LAUREL GLASS

SPECIALIZE IN GLASS SOLUTIONS

SINCE 2003

青岛钰冠玻璃科技有限公司

QINGDAO LAUREL GLASS TECHNOLOGY CO., LTD

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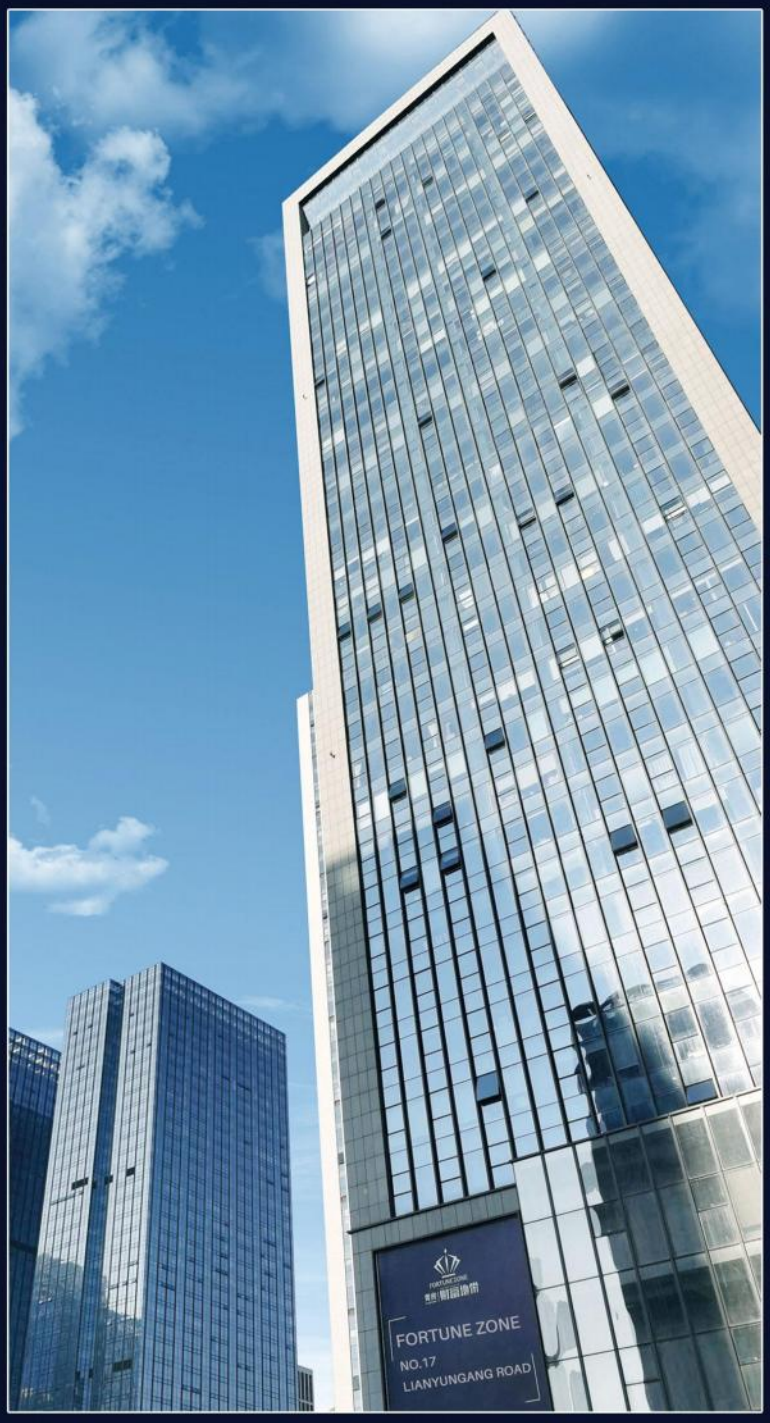
COMPANY PROFILE

Laurel Glass Group was established in 2003. Based in Qingdao city, the North of China, we have become one of the most professional and reputable integration of industry and trade with a wide spectrum of glass business in architecture, interior decoration, furniture, solar panel, and electronic application.

By more than 20 years of development, Laurel Glass has boomed into a powerful company with 280 skilled workers, 30 multi-lingual sales staff, 1000+ long-term cooperative customers from all over the world, and a 100,000m^2 workshop with top processing equipment, various processing methods, high capacity, and strong R&D ability.

Our premium products comply with European Standards (CE), North American Standard (SGCC), and Australian Certificate (CSI).
With excellent quality and detail-oriented service, Laurel Glass will be your best partner for glass materials and solutions.



CONTENTS

PRODUCTION FACILITIES


Cutting Machine


Polishing Machine

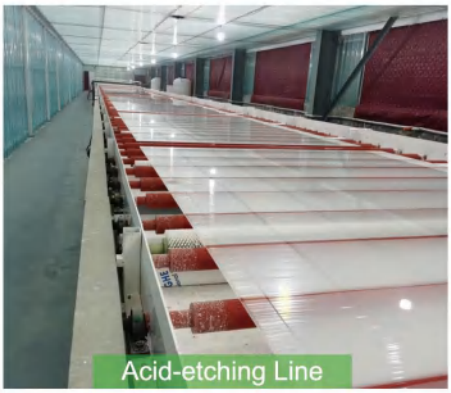

Water Jet


Vertical Drilling


Glass Tempering Furnace


Mirror Production Line

Laminated Glass Autoclave



Acid-etching Line

Magnetron Sputtering
Low-E Coating Line

Film Combining Room

Float Glass Line

Insulated Glass Line

Quality Control

TEMPERED GLASS

WHAT IS TEMPERED GLASS?

Tempered glass, also called safety glass, is produced by heating regular annealed glass to a very high temperature (approximately 700 ℃) to its softening point, then cooling it rapidly.

This process will make the glass surface under compression and the glass center under tension to increase its resistance to wind load, impact, and thermal shock 4-5 times more than regular annealed glass of the same thickness.

It is widely applied in places that require high mechanical strength and safety, such as glass doors, building curtain walls, elevation windows, interior partitions, furniture, as well as partitions closed to heat sources, and places that are subjected to severe cold and hot shock.

HOW TO PRODUCE TEMPERED GLASS?

FLOAT GLASS →
CUTTING →
POLISHING →
CLEANING →
TEMPERING →
CLEANING →
INSPECTION →
PACKING AND SHIPPING

LAUREL GLASS boasts the most advanced horizontal tempering furnace, flat and curved dual-purpose tempering furnace with precision temperature control and uniform heat treatment so that the tempered glass has good flatness, low optical distortion, and low spontaneous breakage rate, and can be used for further processing, such as coated glass, Low-E glass, optical glass, etc.

HEAT SOAK TEST

The purpose of the heat soak test is to identify tempered glass panels which may have small defects like nickel sulfide inclusions by exposing tempered glass to a high temperature (around 280℃) which is far higher than the maximum operating temperature of tempered glass for an extended period of time.

Nickel sulfide inclusions can cause the tempered glass to break spontaneously over time. Any panels with defects will be more likely to break during the heat soak test. This helps to improve the safety and reliability of tempered glass products, ensuring that they will perform as expected in a wide range of conditions.

WHY IS IT CALLED SAFETY GLASS?

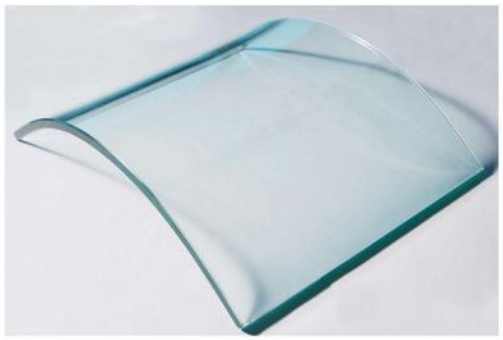
Tempered glass is designed to be highly resistant to impact and thermal stress, making it ideal for a wide range of applications where safety and durability are concerned. When it breaks, it will crumble into small granular chunks instead of splintering into irregular jagged shards that can be very sharp. The granular chunks are less likely to cause injury.

PFRED GLASS

HEAT-STRENGTHENED GLASS

Heat-strengthened glass is a type of tempered glass that is produced by heating ordinary annealed glass to a temperature of around 700°C and then cooling it down rapidly using forced air. This process causes the surface of the glass to become compressed while the core remains relatively unaffected. As a result, the glass is stronger than annealed glass but not as strong as fully tempered glass.

Heat-strengthened glass is typically used in architectural applications where greater resistance to thermal stress is required than is provided by annealed glass. Heat-strengthened glass has a higher resistance to thermal stress than annealed glass but may still break into large, sharp pieces if shattered.



CURVED TEMPERED GLASS

Curved tempered glass is a type of safety glass that has been heated and bent into a curved shape while undergoing the tempering process. With various shapes, curved glass has all the advantages of tempered glass making it ideal for a wide range of applications, such as curved glass facades, capsule lifts, spiral staircases, shower doors, showcases, canopies, and railings.

Curved Trapezoid | Cylindrical | L-Shaped | U-Shaped | Spherical | Hemicycle | Reversed Curved Surface

