



P **ARTNER GLASS**

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P **ARTNER GLASS**

PARTNER IMP.&EXP.CO.,LTD.



Qingdao Partner Import and Export Co., Ltd. is a professional glass trading company, located in the beautiful coastal city of Qingdao China. We are committed to providing a variety of high quality of building glass, sheet glass, pattern glass, Automotive glass, mirrors and solar photovoltaic glass products, etc..

Partner Glass joint venture 3 float glass production line, the production daily capacity of more than 800 tons. Which can provide all kinds thickness of float glass and tinted glass. We have deep cooperation in the deep processing of glass factories.,which can process tempered glass, laminated glass and mirror all glass deep-processing products.

The products we can provide are: clear float glass, low Iron glass, tinted float glass, tinted reflective glass, low-emissivity glass, laminated glass, temper glass, lacquered glass and acid etched glass, sliver mirror, aluminum mirror, copper free and lead free mirror, clear patterned glass, colored patterned glass, wired glass and so on.

In addition, we have long-term cooperation of shipping companies and logistics companies. And we own ourself container truck fleet,which near with China three largest ports : Qingdao, Tianjin, Dalian. It can satisfy faster, safer and more convenient shipment.

After years of development, we have exported to more than and 50 countries and regions,

we have a wealth of sales experience and sales team. We will do our best to improve our service and communication with our customers in the long term business relationship.

Customer first, service first, is our principle of Partner import and Export Co., Ltd.. We welcome your inquiry and look forward to working with you.

شركة بارتنز للزجاج المحدودة، هي شركة تجارية متخصصة في صناعة و تصدير كل أنواع زجاج
البنائيات، يقع مقر الشركة في مدينة تشينغداو الساحلية الجميلة في شمال الصين. نحن ملتزمون بتوفير
مجموعة متنوعة من الزجاج: الزجاج الشفاف، الزجاج العاكس، الزجاج المقسى و زجاج الديكور الداخلي،
زجاج السيارات، المرايا، منتجات زجاج الألواح الشمسية ، إلخ

نتوفر على ثلاثة خطوط لإنتاج الزجاج المصقول، بقدرة إنتاج يومية تفوق 800 طن. والتي تمكننا من
الحصول على جميع أنواع السمك للزجاج الشفاف و الزجاج الملون. لدينا شركات طويلة مع مصانع
الزجاج المعالج.المنتجات التي يمكن أن نوفرها لزبائننا الكرام هي: الزجاج المصقول الشفاف، الزجاج
عالي الوضوح، الزجاج الملون، الزجاج العاكس الملون، و الزجاج مُحَقَّض للانبعاث، و الزجاج
الرقائقي، الزجاج المزخرف، و الزجاج المطلي بالحمض و الزجاج المحفور الحامضي، مرايا الألمنيوم و
النحاس الخالي من الرصاص، الزجاج منقوش الشفاف و الملون، و الزجاج المسلح الى اخره.بالإضافة
إلى ذلك ، لدينا تعامل كبير مع شركات الشحن والخدمات اللوجستية، تمتلك أسطول شاحنات و حاويات
الى مخازن بالقرب من أكبر ثلاثة موانئ بشمال الصين: تشينغداو وتيانجين وداليان، يمكن أن نفي بشحن
أسرع وأكثر أمانا و بأسعار ملائمة

بعد سنوات من التطوير و العمل المتواصل، قمنا بتصدير الزجاج إلى أكثر من 50 دولة ومنطقة،نتوفر على
فريق مبيعات بخبرة طويلة في هذا المجال، قادر على تلبية جميع طلبات عملائنا و بناء شركات و علاقات
تجارية طويلة الأجل معهم.مبدأ شركة بارتنز للزجاج هو الزبون و الخدمات المقدمة أولا. نرحب بالجميع ونتطلع

