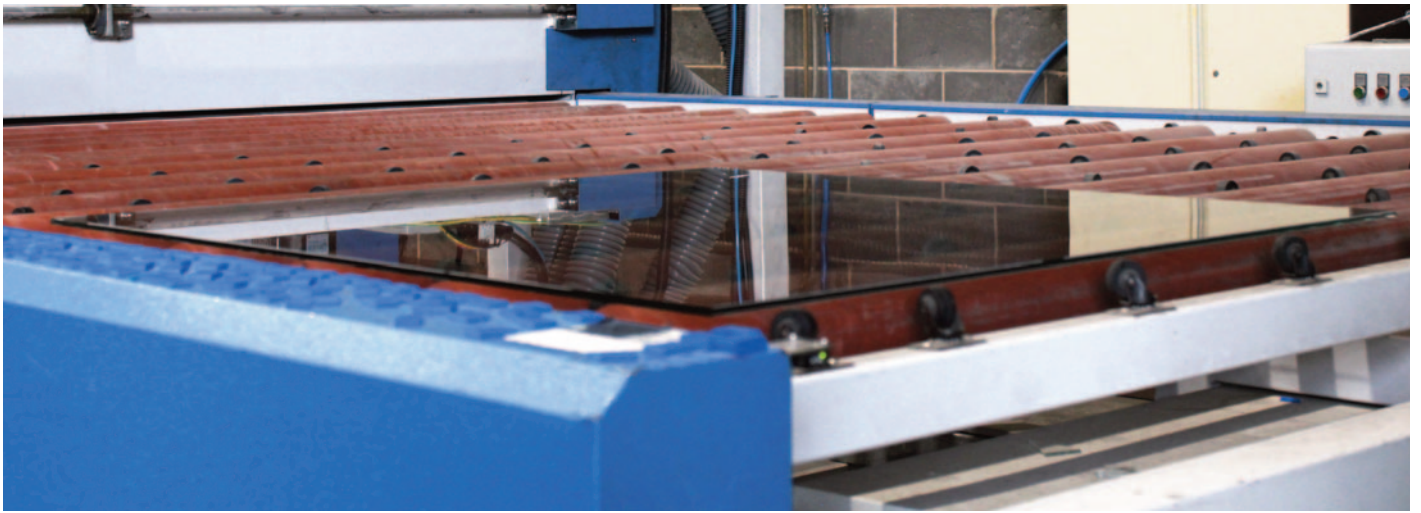


## Glass Processing

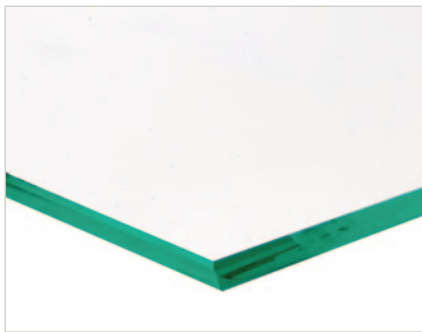
We offer a variety of bespoke processing options whereby our float sheet glass is treated to meet the specifications of our clients' project requirements. We work with a variety of customers across industries to produce key solutions.

Nicholls & Clarke Glass supply some of the largest glass processes in London and the South East. With an unrivalled level of glass options available in N&C can fulfil all customer requirements and meet all customers' glass specifications.

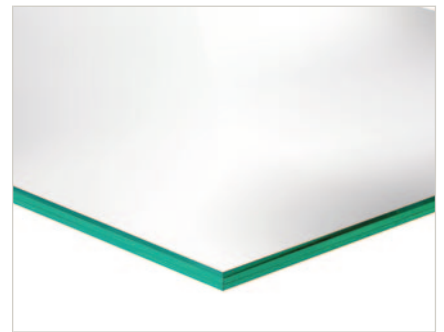




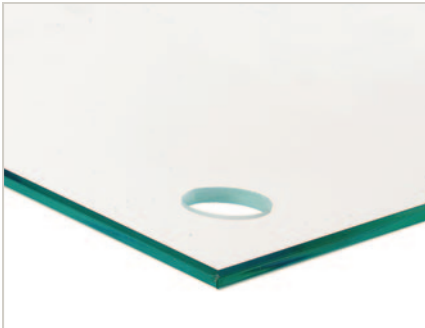
Bevelling



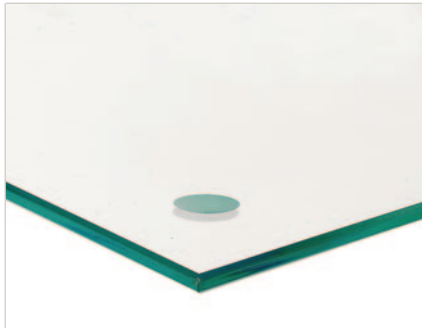
Mitres



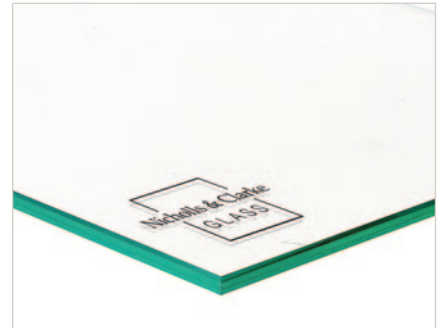
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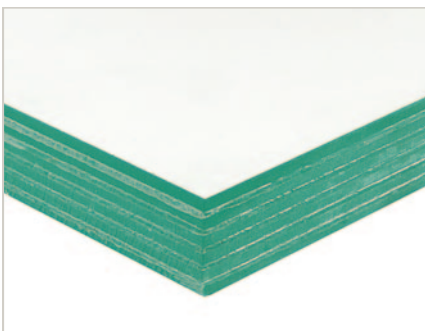
Drilling