Flat Polished

Pencil Polished

Bevel Polished

Pencil Polished Bevel

Convex Polished

Ogee Polished

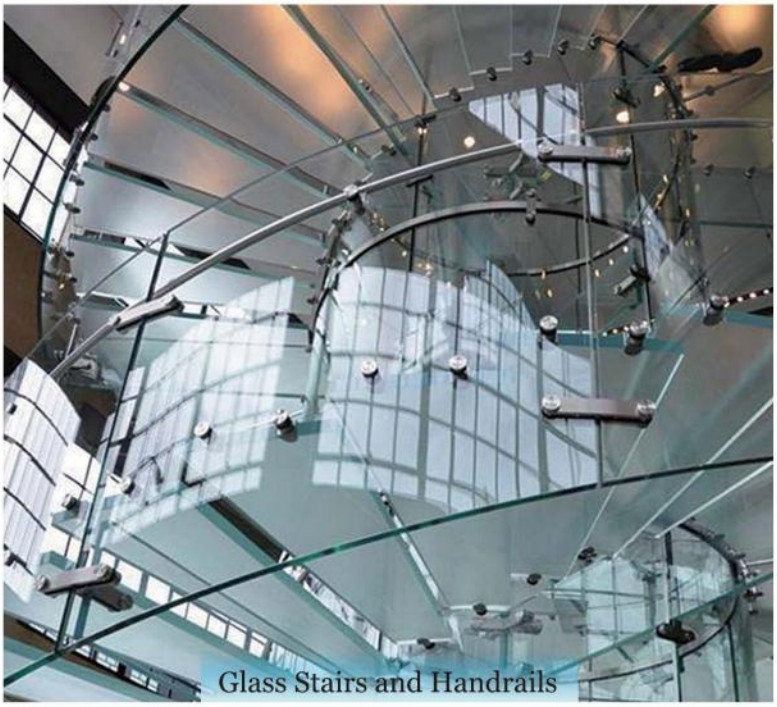
Chamfer Polished

EDGE WORK

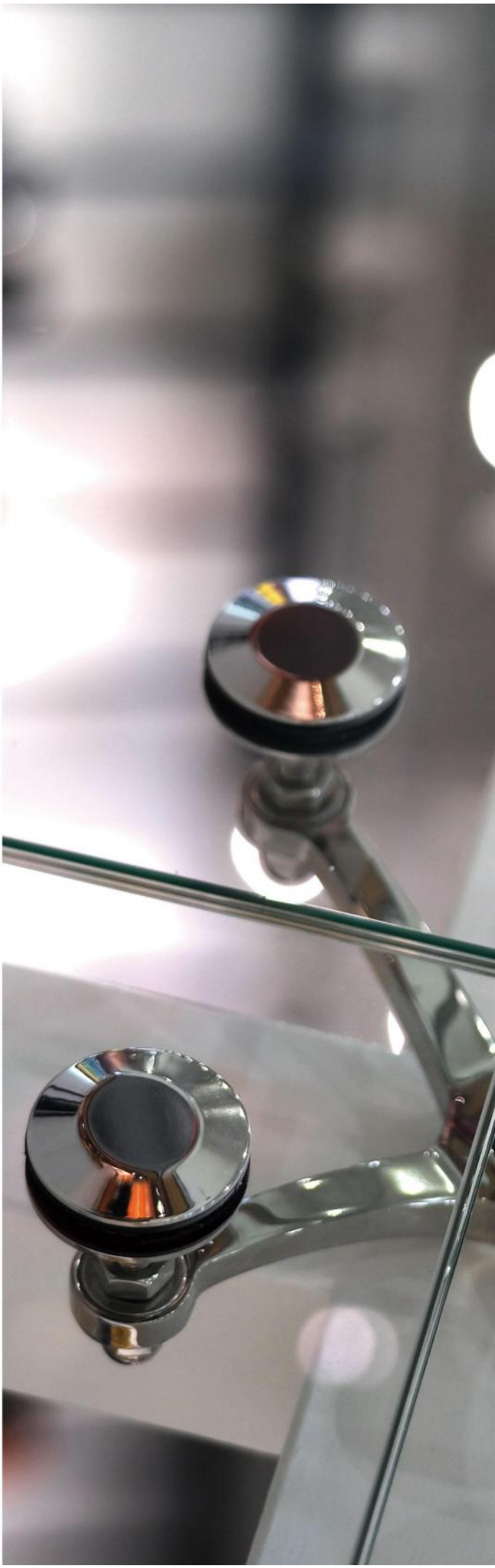
Shower Door

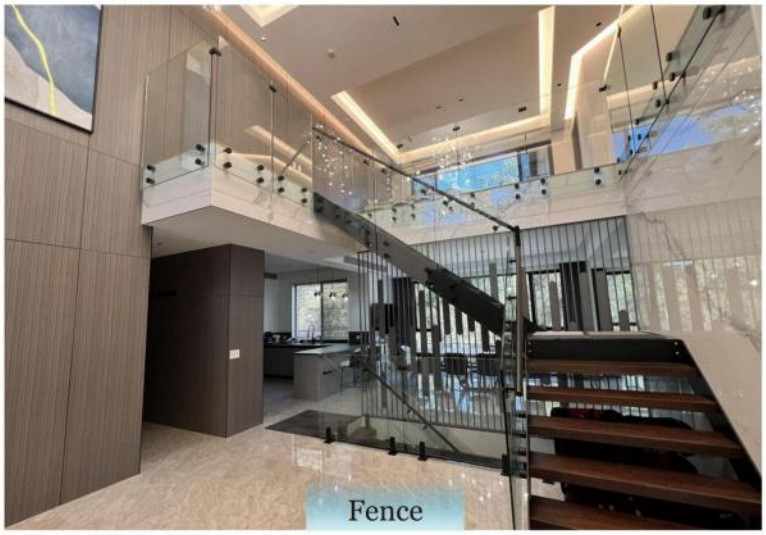
Oven Door

Fireplace Glass



Glass Stairs and Handrails

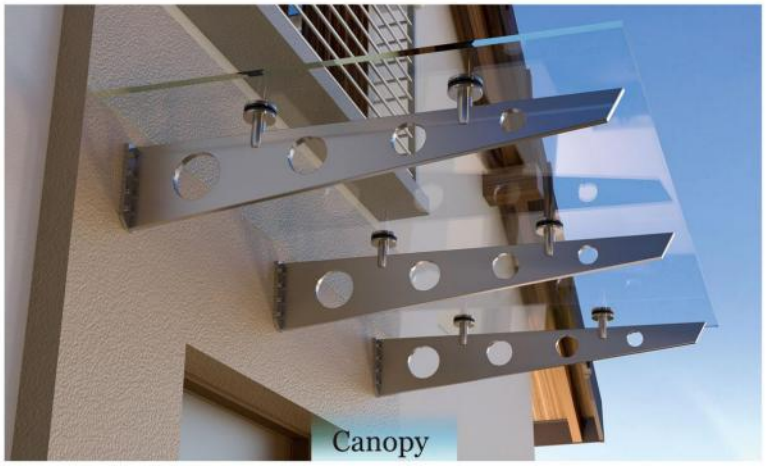




Fence

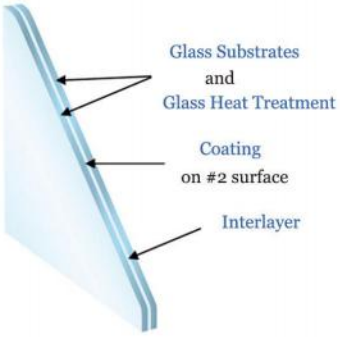
Curved Glass Balustrade

Court



Canopy

LAMINATED GLASS



Laminated glass is composed of single or multiple layers of glass bonded together with inter-layers like PVB (polyvinyl butyral), EVA (ethylene-vinyl acetate), and SGP (SentryGlas® Plus, an ionoplast polymer). This will result in durable, versatile, and safe glazing material.

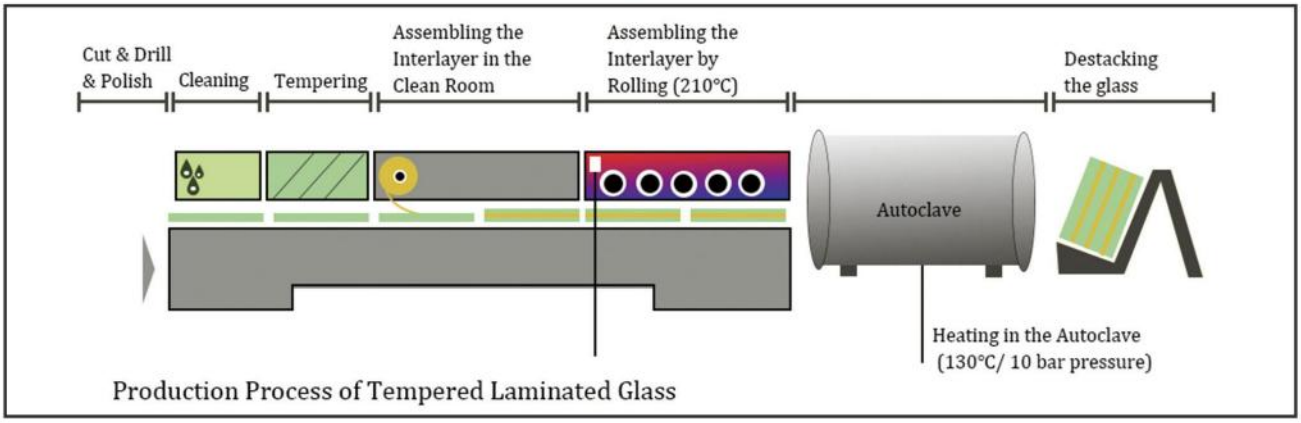
Specification Range:

PVB Thickness: 0.38mm—3.8mm

Glass Thickness: 2mm—19mm

As safety glass, laminated glass is superior to tempered glass in performance. Even if the glass is cracked, the glass fragments still stick to the interlayer which can effectively prevent cutting and falling accidents. Using different glass and film can endow laminated glass with different properties such as UV protection, energy saving, sound insulation, theft prevention, hurricane and earthquake resistance, and decoration.

Production process for laminated safety glass（schematic representation）



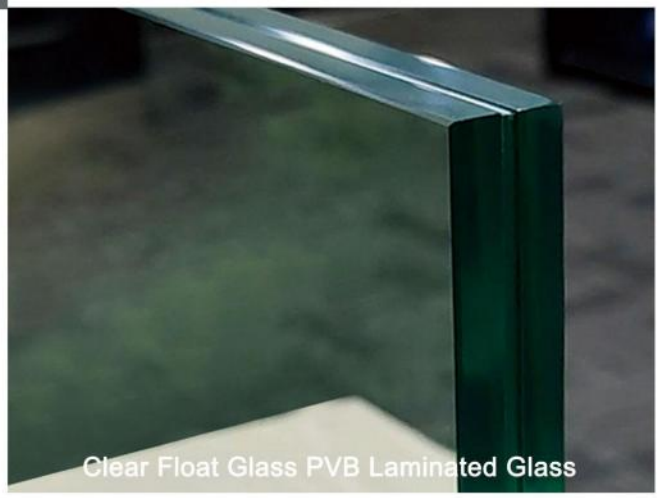
Production Process of Tempered Laminated Glass

Low Iron Glass SGP Laminated Glass

SGP GLASS

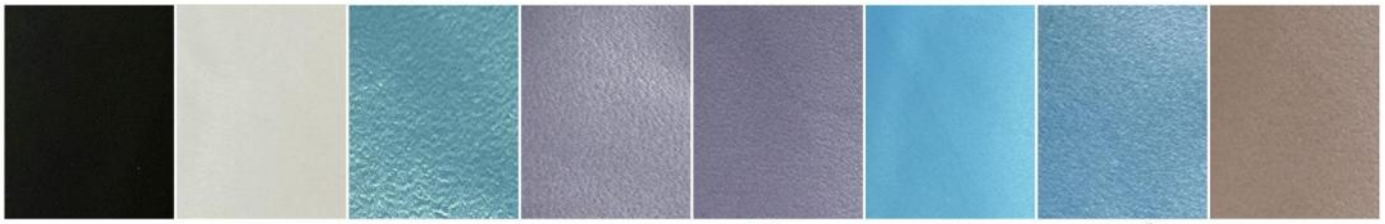
SGP laminated glass consists of two or more layers of tempered glass (usually low iron glass) bonded together using SentryGlas® Plus interlayer, a unique and innovative interlayer material with excellent transparency made from ionoplast polymer developed by Kuraray.

SGP laminated glass is significantly stronger and more rigid than standard laminated tempered glass, providing superior structural integrity and support. This increased strength enables architects and designers to use larger glass panels and more minimalist support structures, resulting in sleeker, more open designs. SGP laminated glass maintains its structural integrity and load-bearing capacity even after breakage, which is particularly beneficial in applications where safety and performance under extreme conditions are crucial, such as hurricane-prone areas or overhead glazing.



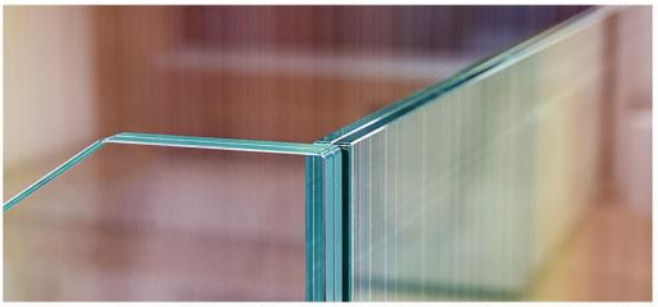
Clear Float Glass PVB Laminated Glass

COMMON COLOR FOR TINTED LAMINATED GLASS



Black | Milky White | Blue Green | Euro Gray | Blue Gray | Light Blue | Dark Blue | Bronze

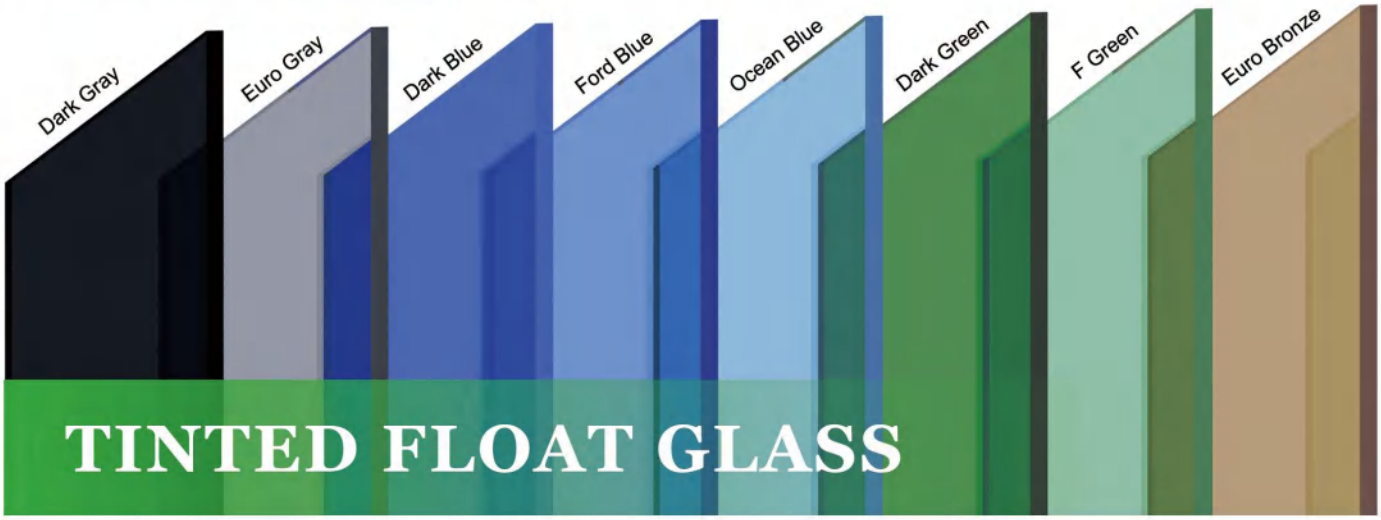
Laminated glass is widely used in various architectural and structural glazing applications, including curtain walls, facades, balustrades, skylights, canopies, and glass floors. According to different applications, special shapes or edge treatments can be adopted, which can be widely used in the furniture industry.



BULLET-PROOF GLASS

Bullet-proof glass is combined with several sheets of clear float glass at different thicknesses and several PVB films. It is generally divided into a bearing layer, a transition layer, and a protective layer. The total thickness of the common bullet-proof glass is over 20mm while the total thickness of bullet glass with a higher requirement can be over 50mm. The metal impact can only smash the glass instead of passing through it, so it is commonly used in high-security environments such as banks, embassies, and military vehicles, as well as in personal protection. It is designed to provide protection against a wide range of threats, from small-caliber handguns to high-powered rifles.