إلى التعامل معكم في القريب العاجل



Clear Float Glass

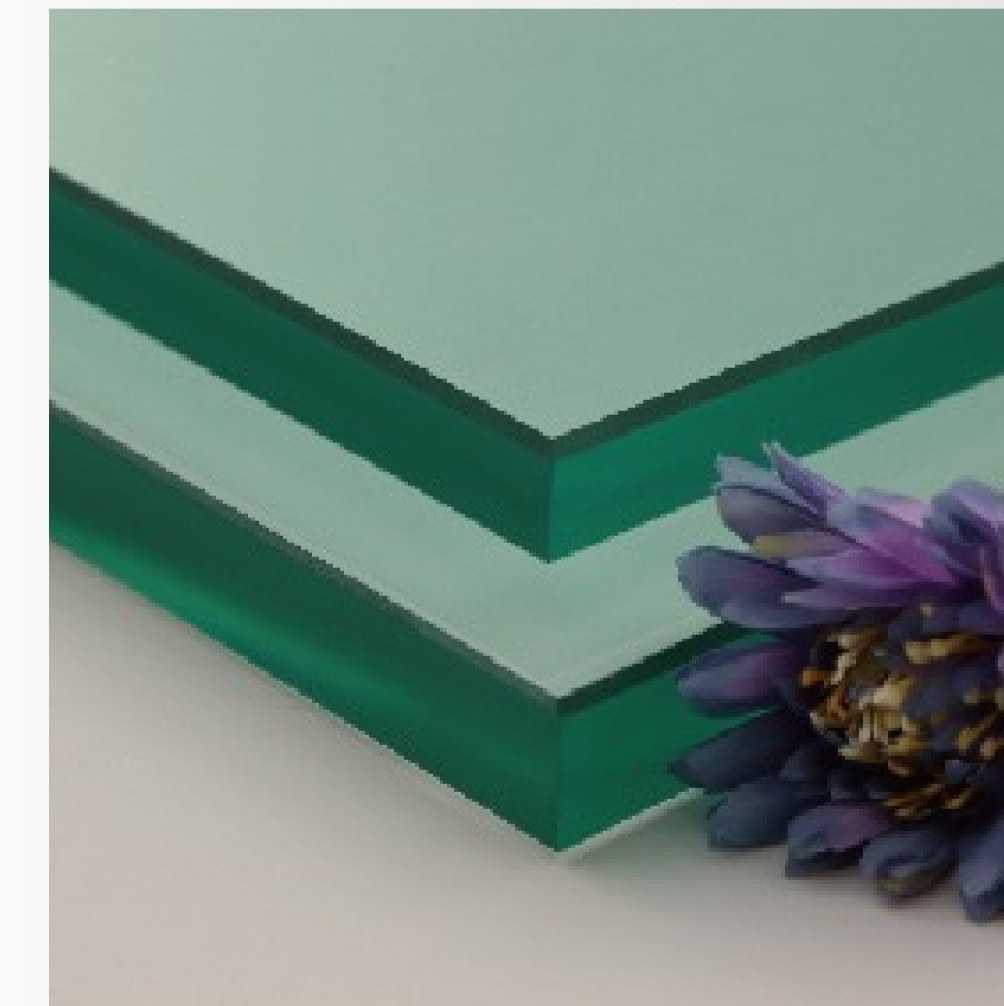
Clear float glass is manufactured by the most advanced technology. Partner is making sure that the highly automated production process is being utilized to its maximum extent to meet the requirements of its customers.

CHARACTERISTICS

Excellent light transmittance, magnificent optical performance and stable chemical properties.

Easy to be cut, bent, insulated, tempered, coated and laminated. Resistant to acid, alkaline and corrosion.

Excellent surface finishing, flatness, uniform thickness, high optical quality and bright appearance.



PRODUCTION CAPACITY

Thickness: 2mm - 19mm

Size: 1830x1220mm, 2134x1524mm, 2440x1830mm, 3050x2134mm, 3300x2134mm, 3660x2134mm, 3300x2250mm or produce according to customer's requirement.