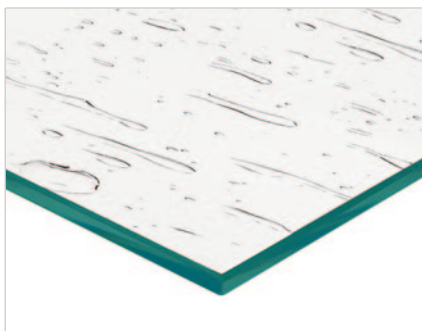
Countersinking



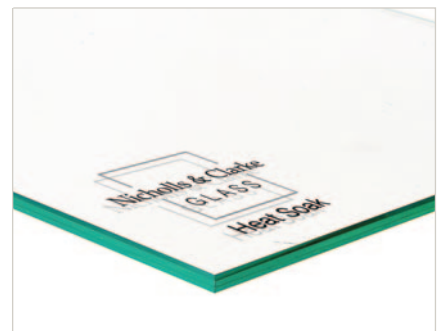
Glass engraving



Fire resistant glass



Easy clean coating



Heat Soak testing



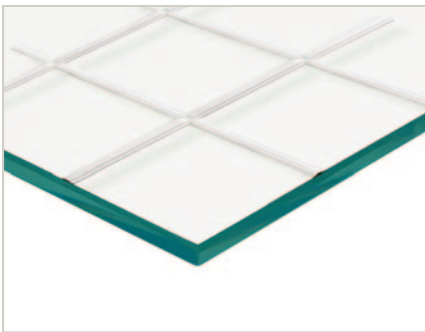
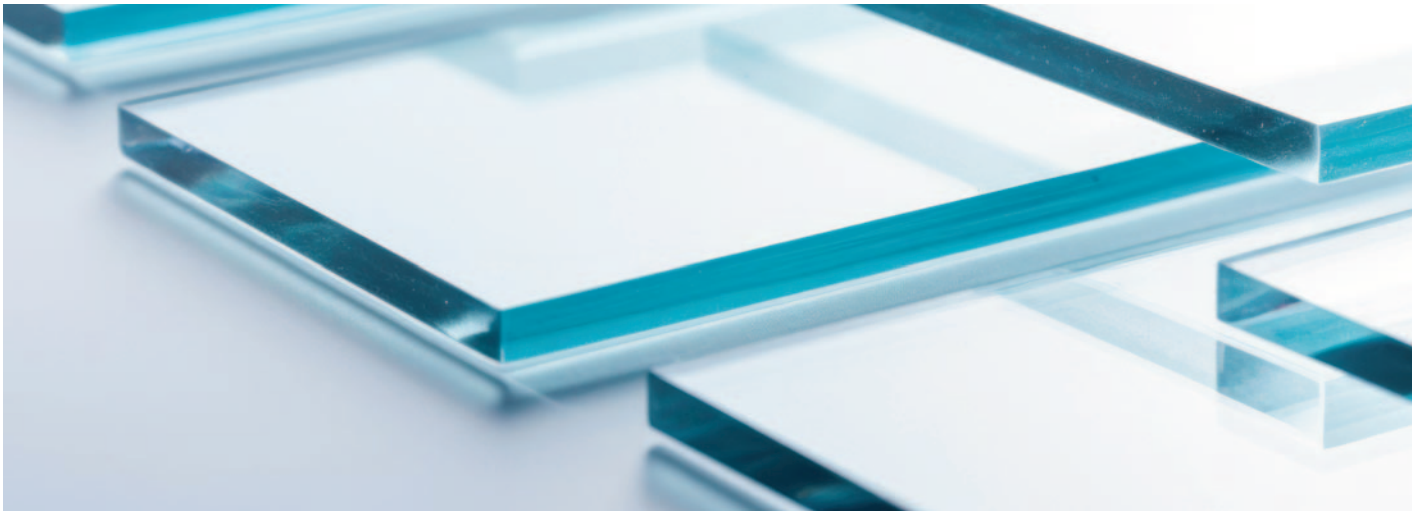


## Eco-Lite™ Sealed Units

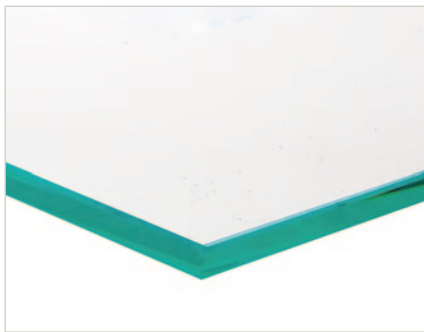
Under the Eco-Lite™ brand, our impressive range of IGU's are well recognised throughout the Glass industry. Through the latest innovations and clever technology, we have the capability to offer our clients the ultimate in comfort, thermal efficiency, sound reduction, safety and a great deal more.



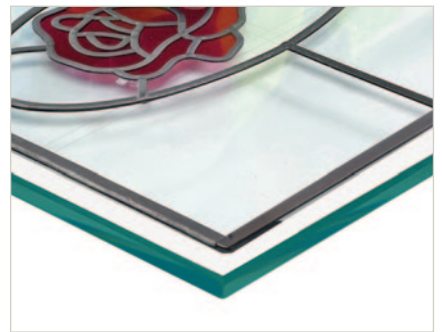




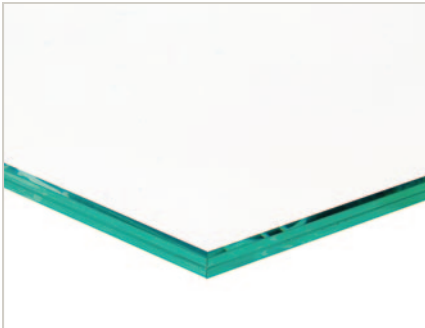
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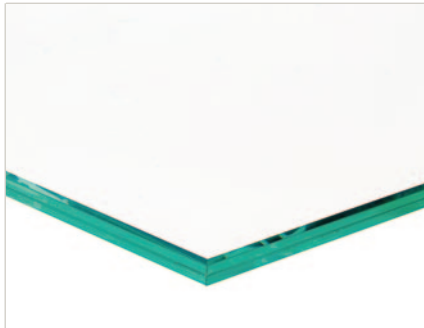
Softcoat Glass