FLOAT GLASS

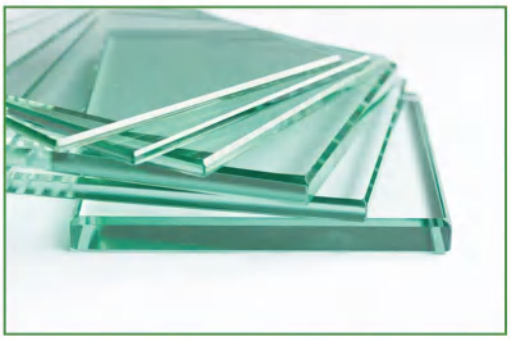


TINTED FLOAT GLASS

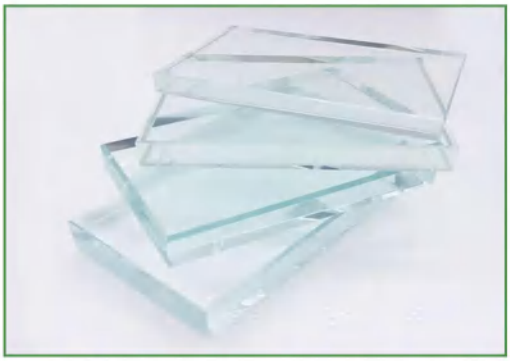
Standard Thickness: 3mm/4mm/5mm/6mm/8mm/10mm/12mm
Minimum Size (mm): 150×100
Maximum Size (mm): 3660×13000
Tinted float glass is produced by adding small amounts of metal oxides or coloring agents during the float glass manufacturing process which gives the glass a consistent color and reduces the amount of visible light that passes through the glass. The color density will increase if the glass gets thicker. Tinted glass can be further processed into reflective glass, off-line Low-E glass, and laminated glass. It is often used in building construction and interior decoration.

6mm Float Glass Optical Performance Data

Item	Thickness (mm)	Visible Light (%)		Solar Energy (%)		Shading Coefficient
		Transmission	Reflectance	Transmission	Reflectance	
Clear Float Glass	6	89	7.9	79.6	7.3	1
Low Iron Float Glass	6	90.5	8	90	8.36	1.03
Euro Bronze Float Glass	6	46	7	45	7	0.64
Euro Gray Float Glass	6	41	6.8	43.3	4	0.63
Ford Blue Float Glass	6	57	8	59	8	0.76



Thickness Range: 1.0mm-19mm
Minimum Size (mm): 150×100
Maximum Size (mm): 3660×13000
Clear float glass is a type of colorless glass with excellent optical clarity. It is made by the method of floating molten glass (usually made by silica sand, soda ash, limestone, and salt cake) on a bed of molten metal (usually tin or lead). This allows the glass to cool and solidify into a flat, even surface with no distortions or waves. Overall, as the basis of all glass and mirror processing, clear float glass is a versatile material used in various applications, ranging from residential to commercial and industrial, due to its transparency and strength.



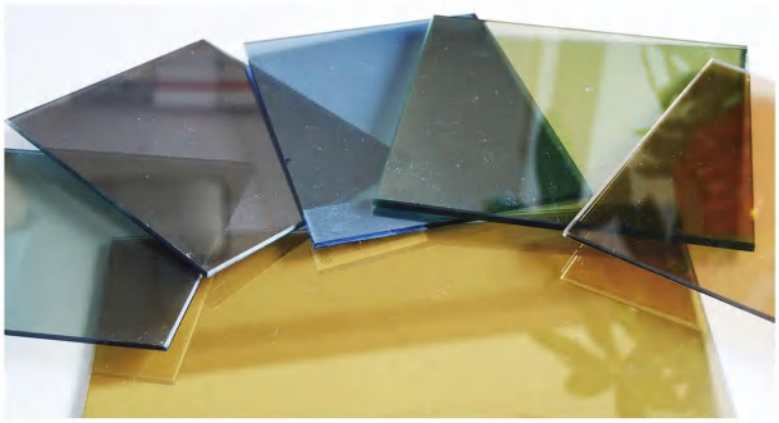
Thickness Range: 2.0mm-19mm
Minimum Size (mm): 150×100
Maximum Size (mm): 3660×13000
Low iron float glass, also known as extra clear glass or ultra-clear glass, is a type of glass that has a higher level of transparency and clarity compared to clear float glass. It is made by removing the iron oxides that are present in the raw materials used to manufacture glass and results in a reduction of the greenish tint commonly found in clear float glass. This makes it an ideal choice for applications where high optical clarity is required, such as museum display cases, furniture, electronic appliances, solar products, curtain walls, balustrades, etc.

Laurel Glass strictly follows the international quality system. All the products from Laurel Glass are made of fresh and high-quality float glass as raw materials, providing a rock-solid guarantee for further processing.

REFLECTIVE GLASS

Online coating glass, also known as online hard-coat or pyrolytic coating glass, is a type of glass that has a special, thin, durable coating (typically made of metal oxides) applied to its surface during the manufacturing process. This coating is applied when the glass is still hot and in a semi-molten state, typically as it passes through the float glass production line, resulting in a strong bond and a hard, scratch-resistant surface. The coating provides various functional properties such as thermal insulation, solar control, and low emissivity (Low-E). These properties make online coated glass suitable for a range of applications, including architectural glazing and solar panels.

The common colors of online coating glass are euro bronze, euro gray, dark gray, dark green, dark blue, Ford blue, and F green.



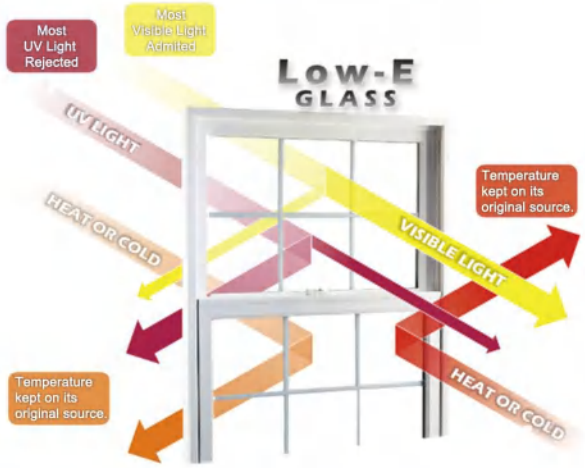
Offline coating glass, on the contrary, also known as soft-coat or sputter coating glass, refers to a type of glass that has a thin, specialized coating applied to its surface after the glass manufacturing process. Unlike online coating glass, where the coating is applied during the production of the glass, offline coating is applied separately using a process called magnetron sputtering or vacuum deposition.

Some common properties of offline coated glass include low emissivity (Low-E), solar control, anti-reflective, and decorative coatings. These coatings can improve the energy efficiency, aesthetic appeal, and overall performance of the glass in various applications, especially architectural glazing. However, offline coatings can be more susceptible to scratches and damage so it is usually made into laminated glass and insulating glass.

Online Reflective Glass Performance Parameters

Product	Thickness (mm)	Visible Light (%)		Sunlight (%)		Shading Coefficient	Sum of Transmittance of Solar Energy (%)
		Transmittance	Reflectance	Direct Transmittance	Direct Reflectance		
Euro Bronze	6	25.00	52.00	31.00	36.00	0.44	39.00
Euro Gray	6	26.00	41.70	31.60	29.90	0.47	41.50
Dark Gray	6	10.00	53.00	26.00	37.00	0.40	36.00
Ford Blue	6	25.00	57.00	36.00	40.00	0.47	42.00
Dark Blue	6	17.00	64.70	24.70	44.70	0.43	27.80
French Green	6	29.94	33.72	21.12	18.92	0.41	36.59

LOW-E GLASS



Low-E glass, a kind of coated glass, short for low emissivity glass, is a type of energy-efficient glass that is designed to minimize the amount of heat transfer through the glass. It is commonly used in curtainwalls, windows, and doors to improve the thermal performance of buildings, reducing energy consumption for heating and cooling, and providing greater comfort for occupants.

Single Silver Low-E Insulated Glass Performance Parameters

Product Configuration	Color	Visible Light (%)			Sunlight (%)		U-value (W/㎡.K)				SC	SHGC	LSG
		Tvis	Rvis		Tsol	Rsol	Air		Argon				
			Outdoor	Indoor			Winter	Summer	Winter	Summer			
6+12A+6	Neural	80	13	13	50	24	1.72	1.69	1.45	1.39	0.65	0.57	1.4
	Bluish Gray	62	17	12	38	20	1.86	1.87	1.61	1.61	0.52	0.45	1.38
	Gray	55	18	11	34	21	1.86	1.87	1.61	1.6	0.47	0.41	1.35
	Light Gray	45	22	11	28	23	1.85	1.85	1.59	1.59	0.4	0.35	1.28
	Silver	38	35	13	23	33	1.8	1.79	1.54	1.52	0.34	0.29	1.3

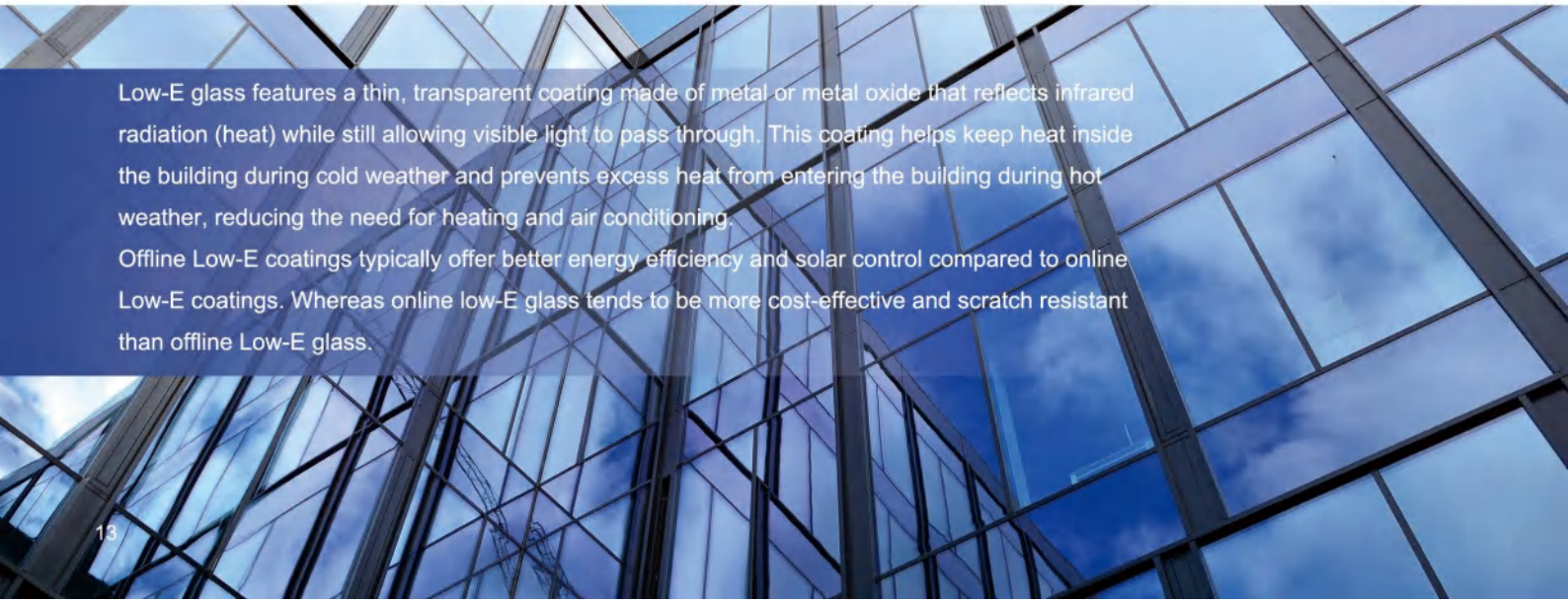
Single silver Low-E consists of a single layer of silver, is the most basic form of Low-E coating, and provides a good level of energy efficiency by reflecting a significant amount of heat.

Double Silver Low-E Insulated Glass Performance Parameters

Product Configuration	Color	Visible Light (%)			Sunlight (%)		U-value (W/㎡.K)				SC	SHGC	LSG
		Tvis	Rvis		Tsol	Rsol	Air		Argon				
			Outdoor	Indoor			Winter	Summer	Winter	Summer			
6+12A+6	Neural	70	13	13	33	34	1.66	1.6	1.38	1.29	0.43	0.37	1.89
	Light Bluish Gray	62	16	18	31	26	1.71	1.68	1.44	1.38	0.41	0.36	1.72
	Bluish Gray Ⅰ	44	20	13	19	38	1.66	1.6	1.38	1.29	0.27	0.23	1.91
	Bluish Gray Ⅱ	46	15	13	21	32	1.69	1.64	1.41	1.34	0.29	0.25	1.84

Double silver Low-e coatings have two layers of silver, which makes them more effective at reflecting heat and providing greater energy efficiency than single silver Low-e coatings. The presence of two silver layers helps to further reduce the amount of heat transferred through the glass, which can result in lower energy costs for heating and cooling a building.

Contact us for more optical parameters

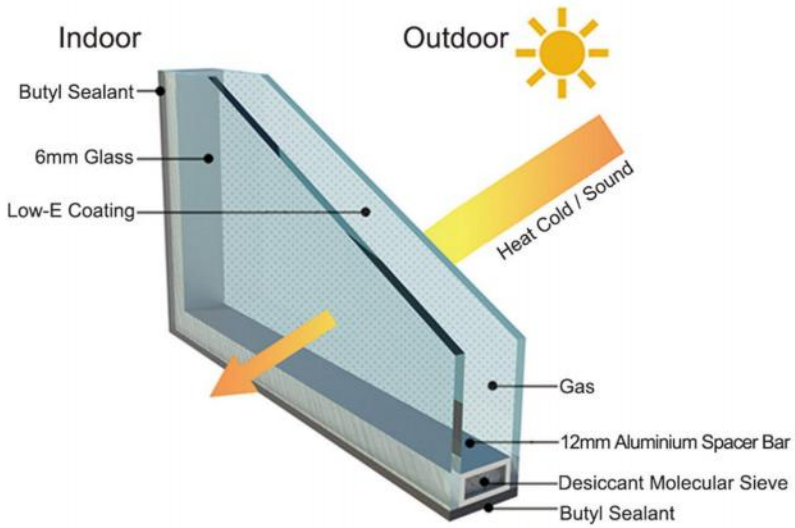


Low-E glass features a thin, transparent coating made of metal or metal oxide that reflects infrared radiation (heat) while still allowing visible light to pass through. This coating helps keep heat inside the building during cold weather and prevents excess heat from entering the building during hot weather, reducing the need for heating and air conditioning.