Capacity: 3 Lines and 35x 20'FCL / Day / Line

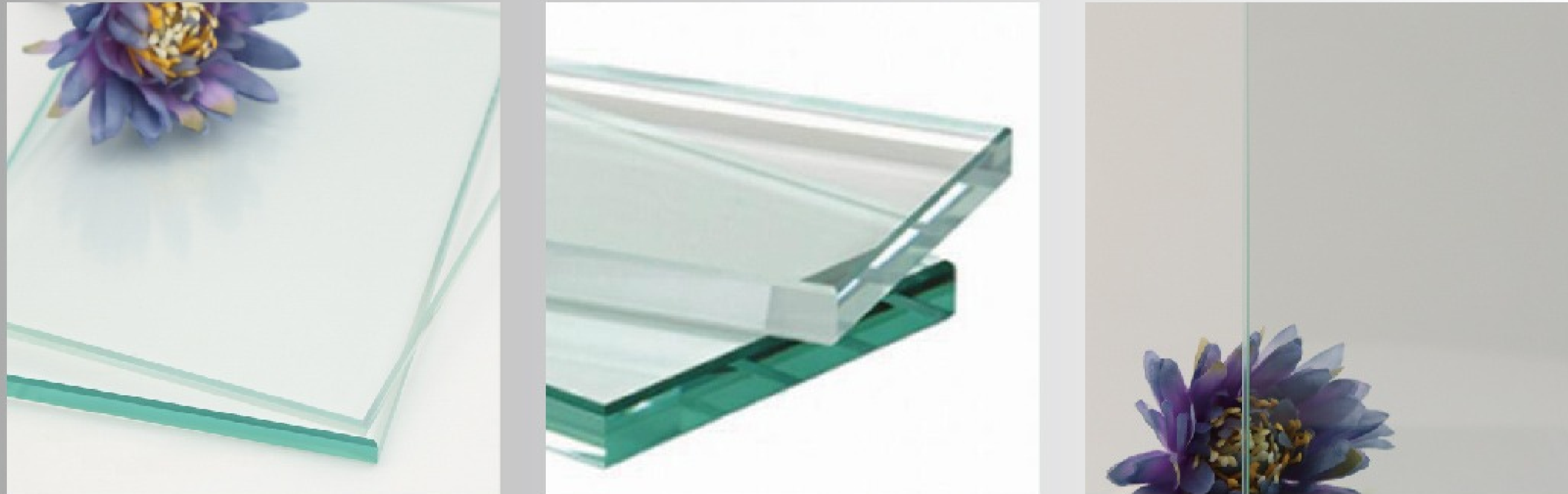
APPLICATION

Reflective Glass
Automotive Glass
Coated Glass
Windows
Mirrors
Table Tops
Insulated Glass

Ultra Clear Float Glass

Ultra Clear Float Glass, also called Low Iron Float Glass, Extra Clear Float Glass or High Transmittance Float Glass, is a kind of transparent float glass which is manufactured via high-tech method by removing a large proportion of the glass iron content. The green tinge which usually associates with ordinary clear float glass (particularly noticeable on the edges) is removed. Therefore, it shows a magnificent appearance as crystal. And it can be curved, drillholed, edged, tempered, hot bending, and also can be carried on coating, glazing and doping in the surface to other special products.

Ultra Clear Float Glass has infinite application value and prospect in many areas such as construction decoration, industry manufacture, artware creation and so on. For example, building curtain wall, building decorate, glass show counter in quality market, exhibition hall, museum, aquarium, art gallery and modern art work. But it has more usual value in the industry manufacture area, such as solar energy part, IT product, household appliance, modern furniture and instrument and so on.