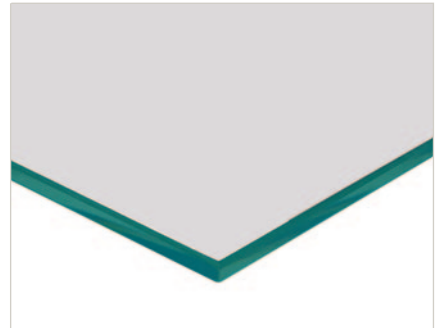
Leaded Glass



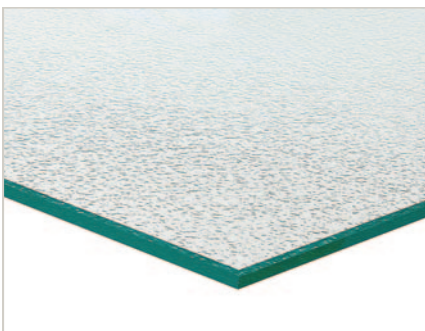
Laminated Safety & Security Glass



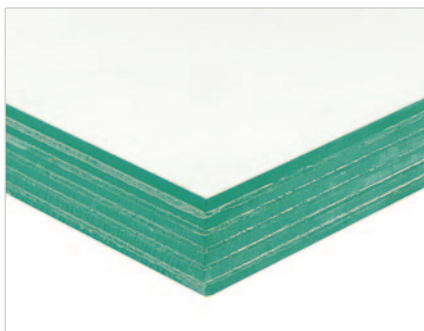
Acoustic Laminated



High Performance



Obscured Glass



Fire Glass:  
Integrity and Insulation



Toughened Glass





## Eco-Lite™

### Double Glazed Sealed Units

At Nicholls & Clarke Glass, we are able to meet the demands of both the domestic and commercial marketplace through the supply of quality products supported by modern equipment and an experienced workforce. Our sealed units are manufactured to our customers' requirements, offering multiple options of choice.

#### Eco-Lite™ Window Energy Rated Units

At N&C Glass we are able to supply the full range of products, including glass, gas and warmedge options. Using these combinations we are able to offer the most energy efficient sealed units to comply with all current building regulations.

#### Eco-Lite™ High Performance Units

At N&C Glass we supply high performance commercial sealed units with a range of solar control glass options available to ensure we meet the specific requirements.

#### Eco-Lite™ Fire Glass Units

N&C Glass are at the forefront of the UK independent fire glass market supplying non insulated, as well as insulated fire glass. Our fire glass sealed units conform to Attestation Level 1 for compliance.





# Eco-Lite™

## Double Glazed - How it works

Float glass, or where increased solar gain is required Low Iron glass, is used for the outer pane of a double glazed unit

Low-emissivity (Low-E) coated glass forms the inner pane of a double glazing unit. The energysaving coating lets the sun's rays through but reflects internal heating back into the property

Primary butyl gas-tight seal

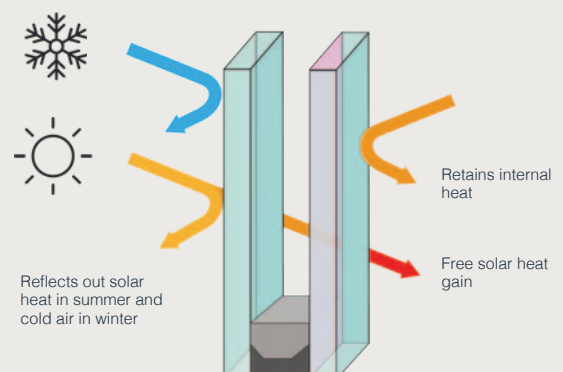
Air filled cavities are replaced with inert gases such as Argon, Krypton or Xenon. These gases provide better insulation properties than air which contributes towards improving the window's energy efficiency

Desiccant is an essential component of a sealed double-glazed sealed unit. Its serve to selectively adsorb the moisture which passes into the unit throughout its lifetime without affecting the balance of inert gas within the unit

Two Part Secondary sealant

### Double-Glazed, High-solar-gain Low-E Glass

This figure illustrates the characteristics of a typical double-glazed unit with low-E Glass. These units are designed to reduce heat loss from the building by containing the heat gain suns energy.







## Eco-Lite™ Triple Glazed Sealed Unit

If you need to achieve a lower than 1.0 U Value, triple glazing can help with this. The extra layer of glass will contribute to even better performance. Further improvements can be made to enhance U Values further with changes to glass coatings, cavity thicknesses and gas fill.

As a result of the additional glass pane, improvements can be found in DB rating and acoustic performance in triple glazed units.

### Eco-Lite™ Triple Glazed Sealed Units

Our N&C Triple Glazed Units help to improve energy performance and thermal efficiency, for the ultimate in comfort, whilst also contributing to a healthier environment.

If lower U Values are specified, triple glazed sealed units is the optimum answer.

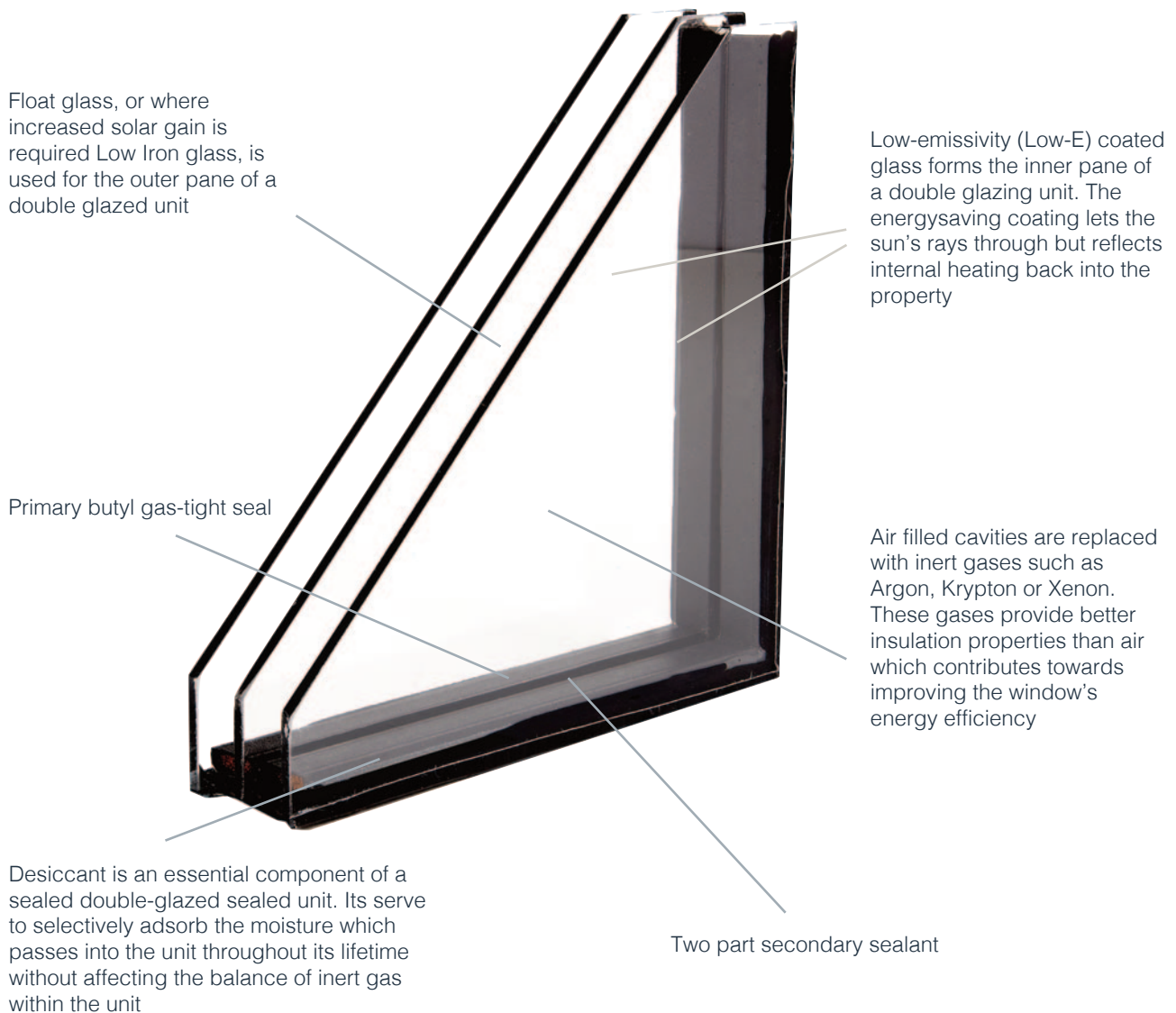
With a U-Value as low as 0.4, N&C Eco-Lite™ Triple Glazing Units help to keep homes warmer during the Winter months.