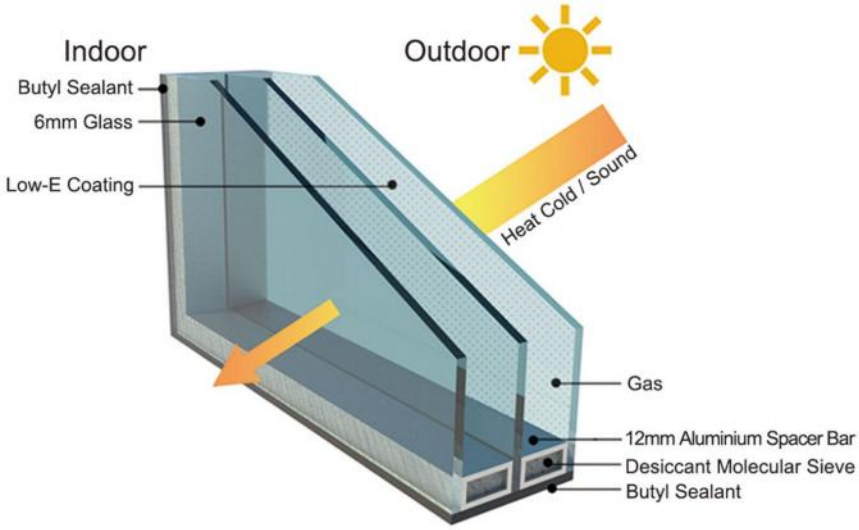
Offline Low-E coatings typically offer better energy efficiency and solar control compared to online Low-E coatings. Whereas online low-E glass tends to be more cost-effective and scratch resistant than offline Low-E glass.

INSULATED GLASS

INSULATED GLASS



Insulated glass units (IGUs) typically consist of two or more panes of glass separated by a spacer, which maintains a consistent gap between the panes. The spacer will contain molecular sieves to absorb any moisture that could potentially enter the unit. The space between the panes is filled with air or an inert gas, such as argon or even vacuum, which provides better insulation than a single glass panel. The entire unit is then sealed to prevent gas leakage and moisture penetration.



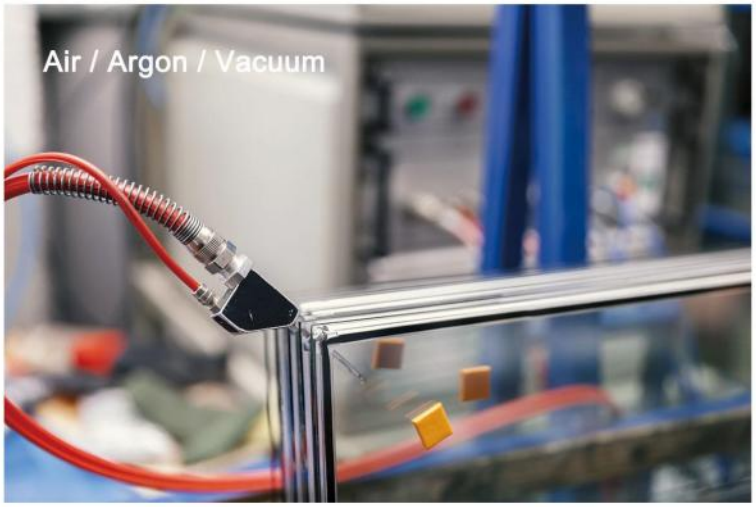
Triple insulated glass is an advanced version of insulated glass that uses three layers of glass instead of two. This configuration offers even better thermal and acoustic insulation than double-glazed units, making it an ideal choice for extreme climates or buildings with high energy efficiency requirements.

Laminated Insulating

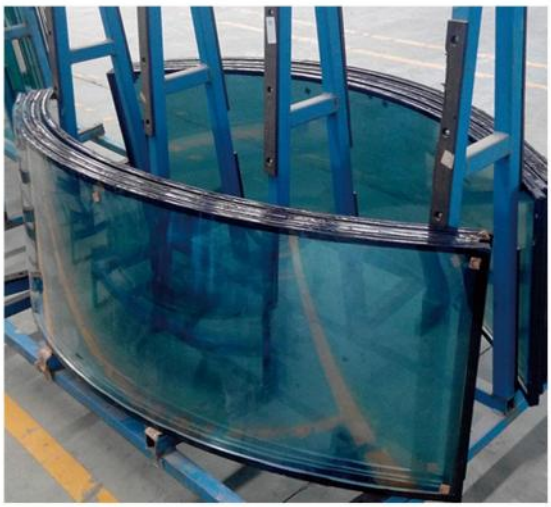
Laminated Insulating

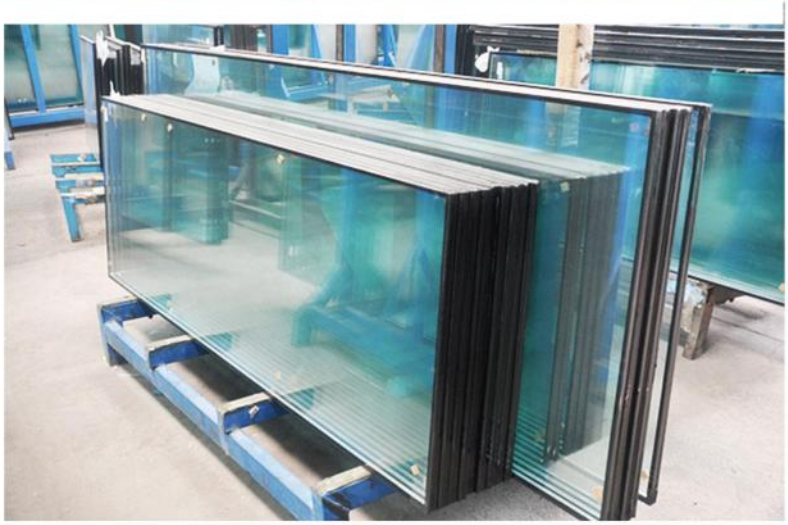
Double Laminated Insulating

Laminated insulated glass incorporates a laminated glass pane in the insulated glass unit to enhance the safety and security of the glass, making it more difficult to break and holding the glass fragments together if it does break. Additionally, laminated glass can provide UV protection, reducing the fading of furnishings and fabrics due to sunlight exposure.

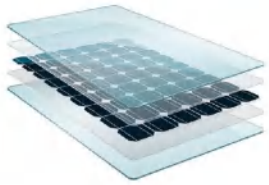


Low-E insulated glass combines the benefits of insulated glass with the energy-efficient properties of Low-E glass. In this configuration, one or both of the glass panes have a Low-E coating applied, which reflects infrared radiation (heat) while still allowing visible light to pass through. This further enhances the thermal performance of the window, keeping heat inside during cold weather and preventing excess heat from entering during hot weather. Low-E insulated glass offers superior energy efficiency, reduced heating and cooling costs, and greater indoor comfort compared to standard insulated glass.



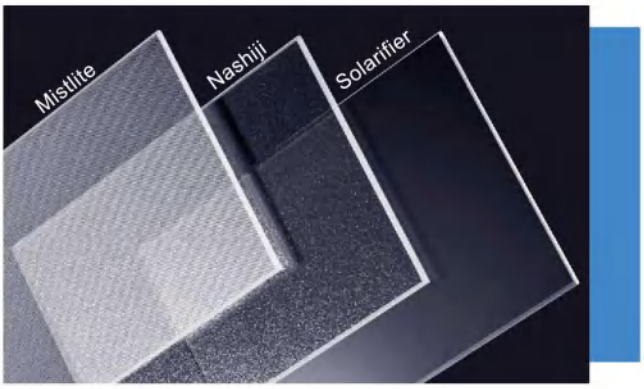


PHOTOVOLTAIC SOLAR GLASS



Glass with an AR (anti-reflective) coating goes through a specialized roll coating procedure where a specific coating is placed to reduce reflection and increase light transmission. Enabling more sunlight to hit the photovoltaic cells or solar collectors, this in turn increases the effectiveness of solar energy systems.

There is another advanced glass material. Tempered low iron Mistlite glass is created especially for solar energy applications including solar panels, photovoltaic panels, solar batteries, and solar collectors. The patterned, textured surface of Mistlite glass efficiently scatters and diffuses light, reducing glare and reflection while retaining maximum light transmission. Its low iron level lessens the typical greenish tint of clear float glass, increasing light transmission.



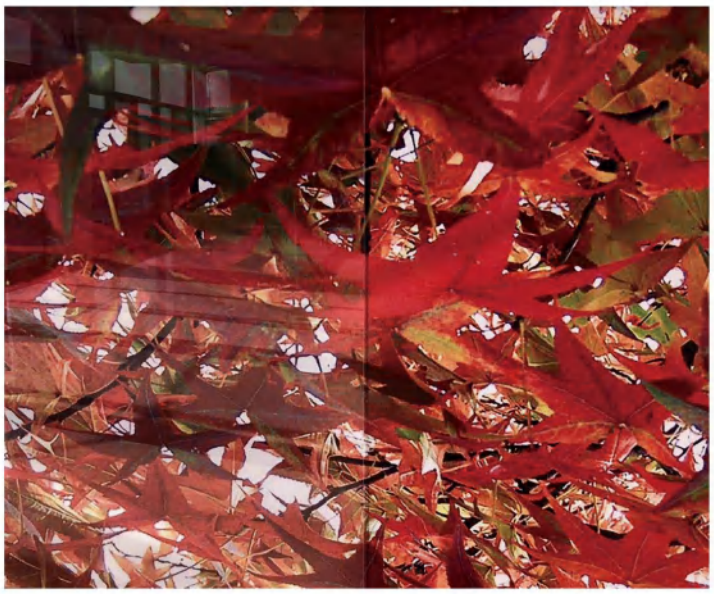
A novel technique for altering the surface structure of these glass panels is used in the patented technology to enhance their efficiency in solar energy systems. The best feasible direct and hemispherical light transmittance is the main goal of changing the glass' surface structure. The photovoltaic cells or absorbers in solar collectors will receive more sunlight as a result, boosting their efficiency. Additionally, the redesigned structure is made to maximize light transmission over a variety of wavelengths, which are best used by absorbers in solar collectors and photovoltaic cells.

AR Coating Glass

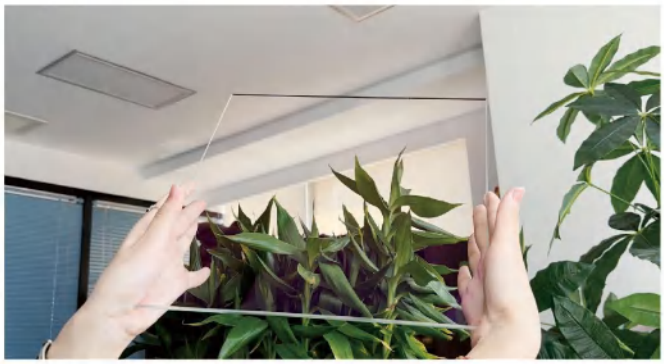
Different than solar AR glass, AR coating is another kind of anti-reflective coating, which is a specialized thin-film coating applied to glass surfaces by a magnetron sputtering system used in display cases, teleprompters, and other applications where minimizing reflections and maximizing light transmission is essential. This coating significantly improves the clarity, visibility, and overall performance of glass surfaces in various applications.

In a display case or teleprompter, AR coating glass offers the following benefits:

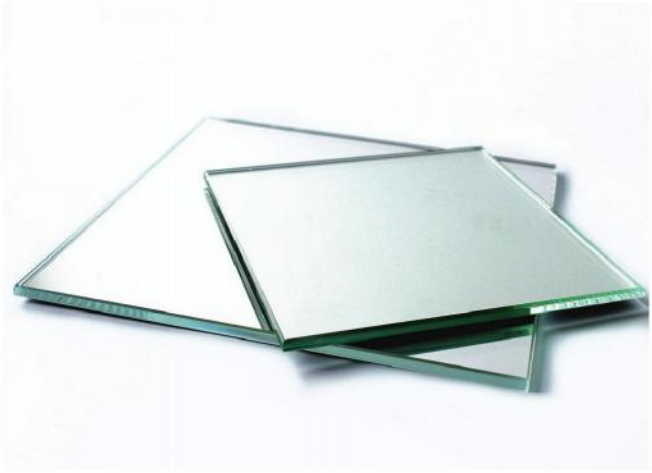
Ordinary Low Iron Float Glass AR Coating Glass



① **99% light transmission:** The coating allows more light to pass through the glass, resulting in a brighter and clearer image, essential for both display cases and teleprompters.
② **Enhanced visibility:** The anti-reflective coating reduces glare and reflections (＜0.5%), making it easier for viewers to see the displayed items or read the text without any distractions.
③ **Minimal color distortion:** Low iron AR coating glass with high flatness helps maintain the true colors of the displayed items, preventing color shifts that may occur due to reflections or other optical interferences.
④**Protection:** AR coated laminated glass can provide protection for the displayed items by reducing the harmful effects of UV light.