CHARACTERISTICS

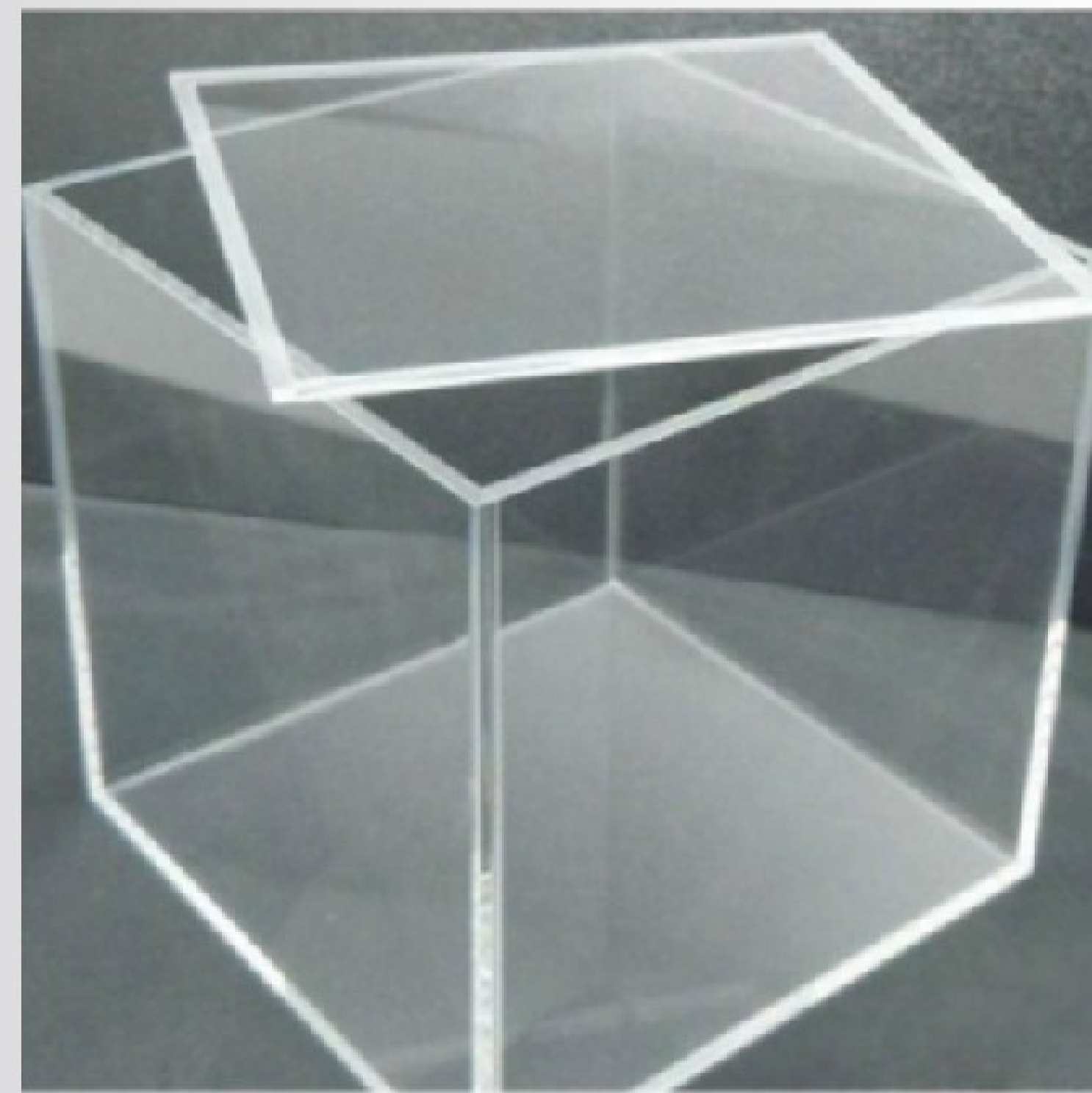
1. Easy to be tempered, bent, cut, insulated or laminated.
2. Provides high transmittance and displays true color.
3. Eliminates color distortion apparent in ordinary clear float glass.
4. Enhanced external viewing of architectures.
5. Avoids the "greening" inherent in ordinary clear float glass.