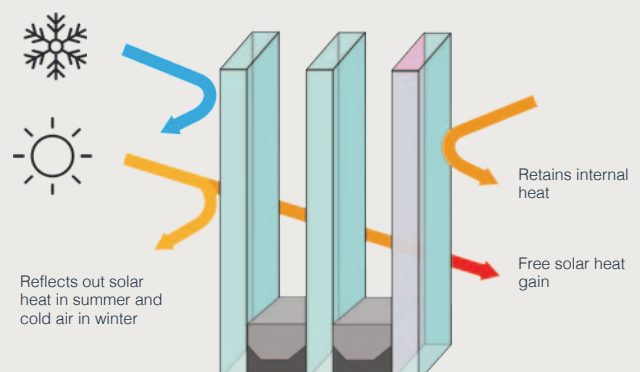
# Eco-Lite™

## Triple Glazed - How it works



### Triple-glazed, high-solar-gain, Low-E glass

A window unit featuring three panes of glass, separated by inert gas-filled gaps, with a special Low-E coating on one or more panes to reflect heat outwards in summer and inwards in winter. High-solar-gain Low-E glass is chosen to allow more of the sun's heat to pass through the glass, reducing the need for artificial heating in winter, especially for south-facing windows. This combination offers excellent thermal insulation against heat loss while also providing controlled solar heat gain for passive heating.







## Eco-Lite™ Slim Range

### Heritage and Conservation

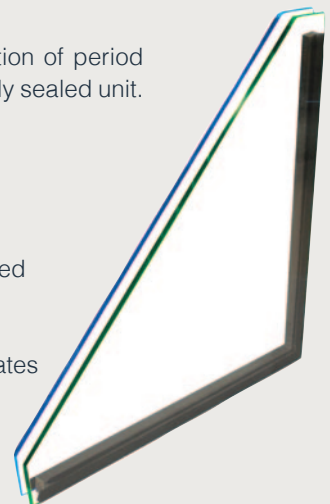
Details are paramount when retaining a buildings' established appearance so at N&C we pride ourselves in offering glass solutions that accentuate the beauty of period properties yet attaining modern features that eradicate problems caused by old windows. (Curved on plan available upon request.)

As part of the well established Eco-lite™ Slim standard sealed unit range Eco-lite™ Slim Premium has been developed as an ultra slim sealed unit incorporating a traditional aluminium spacer bar. This unique product is the ideal solution for a modern new build window with a traditional appearance compliant to EN1279 parts 1-6.

#### Eco-Lite™ Slim Range

N&C Eco-lite™ Slim comes in a range of finishes, available for renovating or the restoration of period properties. Each option offers a reduced sightline & manufactured as a traditional hermetically sealed unit.

- 5.5mm, 7mm and 8.5mm Sightlines
- Warm Edge and Aluminium Spacer Bar
- Hollow Rigid Spacer Bar
- 4mm & 6mm Cavities
- Unit Thickness from 11-14mm
- Warm Edge Technology
- U-Values (W/m2k) 1.2 – 2.6
- Argon, Krypton and Xenon Gases
- Improved Thermal Insulation
- Glass Options: Heritage, Acoustic & Laminated
- Option to glaze in traditional timber sash windows, metal frames and single glaze rebates
- 5 Year Guarantee
- EN1279 Compliant\*