•MIRROR•



The mirror is to sputter a thin layer of metal or metal oxide (usually silver or aluminum) on high-quality float glass (including tinted float glass and low iron float glass) to form a flat and reflective surface and then apply protection layer (ordinary paint or copper-free epoxy paint) over the reflective coating to prevent oxidation or other forms of damage. The choice of coating material depends on the desired properties of the final mirror panel, such as reflectivity and durability. The mirror panel could be cut to the desired size and shape using specialized equipment. The edges could be polished or beveled to provide a smooth, safe finish.

The silver mirror tends to have higher reflectivity compared to aluminum mirror, especially in visible and near-infrared wavelengths. This results in better image clarity, brightness, and color accuracy.

The aluminum mirror, while still offering good reflectivity, may appear slightly darker or produce slightly lower image quality compared to the silver mirror. On the other hand, aluminum mirror involves fewer hazardous chemicals than silver mirror and are considered more environmentally friendly.

Golden

Bronze

Euro Gray

Dark Gray

The copper-free epoxy mirror is an innovative and environmentally friendly alternative to the traditional silver mirror. This mirror is made without the use of copper, which is commonly used in mirror production as a protective layer between the reflective silver coating and the backing paint. Instead, copper-free mirror utilizes an epoxy backing to protect the silver coating and provide additional support. It offers improved durability, corrosion resistance, and safety, while still providing high-quality reflections, making it a suitable choice for a wide range of applications.

The full-length mirror, also known as the floor mirror, is a large mirror designed to provide a complete reflection of a person's body from head to toe. This mirror is typically taller than its wide and can be either freestanding, wall-mounted, or leaned against a wall. It offers aesthetic appeal, customizability, and enhanced functionality, making them a popular choice for various settings and applications, both for functional and decorative purposes.

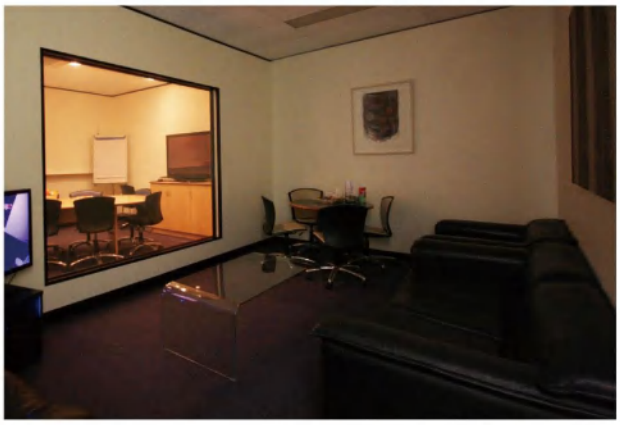
The wall-mounted mirror is a type of mirror that is space-saving, nice-looking, and easy to install.
To combine various frame materials and polishing types for decorative purposes to help finish the space around the sinks and vanities, naturally increase the light, create a focal point and a statement piece, as well as provide a place to pause and reflect.

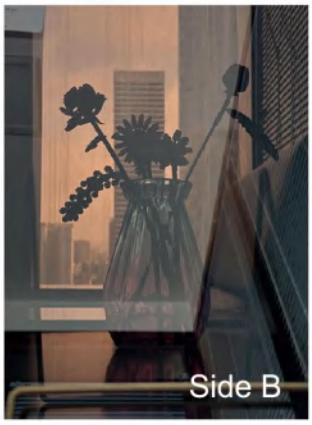
When it comes to enhancing the safety of mirrors, two main methods stand out: safety film and tempering. Safety film is a layer adhered to the back of a mirror. If the mirror breaks, the film holds the shards in place, reducing the risk of injury. On the other side, temperable mirrors are a special kind of reflective glass with high reflectivity that can undergo heat treatment to strengthen the glass. Unlike traditional mirrors, these can be tempered, making them more resilient to impacts and less likely to break into sharp pieces.

The safety film for mirror is a protective layer applied to the back of a mirror panel to enhance its safety and durability. The safe film is usually made from materials like polyvinyl butyral (PVB) or ethylene-vinyl acetate (EVA), which are strong and moisture-resistant. When the mirror is broken, the safe film holds the broken pieces together, reducing the risk of injury from sharp edges and flying debris. Especially suitable for use as the decorative mirror, the bathroom mirror, and the gym mirror.

The LED mirror is a mirror that incorporates LED (Light Emitting Diode) lights into its design, providing a well-lit and energy-efficient solution for various applications. LED mirror is commonly used in bathrooms, dressing rooms, and other areas where optimal lighting is required for grooming or makeup application.

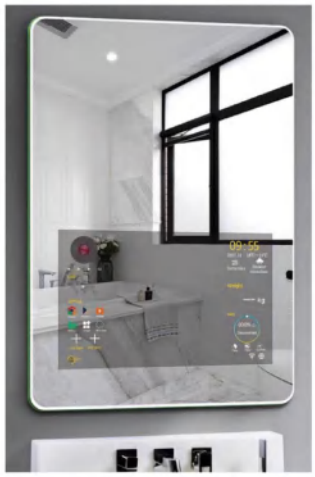
The abnormity mirror, also known as the irregular-shaped or custom-shaped mirror, is designed and fabricated in non-standard or unique shapes. This mirror breaks away from traditional rectangular or circular forms, offering a creative and artistic option for various applications in residential, commercial, and public spaces.





The two-way mirror is partially reflective and partially transparent. This unique characteristic allows people on one side of the mirror to see through it, while those on the other side see only their reflection. The two-way mirror is commonly used in settings where observation or privacy is required, such as in interrogation rooms, security control rooms, public restrooms, or observation areas. To obtain the best effect, the light on the observed side is better to be lighter than that of the observation side. The two-way mirror can also be used for decorative purposes like neon infinity mirrors and wine cabinets.

The AI smart mirror is a technologically advanced touch/ voice control digital mirror that integrates various electronic features and functions. This mirror typically consists of HTR (High Transmission Reflective) coating and built-in display screens, cameras, sensors, and internet connectivity, providing multimedia features and an interactive experience, catering to different needs and preferences. This kind of mirror can also be used in digital advertisement display stand.



The oxidized antique mirror, also known as the distressed or aged mirror, is a type of decorative mirror designed to resemble the appearance of an aged or weathered mirror. This mirror often features patterns and a deliberately tarnished surface by using chemicals or applying paint layers, giving them a vintage, timeworn look. This mirror can add character, charm, and visual interest to various interior design styles and spaces, offering a unique solution for diverse design needs.

ACID-ETCHED GLASS

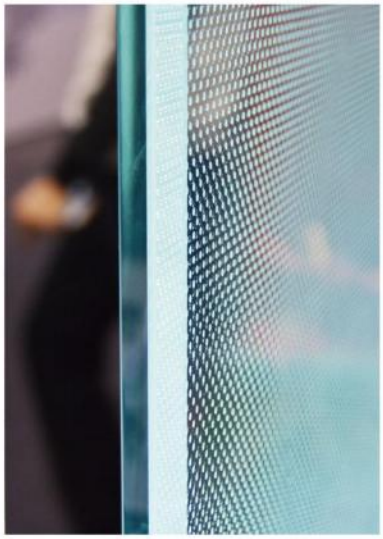
Acid-etched glass is a type of decorative glass that has been treated with an acid solution to create a distinctive, frosted appearance. This process involves applying a chemical (typically hydrofluoric acid) to the glass surface, which reacts with the silica in the glass and removes a thin layer. The resulting texture can vary from a light, translucent frost to a more opaque, matte finish, depending on the concentration of acid and the duration of the etching process.

The frosted appearance of acid-etched glass allows for light transmission while maintaining privacy, making it a popular choice for windows, partitions, and shower enclosures.

The etching process can create various patterns, designs, and gradients, allowing for a range of customization options.

Acid-etched glass is less prone to fingerprints (even without fingerprints) and smudges compared to clear glass, making it easier to maintain and keep clean.

Since the etching process does not weaken the glass, acid-etched glass retains its structural integrity, and can even be tempered or laminated for additional safety features.



Applications:

Window, Wall, Door Panel, Transom, Screen, Mirror, Tabletop, Cladding, Partition, Balustrade, Backsplash, Elevator Interior, Display Case, Railing Panel, Wall Covering, Floor, Facade, Ceiling, Canopy, etc.

DICHROIC GLASS

Dichroic glass is a unique, vibrant, eye-catching, and visually striking type of glass known for its mesmerizing appearance and the ability to display multiple colors depending on the angle of light and the viewer's perspective. The term "dichroic" originates from the Greek words "di," meaning two, and "chroma," meaning color. The dichroic effect is achieved by applying multiple ultra-thin layers of metallic oxides, such as silicon, titanium, or magnesium, onto the surface of the glass using a vacuum deposition process. The layers form a highly reflective, and interference-based coating that selectively transmits and reflects different wavelengths of light. Applications of dichroic glass include glass art and decorative accents for architectural installations.

Optical Parameters		
Thickness（MM）	VL Transmittance	VL Reflection
5-6	75	25
8	75	25
10	75	25

Size: 2440*3300mm, 2140*3300mm, 2140*3660mm, 2440*3660mm

Color: Blue Dichroic, Orange Dichroic, Green Dichroic

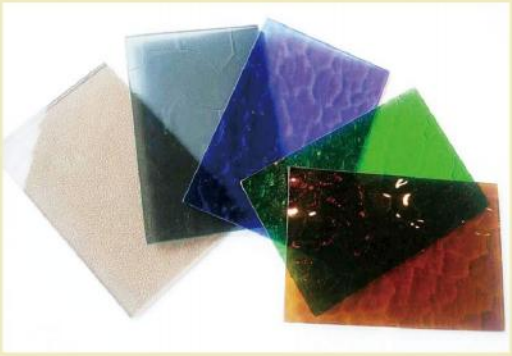
Processing:

Tempered, Curved, Heat-soak Test, Cut-to-size, Slotted, Punched, Polished, PVB or SGP laminated, Insulated

Application:

Squares, Office Buildings, Museums, Opera, Theaters, Cinemas, Salon, KTV, Shopping Malls, Partition Walls, Doors, Glass Railings, Countertop, Commercial or Residential Sphere etc.

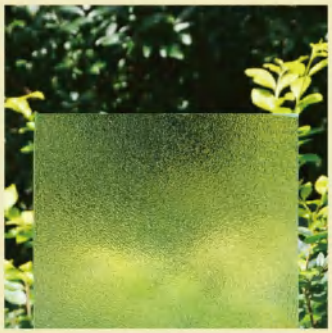
PATTERN GLASS



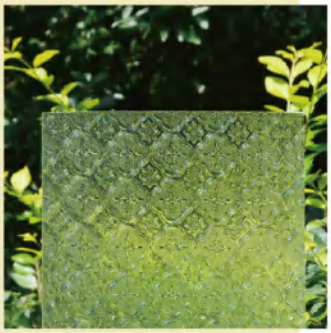
To create pattern glass, molten glass is passed through rollers to provide some consistency in thickness and add texture to the glass surface. The upper roller is smooth, and the other roller has a pattern design, thus one side of the pattern glass is flat and the other side is patterned. Other colors like low iron, bronze, euro gray, blue, green, and amber are also available for pattern glass. High-quality pattern glass can be further produced into laminated, insulated, and tempered glass.

Products made of pattern glass have been utilized in private areas while permitting the same amount of light transmission as clear glass. The strength of pattern glass is as good as clear float glass. Unlike clear float glass, pattern glass has a better ability to resist water stains, streaks, and scratches.

Pattern glass is a sensible choice for applications like entryways, room dividers, patio furniture, kitchen cabinet doors, entertainment centers, lighting fixtures, conference rooms, etc.



Nashiji



Flora

Diamond

Aqualite

Kasumi

Masterlite

Rain-S

Moru I

Millennium

Maple Leaf

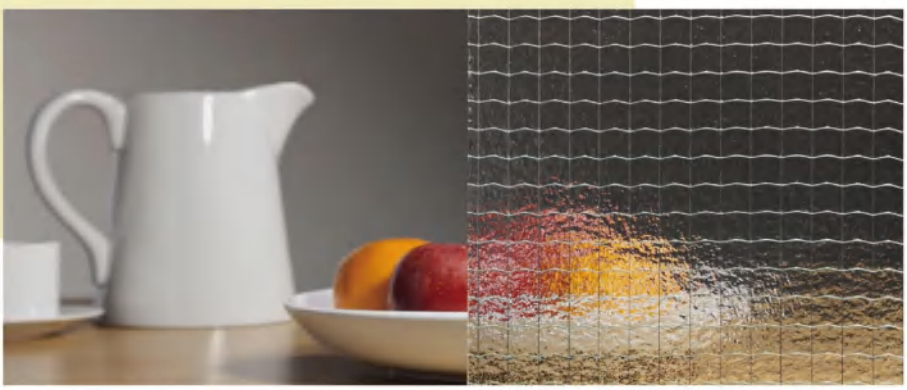
Oceanic

Mistlite

**** Contact us for more patterns***

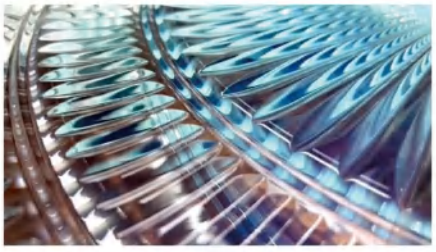
NASHIJI WIRED GLASS

Nashiji wired glass, which has a decorative pattern and is a sort of safety glass, is created by inserting a wire mesh into a glass pane during the manufacturing process. In the event of breakage, the wire mesh aids in keeping the glass together and lowers the danger of harm from shards of sharp glass. The term "Nashiji" is derived from the Japanese word for "pear," as the pattern on the glass is similar to the surface of a pear. When safety and security are priorities in architecture, such as in doors, walls, and windows, Nashiji wired glass is frequently employed.