APPLICATION

1. Architectural Curtain Wall and Decoration.
2. Display Window and Show Counter.
3. Modern Art Work, Furnitures and Instruments.
4. Solar Energy Industries.
- etc.

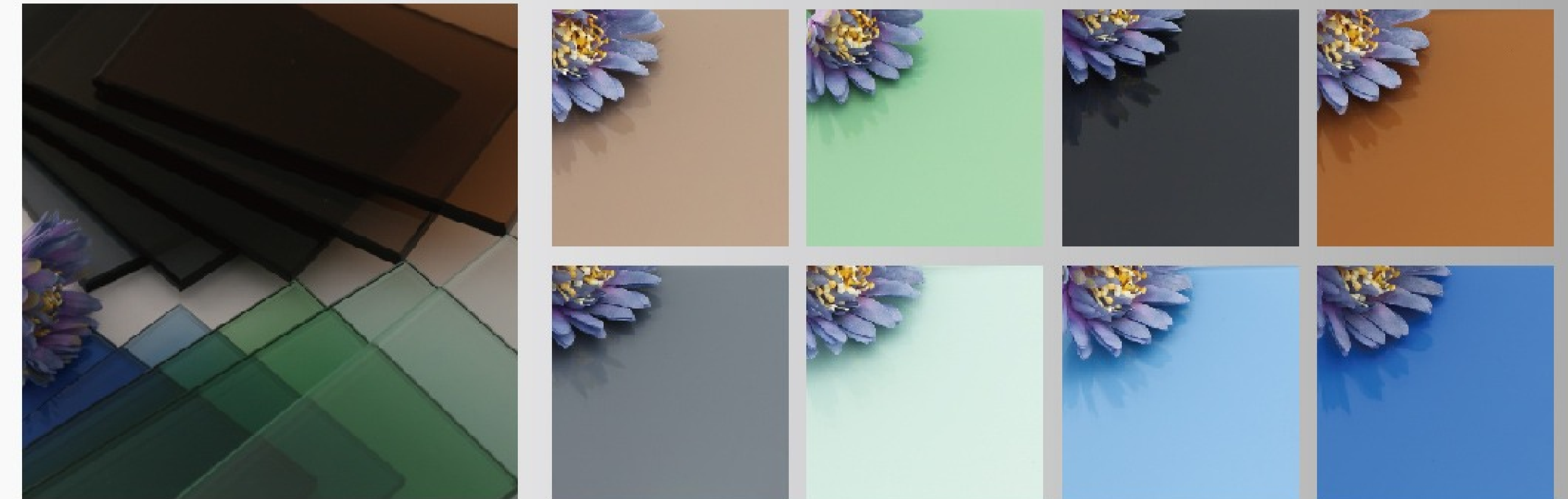
PRODUCTION CAPACITY

Thickness: 3mm - 25mm
 Size: 1830x1220mm, 2134x1524mm, , 2440x1830mm, 3300x2134mm, 3660x2134mm, 3300x2250mm or produce according to customer's requirement.
 Capacity: 30 x 25'FCL / Day / Line



Tinted Glass

Tinted Float Glass high heat insulation rate also reduces the need for air conditioning use and lower energy costs in homes and businesses alike. Visible light transmittance is also lower than clear float glass, reducing obtrusive glare and creating a more comfortable atmosphere in buildings. Tinted float glass is produced by adding colourant during a clear float production run.



CHARACTERISTICS

- Higher solar heat radiation absorption.
- Post-production treatment possibilities.
- Reduced transmission of solar heat radiation.
- High creative value due to color variety.