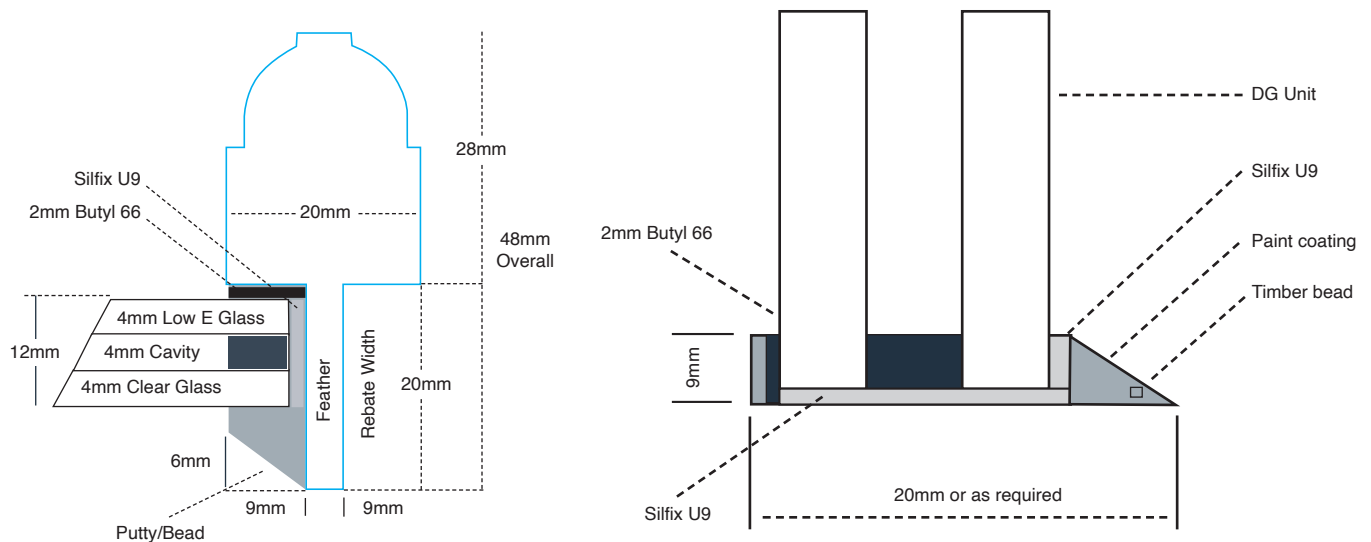


# Eco-Lite™

## Slim Range - How it works

### Slim-Glazed, High-solar-gain Low-E Glass

N&C Eco-lite™ Slim comes in a range of finishes, available for renovating or the restoration of period properties. Each option offers a reduced sightline and manufactured as a traditional hermetically sealed unit.



Curved on plan available upon request.





**Eco-Lite™ Slim**  
**4mm Black or White Warm Edge with 5.5mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.6
4mm Softcoat / Argon Gas / 4mm Patterned	2.6
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.9
4mm Softcoat / Krypton Gas / 4mm Patterned	1.9
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.6
4mm Softcoat / Special Gas / 4mm Patterned	1.6
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Xenon Gas / 4mm Patterned	1.5

**Eco-Lite™ Slim**  
**6mm Black or White Warm Edge with 5.5mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.0
4mm Softcoat / Argon Gas / 4mm Patterned	2.0
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Krypton Gas / 4mm Patterned	1.5
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.3
4mm Softcoat / Special Gas / 4mm Patterned	1.3
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.2
4mm Softcoat / Xenon Gas / 4mm Patterned	1.2

**Eco-Lite™ Slim**  
**4mm Black or White Warm Edge with 7mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.6
4mm Softcoat / Argon Gas / 4mm Patterned	2.6
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.9
4mm Softcoat / Krypton Gas / 4mm Patterned	1.9
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.6
4mm Softcoat / Special Gas / 4mm Patterned	1.6
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Xenon Gas / 4mm Patterned	1.5

**Eco-Lite™ Slim**  
**6mm Black or White Warm Edge with 7mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.0
4mm Softcoat / Argon Gas / 4mm Patterned	2.0
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Krypton Gas / 4mm Patterned	1.5
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.3
4mm Softcoat / Special Gas / 4mm Patterned	1.3
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.2
4mm Softcoat / Xenon Gas / 4mm Patterned	1.2

**Eco-Lite™ Slim Premium**  
**4mm Black or Silver with 8.5mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.6
4mm Softcoat / Argon Gas / 4mm Patterned	2.6
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.9
4mm Softcoat / Krypton Gas / 4mm Patterned	1.9
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.6
4mm Softcoat / Special Gas / 4mm Patterned	1.6
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Xenon Gas / 4mm Patterned	1.5

**Eco-Lite™ Slim Premium**  
**6mm Black or Silver with 8.5mm Sightline**

Glass Make Up	U-Value
4mm Softcoat / Argon Gas / 3mm or 4mm Float	2.0
4mm Softcoat / Argon Gas / 4mm Patterned	2.0
4mm Softcoat / Krypton Gas / 3mm or 4mm Float	1.5
4mm Softcoat / Krypton Gas / 4mm Patterned	1.5
4mm Softcoat / Special Gas / 3mm or 4mm Float	1.3
4mm Softcoat / Special Gas / 4mm Patterned	1.3
4mm Softcoat / Xenon Gas / 3mm or 4mm Float	1.2
4mm Softcoat / Xenon Gas / 4mm Patterned	1.2

Along with our standard range of Eco-Lite™ Slim, N&C Glass can also incorporate the following products:

4.5mm Heritage Glass, 4mm Activ Float & Toughened,  
6mm Float & Toughened, 6.4mm Lam and 6.8mm Acoustic.

Min Area: .30 on all orders  
Straight Shapes + 25%  
all Curves and Non-Regular Shapes + 50%  
(Subject to confirmation from N&C Glass Fareham)

Minimum Size: 150 x 250 Toughened  
Maximum Size: 4mm Spacer 600 x 600 / 500 x 1000  
Maximum Size: 6mm Spacer 1000 x 1000 / 800 x 1600

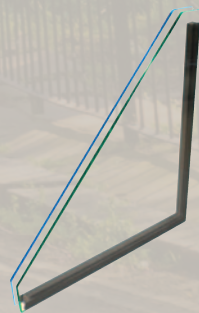
U Values are Indicative





## Eco-Lite™ Slim Heritage and Conservation

The double glazed sealed unit with a reduced sightline, perfect for traditional and sash windows







## Eco-Lite™ Conservatory Roof Glazing

Conservatory roof manufacturing technology has come a long way in the past 30 years and no more so than in the past 10 years. Advances in glass technology mean that a conservatory can be very thermally efficient and can reduce sun's energy enabling you to use your conservatory all year round. A high-performance glass roof allows a plentiful supply of natural light into your home and is available with many design styles and shapes to help you create a stunning space.



Activ-Sunshade Neutral





## Eco-Lite™ Roof Glass Options

Eco-Lite™ Roof glass range is suited to conservatory roof applications where access to cleaning is either difficult or dangerous. It also allows for greater use of glass in roofs, by helping to reduce glare and excessive heat build-up where it is needed the most.

Featuring an innovative, low maintenance coating, photocatalytic and hydrophilic properties break down and wash away dirt from the surface of the glass, allowing for less frequent cleaning.