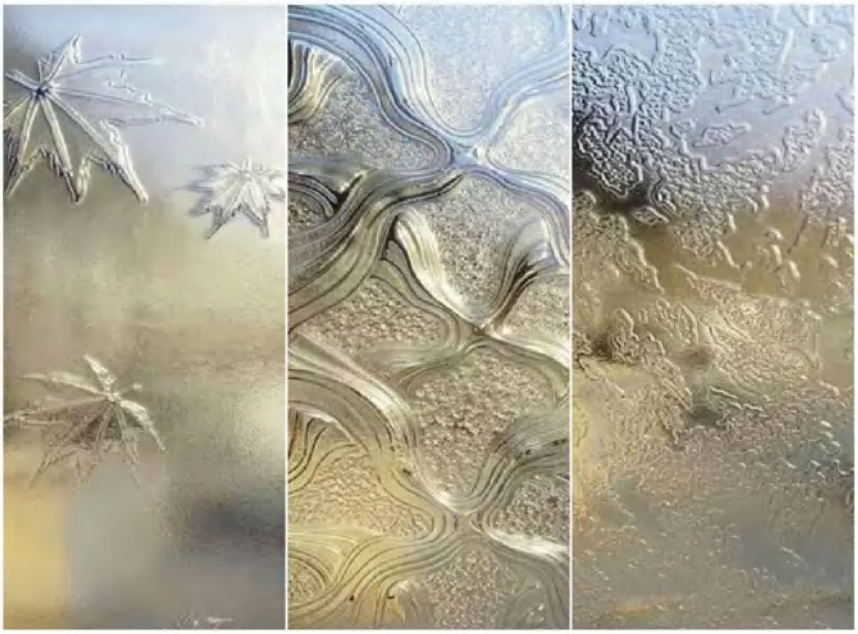


GROOVED GLASS

Glass with grooves, channels, or patterns cut or etched into its surface is called grooved glass. They are often carefully designed and meticulously crafted to meet specific aesthetic or functional requirements. Grooved glass can serve various purposes, from decoration to light diffusion. This is particularly useful in spaces where privacy is needed while still allowing natural light to enter. The grooves can scatter light in different directions, producing a pleasant and diffused lighting effect. Grooved glass can be combined with other types of glass, such as colored or textured glass, to create even more visually striking designs. It can also be incorporated into insulated glass units or laminated glass for increased energy efficiency and safety.

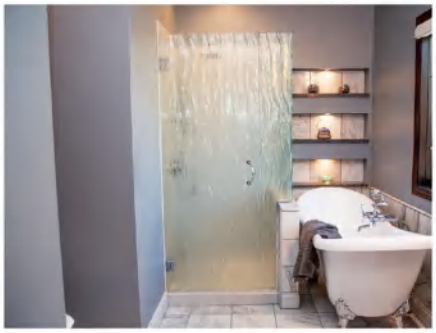


CAST GLASS

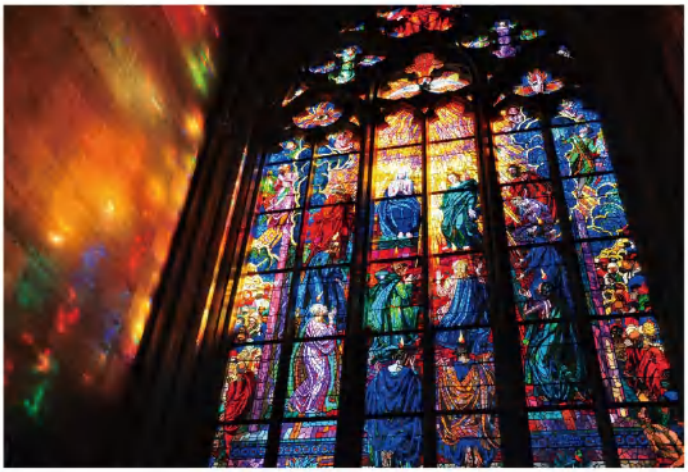


Cast glass is a form of glassmaking that involves melting glass and then pouring or pressing it into a mold to create a desired shape or design. Thousands of years have passed, but this method is still widely employed today to make a variety of glass things, including unique logos, ornaments, and architectural components. The object can subsequently undergo additional processing, such as polishing, sanding, or adding additional details or decorative elements.

Cast glass offers a certain level of flexibility in application due to its ability to create complex shapes, intricate designs, and textures that might be difficult to achieve with other glassmaking techniques. Cast glass allows for the creation of unique, one-of-a-kind pieces tailored to specific artistic visions or functional requirements. Artists and designers can produce virtually any shape or design they imagine using molds. Besides, the casting process allows for the incorporation of different colors and color gradients within a single piece.
Artists can use techniques such as frit casting, where small pieces of colored glass are added to the mold, to create interesting color effects.



STAINED GLASS



Laurel's UK Project

Stained glass is made of colored glass pieces that are held together by a framework of lead or other metal bars. When light passes through stained glass, which is a type of translucent, textured, decorative art, it produces a soft, diffused impression. In most cases, the glass pieces are cut and fashioned to fit a particular pattern or design, which may feature scenes, characters, figures, abstract patterns, or geometric shapes. Stained glass is frequently connected to religious construction, especially that found in churches and cathedrals, but it is also employed for ornamentation in secular settings. Stained glass has been used for ages to make visually appealing designs, improve the atmosphere of a location, and communicate stories with its vibrant and sophisticated compositions.

DIGITAL CERAMIC PRINTED GLASS

Digital ceramic printed glass is a cutting-edge and adaptable material that is produced by the most innovative and advanced method of printing high-resolution images, patterns, and designs directly onto glass surfaces using specialized ceramic inks. It is a durable, accurate, and flexible glass design solution for architects and designers. This technology provides unmatched resistance to scratching, UV light, and weather deterioration.

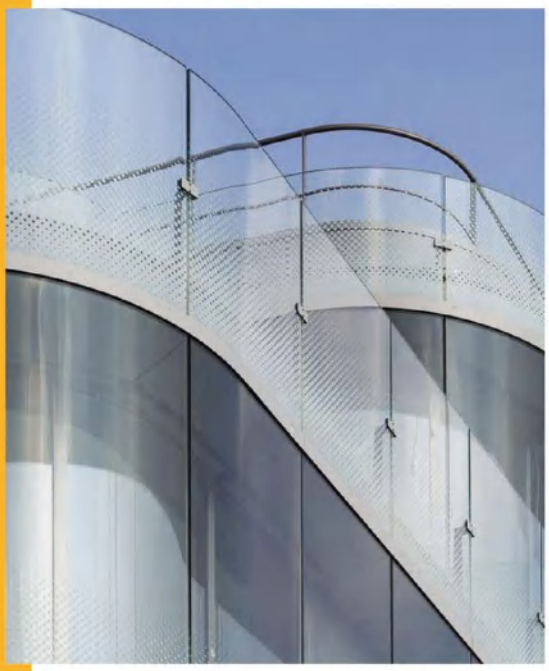
Digital ceramic printed glass expands the range of decorative glass products and is suitable for most glass applications, including interior and exterior architectural glass, automotive, furniture, and artwork. This high-tech printer technology goes far beyond the limitations and costs of screen printing and UV glass printing capabilities.

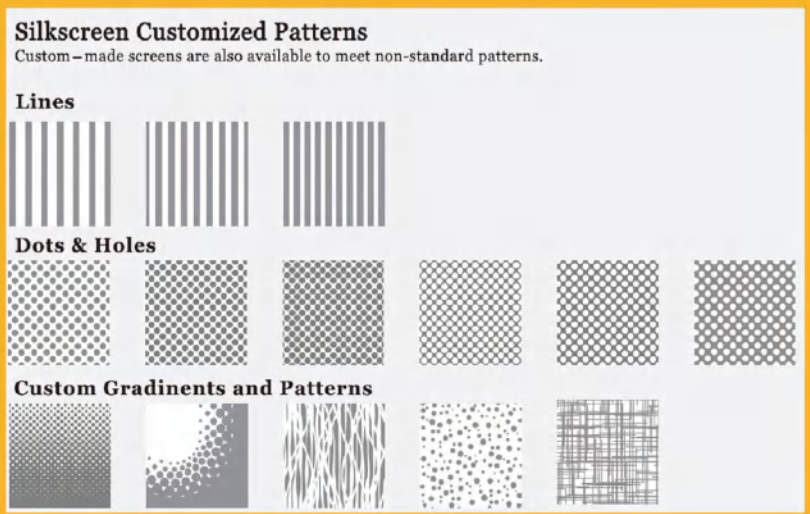
CERAMIC FRIT GLASS

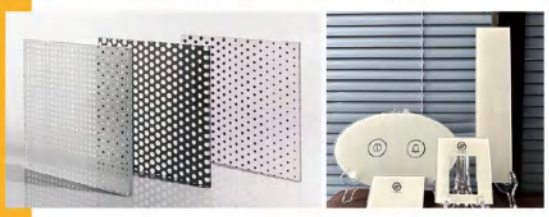
Ceramic frit glass is a type of decorative glass that has been produced by applying a ceramic frit (a finely ground mixture of minerals and glass particles) to the surface of the glass, followed by a heat-treatment process. The frit is typically applied using a silk-screen printing method or a roller coating technique so it is also called silk-screen glass, which allows for the creation of intricate patterns, designs, and various levels of opacity.

This permanent and durable finish can be done during glass tempering or heat strengthening, making the end product more resistant to breakage.

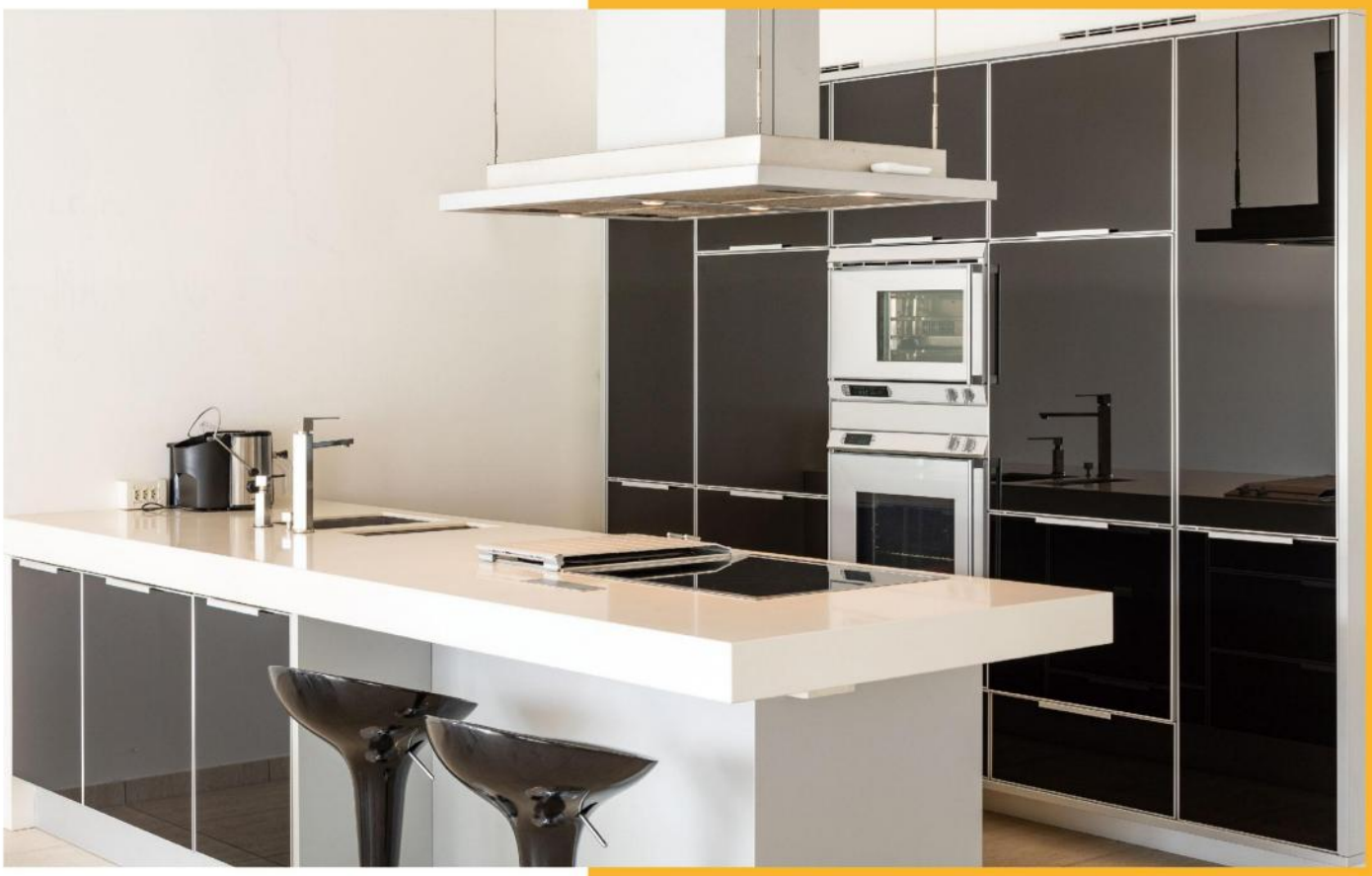
With the ability to customization, privacy protection, safety, and solar control, ceramic frit glass can meet various design needs, making it a functional and popular material for both interior and exterior applications in residential, commercial, and public spaces.