PRODUCTION CAPACITY

Thickness: 2mm - 12mm
 Size: 1830x1220mm, 2134x1524mm, 2440x1830mm, 3050x2134mm, 3300x2134mm, 3660x2134mm, 3300x2250mm or produce according to customer's requirement.
 Capacity: 2 Lines and 35x 20'FCL / Day / Line

APPLICATION

Automotive Glass Laminated Glass Windows Mirrors Furnitures Insulated Glass



Reflective Glass

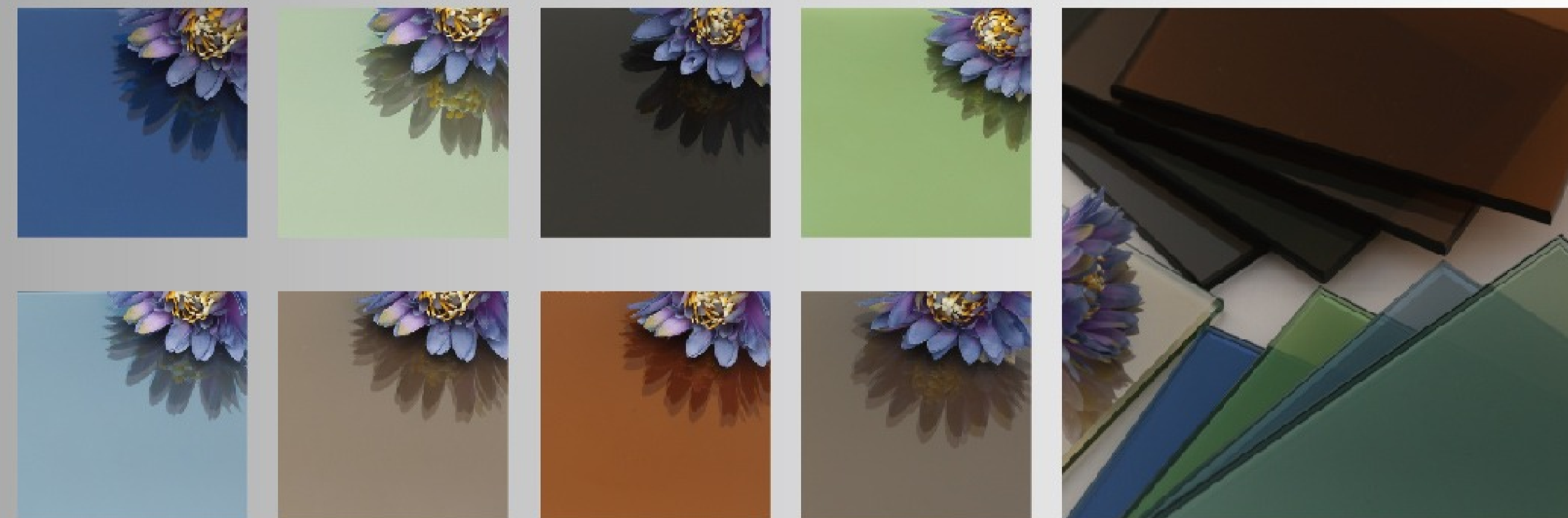
Reflective Glass, also named Partner On-line Hard-coated Float Glass, is reflective solar control glass manufactured by the "pyrolytic coating process" which basically means that when manufacturing float glass metal oxides are applied to the surface of glass at about 1200 C by pyrolytic deposition. The coating provides a mirror effect to the glass surface and can be applied to clear and tinted float glass. The hard coat is chemically and mechanically durable, which provides resistance to scratches and damages over time. In addition to its durable life, we reflective glass can be post heat-treated for strengthening, tempering and bending purposes and easily cut, insulated or laminated.

CHARACTERISTICS

1. Effective solar control by blocking far infrared radiation for saving cooling costs in summer and heating expenses in winter.
2. Easy to be tempered, bent, cut, insulated or laminated.
3. Avoid light pollution and build comfortable ecological environment.
4. Chemical and mechanical durability provides resistance to scratches and damages over time.