The first stage is when the photocatalytic coating reacts with ultra-violet ray's present in natural daylight to break down and disintegrate organic dirt.

The second stage occurs when rainwater hits the glass. Through its hydrophilic form, water droplets are formed over the surface of the glass as it runs off taking the dirt with it.



Activ-Sunshade Blue	% Heat Reflection	% Light Transmittance	% G-Value	% U-Value	UV Protection
4mm Activ Sunshade Blue / 16mm Gas / 4mm Softcoat 1.0	83	18	17	1.0	93%
4mm Activ Sunshade Blue / 16mm Gas / 4mm Softcoat	77	22	23	1.2	93%
<b>Activ-Sunshade Neutral</b>					
4mm Activ Sunshade Neutral / 16mm Gas / 4mm Softcoat 1.0	71	37	29	1.0	83%
4mm Activ Sunshade Neutral / 16mm Gas / 4mm Softcoat	59	45	41	1.2	83%
4mm Activ Sunshade Neutral / 16mm Gas / 4mm Clear	53	45	47	2.6	83%
<b>Activ-Blue</b>					
4mm Activ Blue / 16mm Gas / 4mm Softcoat 1.0	67	42	33	1.0	88%
4mm Activ Blue / 16mm Gas / 4mm Softcoat	54	48	46	1.2	88%
4mm Activ Blue / 16mm Gas / 4mm Clear	48	52	52	2.6	88%
<b>Activ-Clear</b>					
4mm Activ Clear / 16mm Gas / 4mm Softcoat 1.0	54	62	46	1.0	72%
4mm Activ Clear / 16mm Gas / 4mm Softcoat	33	77	67	1.2	72%
4mm Activ Clear / 16mm Gas / 4mm Clear	25	78	75	2.6	72%

Note: Pilkington Activ SunShade™ Blue is slightly grey in appearance when viewing from inside.

Note: Pilkington Activ SunShade™ Neutral is slightly grey in appearance.





## Decorative/Patterned Glass

Pilkington Texture Glass and the Pilkington Oriel Collection offers privacy and style throughout the home. There are over 20 original patterns in the Pilkington Texture Glass range. Available in toughened or laminated for safety and security. All are suitable for double or triple glazing.





Reeded™ Privacy Level 2

## Decorative Glass Options

We offer a full range of Pilkington patterned glass from traditional to contemporary new designs. The advantages of Pilkington Texture Glass are easy to see. Not only does it allow maximum light in, while maintaining your chosen level of privacy or obscuration, but it also makes an attractive, decorative feature itself. With the broad range of original patterned designs, plus Pilkington Oriel etched glass range, there are now even more design possibilities, all with the quality you'd expect from one of the most recognised and trusted glass brands.

Five levels of privacy are available, graded from 1 (least obscuration) to 5 (greatest obscuration)

Cotswold™  
Privacy Level 5



Minster™  
Privacy Level 2



Stippolyte™  
Privacy Level 4



Satin™  
Privacy Level 5



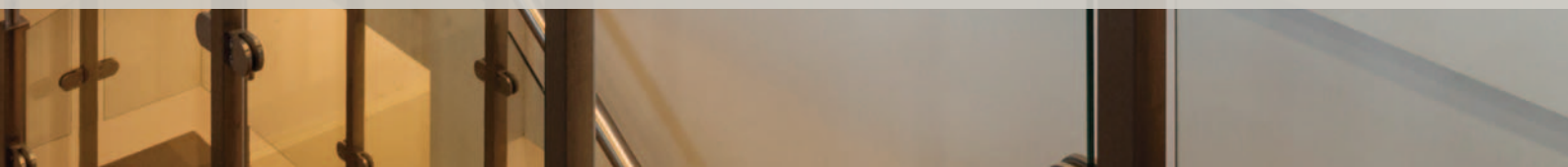




## Glass Balustrades & Balconies

Balustrades are an attractive barrier system that performs various functions within a building or external setting. As a visually appealing option, balustrades encourage light and visibility into the dwelling and are primarily used as a protective barrier, as well as to guide people moving around a building.

As one of the largest independent manufacturers and distributors of glass throughout London and the South East, we have high volume capabilities and capacity, with an infrastructure that allows us to offer the complete glass fenestration solutions to our customers.







## Understanding Balustrade Systems

The presence of protective barriers may be one of guidance for persons moving about a building. However, the majority of protective barriers are positioned to prevent persons from falling from the edges of floors, stairs, elevated walkways and roofs. The main requirement of a protective barrier is, therefore, to provide containment. It performs this function by being able to resist the likely applied forces without excessive deflection and without being penetrated.

The N&C Glass Balustrade System is supplied complete with the required glass (processed at our UK based production facility) as well as the required components. Channels are supplied at the nearest advertised length or available as a made to measure item. Flex fit kits and fitting tools are available. With measurements and information of the required solution, the team are available to assist in ensuring the right system is specified based on the project requirement.



### Why Toughened Glass?

In accordance with BS EN 12150, toughened glass is used with balustrades and Juliette balconies due to being four to five times stronger than annealed glass of the same thickness and is suited to most safety critical applications.

The increased strength enables it to be supported by two or even one edge and allows the safe use of glass in ways not possible with other glass types, all-glass doors and bolted balustrades being examples. Its use must, however, be subject to careful consideration.

The barrier selected shall be designed so as to minimise the risk of persons falling, rolling, sliding or slipping through gaps in the barrier and/or the infill. Where barriers are used when children under five are present the gap in the barrier shall not exceed 100mm. This dimension is given with the applicable Building Regulation.

NOTE 1: The 100mm is to prevent the child being held fast by the guarding

NOTE 2: Any guarding protecting glazing has to prevent a sphere of 75mm diameter touching the glazing

NOTE 3: All safety glass should meet the requirements of EN 12600.

### Load Values

The value of the design loads shall relate to the building usage. Buildings with higher usage levels will generally be designed to higher load levels.

The design loads and building usage categories can be found in applicable national Building Regulations.