LACQUERED GLASS



The process of adding a specifically formulated paint or lacquer to the back of a glass panel results in lacquered glass often called back-painted glass or baked paint glass. After that, the glass is baked at high temperature to make sure the paint adheres securely and uniformly, producing a long-lasting, glossy, and vibrant finish.

Black | Chinese Red | Extension Champagne

Dark Blue | Crystal Green | Purple

The space has an appealing feeling of depth thanks to the lacquered glass, which can add the "X-Factory" to the area if used properly. Lacquered glass interior applications provide more than simply a beautiful polish and elegant look. They are incredibly scratch-resistant, don't fade, come in a variety of colors, and need very little maintenance. Lacquered glass is a popular and expert choice for many applications in interior design (bathroom vanity, cabinet glass insert), architecture (elevator wall, wall cladding), and furniture (kitchen splashbacks, tabletop) because it can be cut and have its edges completed, giving interior designers a wide range of options.

U CHANNEL GLASS

U Channel Glass is a cutting-edge, high-end solution for glass facade, construction, ceiling, and partition glazing in the architectural construction sector for both interior and exterior usage. This specific type of casting glass is created in a computer-controlled smelting furnace and has high mechanical strength, making it suitable for installation on high-rise structures and other structures that require adequate lighting. And by doing so, the buildings could avoid needing additional vertical and horizontal substructures. U-profile glass has emerged as one of the latest environmentally friendly and cost-effective glass kinds thanks to its excellent illumination, heat insulation, and sound insulation properties.

U Channel Glass Low Iron Clear

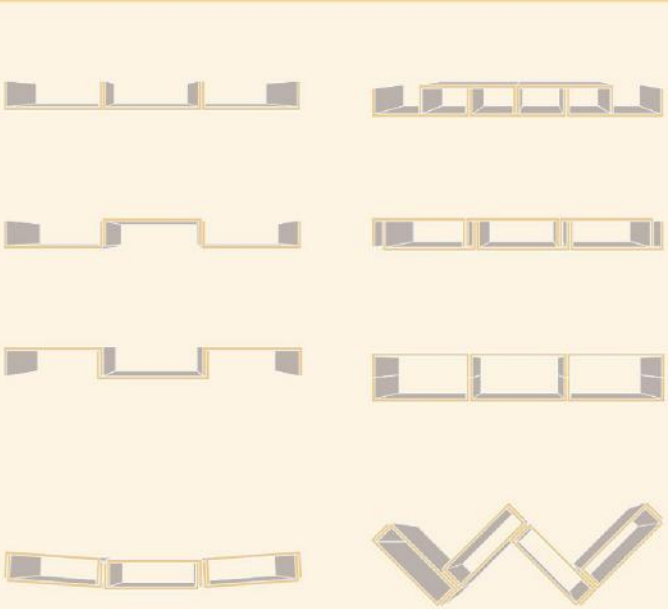
U Channel Glass Low Iron Acid-etched on One Side

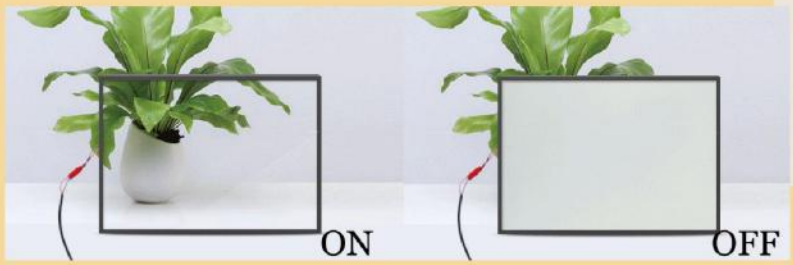
U Channel Glass Low Iron Acid-etched with Nashiji Pattern

U Channel Glass Low Iron Acid-etched

U CHANNEL GLASS

COMBINATION





SMART GLASS

Smart glass, also known as switchable glass or dynamic glass, is an innovative type of glass technology that allows users to control the amount of light, heat, or privacy in space by adjusting the glass's transparency or opacity. This is achieved by incorporating special materials, such as liquid crystals, electrochromic, or suspended particle devices, within the glass layers that react to an electrical current or other stimuli. Smart glass offers several benefits, including energy efficiency, enhanced privacy, reduced glare, improved aesthetics, customizable, and wide applications (especially suitable for conference rooms). As technology continues to advance, we can expect to see even more innovative uses for smart glass in the future.

CERTIFICATE

AUSTRALIA

CSI Certificate

PRODUCT COMPLIANCE SCHEDULE

Qingdao Laurel Glass Technology Co. LTD

AS/NZS 2208:1996 Safety glazing materials in buildings

PRODUCT COMPLIANCE SCHEDULE

Qingdao Laurel Glass Technology Co. LTD.

AS/NZS 2208:1996 Safety glazing materials in buildings

This Certificate of Conformance, has been issued to confirm that;

Qingdao Laurel Glass Technology Co. LTD.

AS/NZS 4666:2012 Insulating glass units

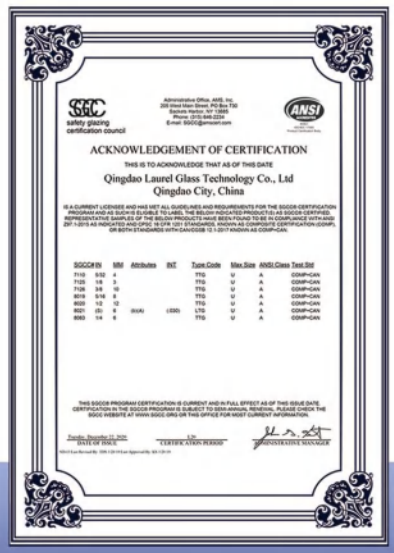
EUROPE

CE Certificate

ISET S.r.l.

CERTIFICATE

Certificat - Certificado- Сертификат - Zertifikat - 证书



safety glazing certification council

ACKNOWLEDGEMENT OF CERTIFICATION

THIS IS TO ACKNOWLEDGE THAT AS OF THIS DATE

Qingdao Laurel Glass Technology Co., Ltd

Qingdao City, China

NORTH AMERICA

SGCC Certificate

ISET S.r.l.