### Barrier heights

The heights of barriers are given below:

Single family dwelling:

- Barriers in front of a window 800mm
- Stairs, landings, ramps, edges of internal floors 900mm
- External balconies, edges of roofs 1100mm

All other uses:

- Barriers in front of a window 800mm
- Stairs 900mm
- Other positions 1100mm
- Balconies and stands, etc. having fixed seating within 530mm of the barrier, 800mm



	LEVEL 1 Spigot		LEVEL 2 Post & Clamp		LEVEL 3 Frameless System		
0.36 kN Loading	x	17.52mm	x	10mm	x	17.52mm	
0.74 kN Loading			x	10mm	x	17.52mm	
1.50 kN Loading					x	21.52mm	
Internal use		x		x		x	
External use		x		x		x	
Handrail option		x		x		x	
Finishes	2205 Satin Stainless	RAL Colours Coated	304 Satin Stainless	316 Satin Stainless	Mill Finish	Natural Anodised	RAL Colours Coated

Glass Options

The type and thickness of glass shall be chosen to suit the design of the protective barrier and the applicable loads.

- Thermally toughened soda lime silicate safety glass in accordance with EN 12150;
- Heat soaked thermally toughened soda lime silicate safety glass in accordance with EN 14179-1;
- Laminated safety glass in accordance with EN 14449;
- Laminated thermally toughened soda lime silicate safety glass in accordance with EN 14449;
- Laminated heat soaked thermally toughened soda lime silicate safety glass in accordance with EN 14449.
- Laminated heat strengthened soda lime silicate safety glass in accordance with EN 14449

Options we supply:

Clear Toughened Glass

- 10mm
- 12mm
- 15mm
- 19mm

Clear Toughened Laminated Glass

- 13.52mm
- 17.52mm
- 21.52mm

Other thicknesses, finishes and tints are available on request.



The table below gives information on thickness of glass required for single glazed free standing glass protective barriers. The glass thickness is based on glass width of 1200mm, exposed glass height of 1100mm and suitable base clamp.

Thickness in mm for glass type					
Building Occupancy Class	Thermally Toughened Safety Glass	Toughened Laminated Safety Glass using PVB interlayer		Toughened Laminated Safety Glass using SGB interlayer	
		With Handrail	Without Handrail	With Handrail	Without Handrail
1	12	15.5	17.5	13.5	17.5
2	15	19.5	21.5	15.5	19.5
3	19	23.5	31.5	19.5	25.5
4	25	28.5	39.5	25.5	31.5

The Table below gives the applicable loadings dependent upon the building occupancy classification.

Design Loads			
Building Occupancy Class	Line load in kN/m run applied 1100mm above finished floor level	UDL in kN/m2 applied to infill panel below the line load height	Concentrated load in kN applied to infill panel below line load height
1	0.36	0.5	0.25
2	0.74	1.0	0.5
3	1.5	1.5	1.5
4	3.0	1.5	1.5

NOTE: Compliance with the above tables does not necessarily indicate suitability for purpose. The thickness and type of glass pane that can be used may also be affected by other criteria

Occupancy types that have the same applied loads – Classification 1 to 4

The Table below shows occupancy types that have the same applied loads.

Class	Occupancy
1	<b>Domestic and Residential</b> - single family dwellings including stairs, landings etc, but excluding external balconies and edges of roofs. Light pedestrian traffic routes
2	<b>Domestic and Residential</b> – multi-occupancy, balconies (including Juliette's) and edges of roofs in single family dwelling. <b>Office and Work Areas</b> – light pedestrian traffic routes except escape routes. Areas not susceptible to overcrowding also industrial and storage buildings. <b>Areas without obstacles for moving people and not susceptible to overcrowding</b> – stairs, landing, corridors, and balconies. External balconies including Juliette and edges of roofs. Footways & pavements within building adjacent to basement areas.
3	<b>Areas where people might congregate</b> – areas having fixed seating within 530mm of the barrier, balustrade etc. <b>Areas with tables or fixed seating</b> – restaurants and bars. Areas susceptible to overcrowding – footways or footpaths less than 3 metres wide, adjacent to sunken areas. <b>Retail areas</b> – all retail areas including banks, building societies or betting shops
4	<b>Areas susceptible to overcrowding</b> – theatres, cinemas, shopping malls, assembly areas. Footways or pavements greater than 3 metres wide adjacent to sunken areas. Grandstands and stadia.

\* Possibly not suitable for free paths greater than 1500mm, unless the glass complies with EN 12150 and has a classification according to EN 12600 of 1 (C) 1.

United Kingdom

TESTED  
BS6180

CE
EN1090-1  
EN1090-2  
EN1090-3  
EN1090-4

BSI





### Level 1 Spigot Stainless Steel Balustrade System

High quality spigot fitting, designed to be used with free-standing glass panels between 12 - 21.52mm thick.



### Level 2 Stainless Steel Post & Clamp Balustrade System

Innovative system with pre-assembled post for all glass balustrade systems made with stainless steel. The posts are prepared for installation with pre-drilled, threaded holes ready to accept clamps & bolts for securing glass. Suitable for 10 – 15mm glass thicknesses.

Can be used with both the Kronos and Specifier glass clamp systems.





### Level 3 - Frameless Glass System TL-6000 Profile System (0.74kN Loading)

The U-Profile is an aluminium channel system used for creating a frameless glass balustrade. Especially suitable for applications in the private sector buildings with low traffic. Suitable for glass brands between 12 - 21.52mm, with a maximum height of 1270mm and a maximum width of 1300mm. Supplied in 5 metre lengths. The system is secured using bolt fixings through the bottom of the channel and down on the substructure.



### Level 3 - Frameless Glass System TL-6020 Profile System (1.5kN Loading)

The TL-6020 U-Profile is the intelligent channel system. The outstanding feature consists in the increase of mounting distances, which now enables the use of the profile also as an anchor bolt without a countersunk head. Therefore, mounting the product is not only faster and more cost efficient, but also the strength has improved. Suitable for exterior applications and can withstand a linear load of 1.5kN and suitable for glass thicknesses of between 12 - 21.52mm. The recommended maximum height of the glass panel is 1250mm & with a maximum width of 1300mm.



### Level 3 - Frameless Glass System TL-6021 Profile System (1.5kN Loading)

Frameless glass profile with the advantage of having a "Side fix" option, allowing the installer to fix the balustrade to the leading edge of the substructure. Designed to work with a "snapframe" cover plate to conceal the fixing points for a neat finish. Suitable for exterior applications and can withstand a linear load of 1.5kN and suitable for glass thicknesses of between 12 - 21.52mm. The recommended maximum height of the glass panel is 1250mm and with a maximum width of 1300mm.







## Skyforce Top Fix System

Top Mount system allows for the balcony system to be fixed to the front of either the surround masonry, or directly onto the window/door frame. Maximum glass heights of either 1000mm or 1100mm. Glass Thickness 16.76, 17.52, 21.52mm.



Available Finishes



UK  
CA

Aluminium Anodised	Max Glass Height 1000mm	H6730000
RAL7016 (Anthracite Grey)	Max Glass Height 1000mm	H6730001
RAL9005 (Jet Black)	Max Glass Height 1000mm	H6730002
RAL9010 (Pure White)	Max Glass Height 1000mm	H6730003
Aluminium Anodised	Max Glass Height 1100mm	H6730020
RAL7016 (Anthracite Grey)	Max Glass Height 1100mm	H6730021
RAL9005 (Jet Black)	Max Glass Height 1100mm	H6730022
RAL9010 (Pure White)	Max Glass Height 1100mm	H6730023

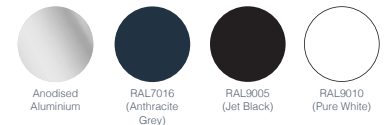


## Skyforce Side Fix System

Side Mount system allows for the balcony system to be fixed into an alcove or recess between masonry. Maximum glass heights of either 1000mm or 1100mm. Glass Thickness 16.76, 17.52, 21.52mm.



Available Finishes



UK  
CA

Aluminium Anodised	Max Glass Height 1000mm	H6730010
RAL7016 (Anthracite Grey)	Max Glass Height 1000mm	H6730011
RAL9005 (Jet Black)	Max Glass Height 1000mm	H6730012
RAL9010 (Pure White)	Max Glass Height 1000mm	H6730013
Aluminium Anodised	Max Glass Height 1100mm	H6730030
RAL7016 (Anthracite Grey)	Max Glass Height 1100mm	H6730031
RAL9005 (Jet Black)	Max Glass Height 1100mm	H6730032
RAL9010 (Pure White)	Max Glass Height 1100mm	H6730033



# Visual Quality Standard

## for Insulated Glass Units

### Sealed Units

Sealed units provide a high standard of vision. The following is a guide to the quality that can be expected.

Glass used in the manufacture of sealed units is similar to that used traditionally for single glass and will therefore, have a similar level of visual quality.

Viewing sealed units for scratches on the outer faces of the panels must be carried out before any rendering, plastering or other works adjacent to the glazing takes place, and as early as reasonably practicable following installation.

### How to do a professional inspection...

Stand in the room no less than 2 meters away from the sealed unit and look directly through it.

- For toughened, laminated or coated glasses, stand no less than 3 metres away.
- Where it is not possible to stand at the right distance then stand as far away as you can from the sealed unit.
- Do so in natural daylight, but not directly towards the sun and with no visible moisture on the surface of the glass.
- Exclude 50mm wide band around edge of the glass from the check.
- Glass must be viewed at an angle of 90°

### What to expect from Inspection

Flat transparent glass, including laminated, toughened or coated glass is acceptable if the following are neither obtrusive nor bunched:

- Bubbles or blisters
- Fine scratches not more than 25mm long

Sealed units with optical defects such as smears, fingers prints or other dirt on the cavity faces of the glass, or extraneous material in the cavity are unacceptable, if they are visually disturbing.

- Minute particles

The obtrusiveness of blemishes is judged by looking through the glass, not at it, under natural light. It must be understood that the glass used in sealed units is a processed glass, and as a consequence, blemishes are to be expected.

### Multiple Reflections

This occurs in certain light conditions and is caused by multiple surface reflections within sealed units which may vary from pane to pane.

### Brewster's Fringes - the Rainbow Effect

Small transitory rainbow effects are sometimes produced by the glass refraction of light. Their appearance is due to high quality glass sheets being placed parallel to each other.

### Low Emissivity Glass (Low- e-glass)

Tint: early versions of Low-e glass may make some light coloured materials (such as net curtains) appear slightly darker when viewed directly through the glass. Recent innovations in Low-e coatings which are more neutral now make this effect less evident.

Haze: This phenomenon may occur at certain times of the day when the sun is at a particular angle or when viewed under some lighting conditions. This phenomenon is also influenced by the type of Low-e coating.

External condensation: Thermally efficient windows are so good at keeping the heat that the outer pane can get cold as it is no longer being warmed by wasted heat. Under some weather conditions and at certain times of the year, this can result in the formation of condensation on the outside surface of the glass.

The appearance of sucker marks, transit pads and labels may appear when condensation forms on outside of the window. This is a positive indication of a thermally efficient window.

### Special Glasses

Toughened glass may show visual distortions which are accentuated by reflections in sealed units. This is a natural phenomenon and not a fault.

Laminated glass may have a few more blemishes due to it being made of several layers.

Tripled glazed Units can be highly reflective especially when manufactured with two panes of low emissivity glass. The presence of two coated panes may highlight glass imperfections that are within tolerance. If spacer bars do not line up perfectly this does not affect the performance of the unit. A tolerance of 2-3mm is acceptable.

### Leaded Glass

Externally exposed lead will oxidise – this is a natural phenomenon and does not indicate a fault with the material.

\* EN1279 Compliant





**U Values** – to control heat loss, lower the U Values, more heat is maintained within the inside room / space

**G Values** – to control heat gain, lower the G Value, more heat is reflected away resulting in a cooler inside room / space

**Part L** - Approved Document L, focuses on the conservation of fuel and power in buildings, aiming to improve energy efficiency and reduce carbon emissions

**WER** – Window Energy Rated. Scheme is to provide retail installations the overall performance of the frame and glass

**Document O** – Approved Document O covers the overheating improvement requirements as set out in Part O of Schedule 1 of the Building Regulations

**Document Q** - Approved Document Q, also known as Part Q of the Building Regulations, focuses on security in new dwellings

**EN1279** - European standard for insulating glass units

**EN12600** - European standard for the impact testing of flat glass used in buildings

**EN12150** - European Standard that specifies the requirements for thermally toughened safety glass used in buildings

**EN12449** - European Standard of conformity and the factory production control of laminated safety glass

**EN1363** - European Standard that outlines the general principles for determining the fire resistance of construction elements





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