CERTIFICATE

Certificat - Certificado- Сертификат - Zertifikat - 证书

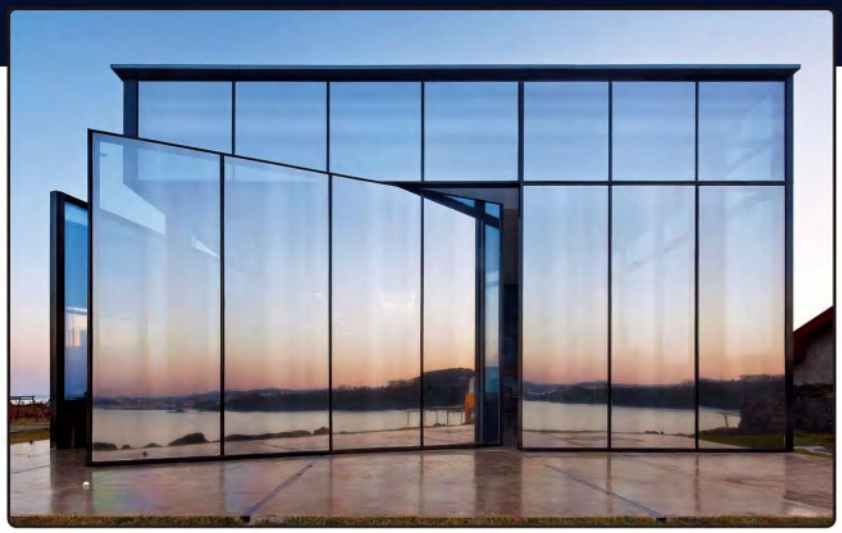
Australia Certificate

CE Certificate

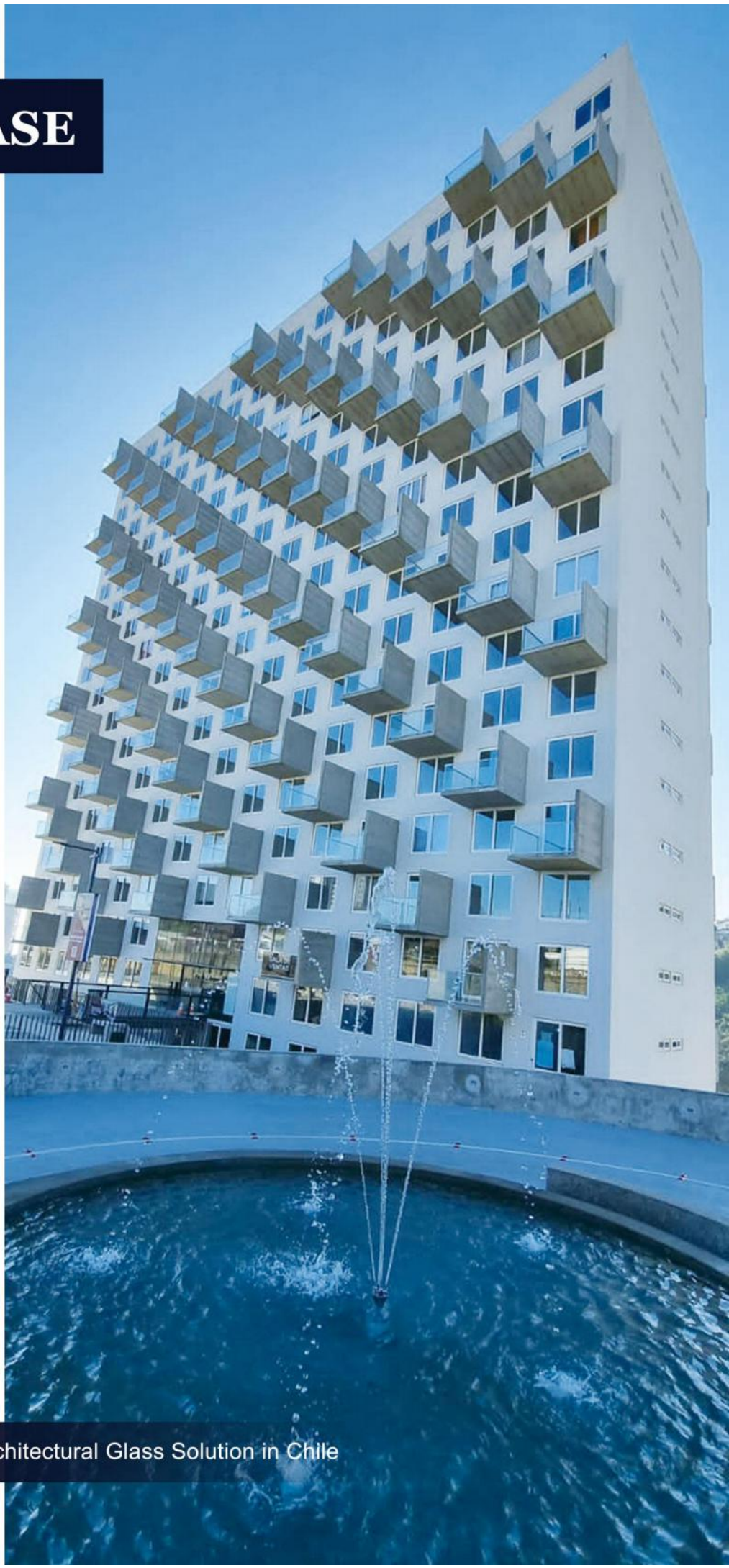
SGCC Certificate

CE Certificate

GLASS SOLUTION

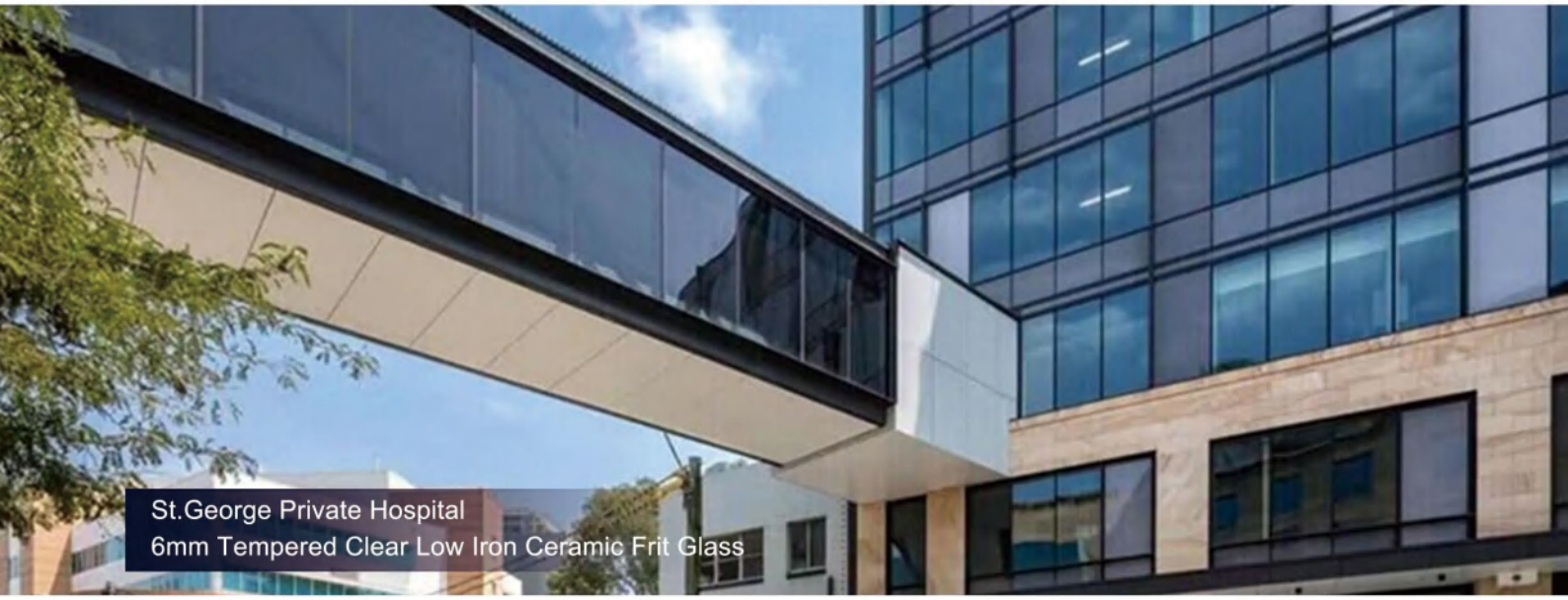


PROJECT CASE



Architectural Glass Solution in Chile

The Chile
Tempered Glass / Laminated Glass



St.George Private Hospital
6mm Tempered Clear Low Iron Ceramic Frit Glass

The Netherlands-Smoking Room
8mm Tempered Clear Glass / Laminated Glass

The Netherlands
Glass Bike Storage

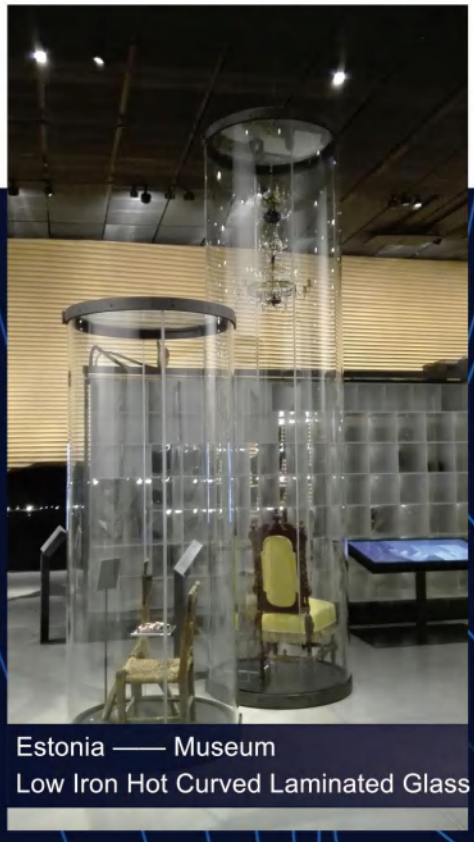
PROJECT CASE

Magaziin
Gray Laminated Glass

Australia
Tempered Curved Insulated Glass

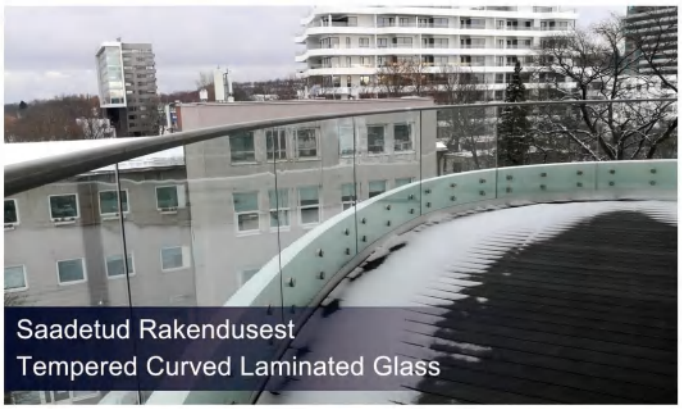
The Netherlands
Tempered Clear Laminated Glass

The United States
Stained Glass



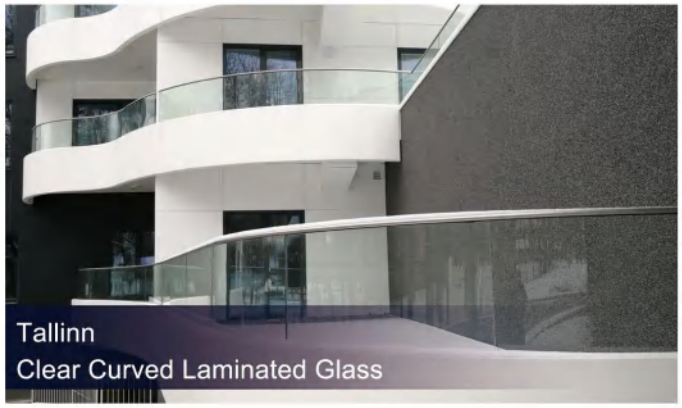
Estonia —— Museum
Low Iron Hot Curved Laminated Glass

Estonia —— Regional Hospital Entrance
Laminated Glass

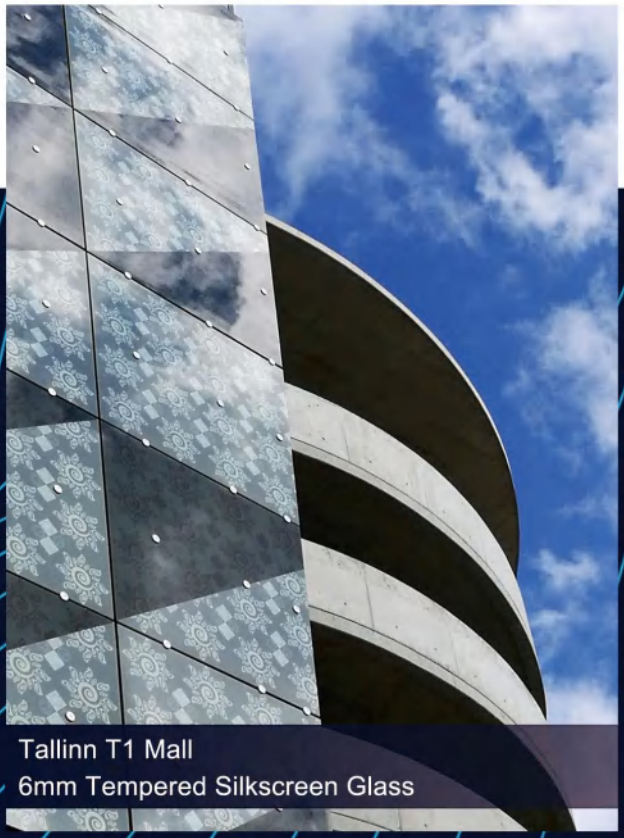


Saadetud Rakendusest
Tempered Curved Laminated Glass

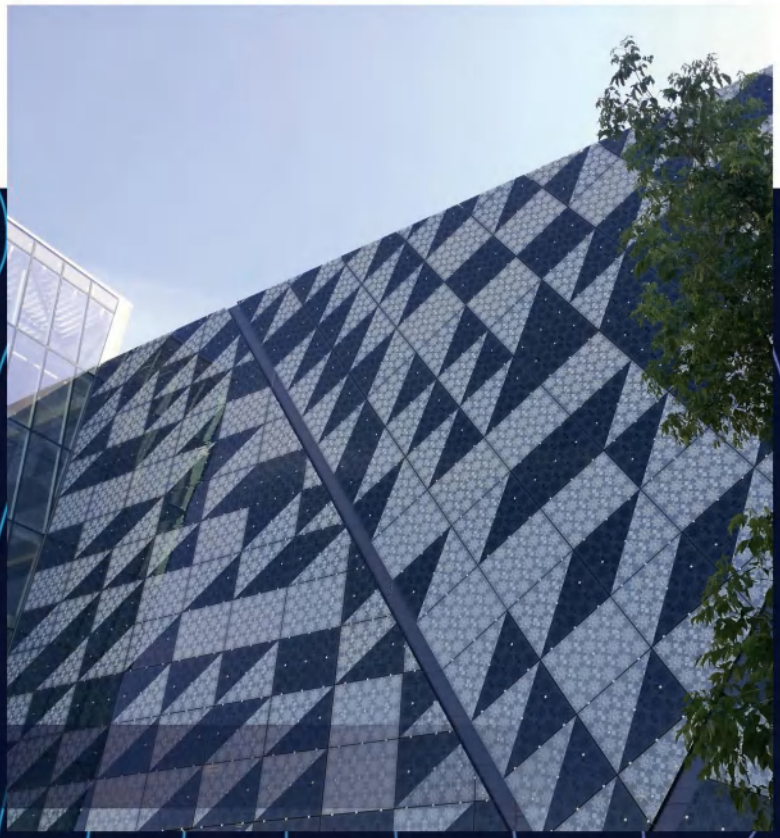
Tallinn
Clear Curved Laminated Glass



Tallinn
Clear Curved Laminated Glass

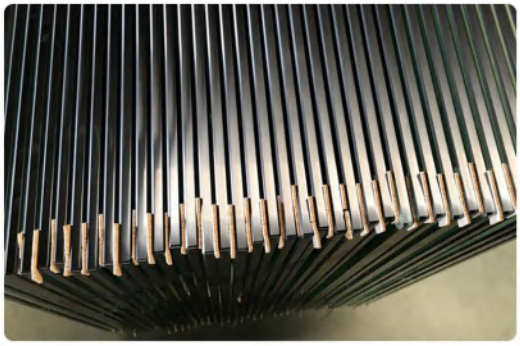


Tallinn T1 Mall
6mm Tempered Silkscreen Glass

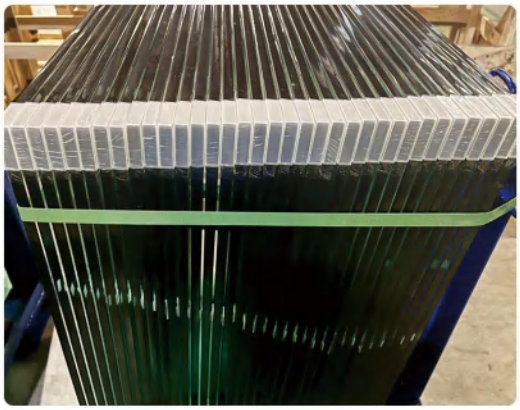


PACKAGE & LOADING

Paper



Cork



Corner Protectors

Single Packing

Fully Sealed Crate

Load by Forklift Truck Skewer

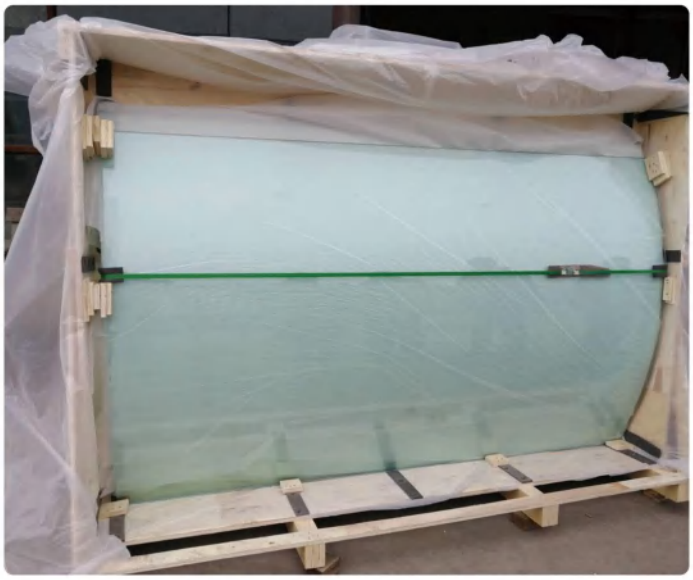
Load by Crane

Wooden Frame

A Frame

OT Container

Jumbo Size Loading



Curved Tempered Glass Loading

OT Container

Transport by Sea

Transport by Air

Transport by Train

Our Service

Glass Resource Integration Center

Professional Sales Team

Product Recommendation

Mixed Glass Loading

Experienced Shipping Suggestion

Secured After Sales Service

Hardware and Accessories

Our Technical Support

Glass Test

Glass Customization

Inter-layer Color Customization

Glass Coating Simulating

Glass Project Calculation

Glass Facade Design

Interior Decoration Design

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