APPLICATION

1. Architectural Facades
2. Laminated Safety Glass
3. Residential Insulating Glass Units etc.



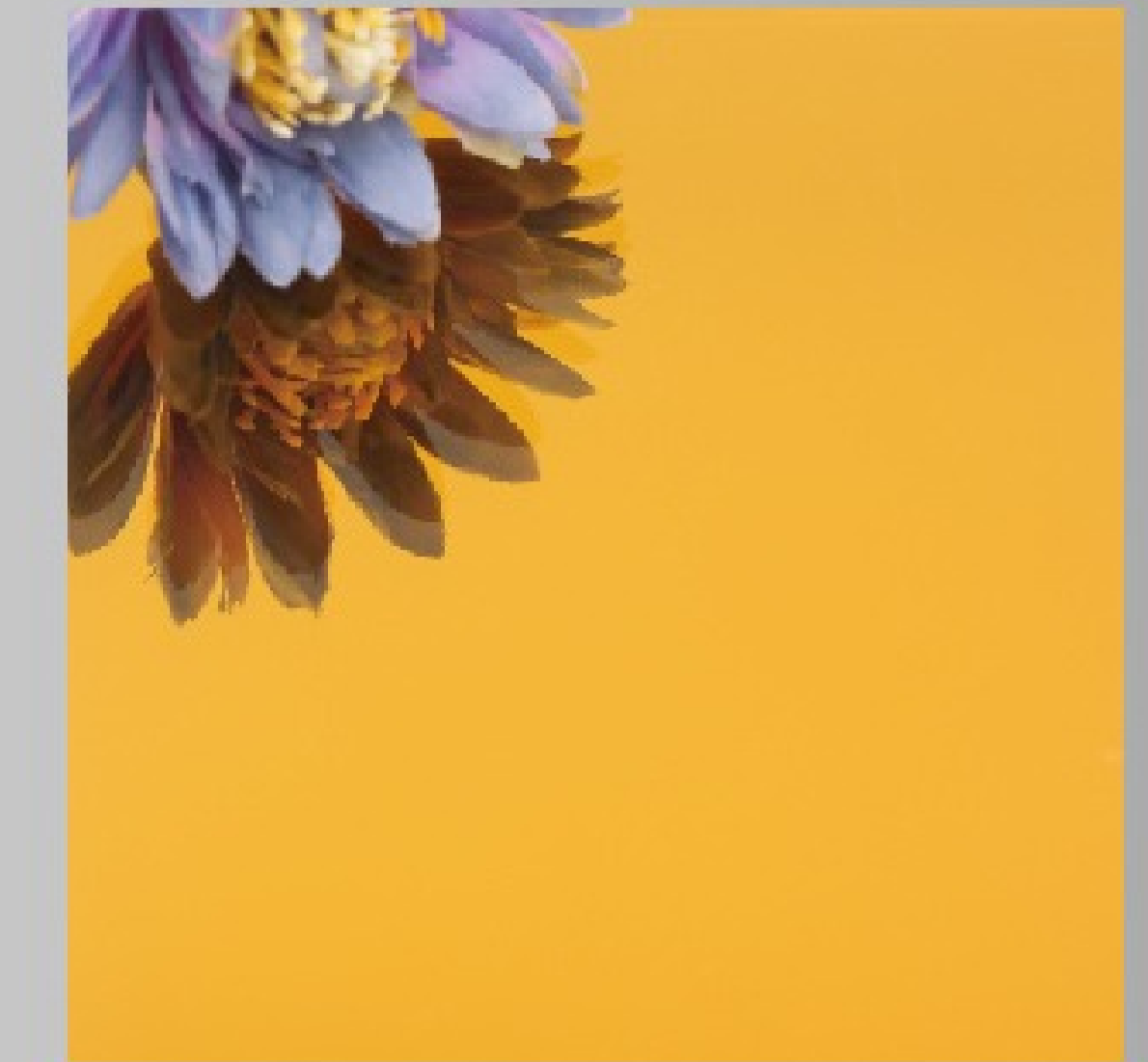
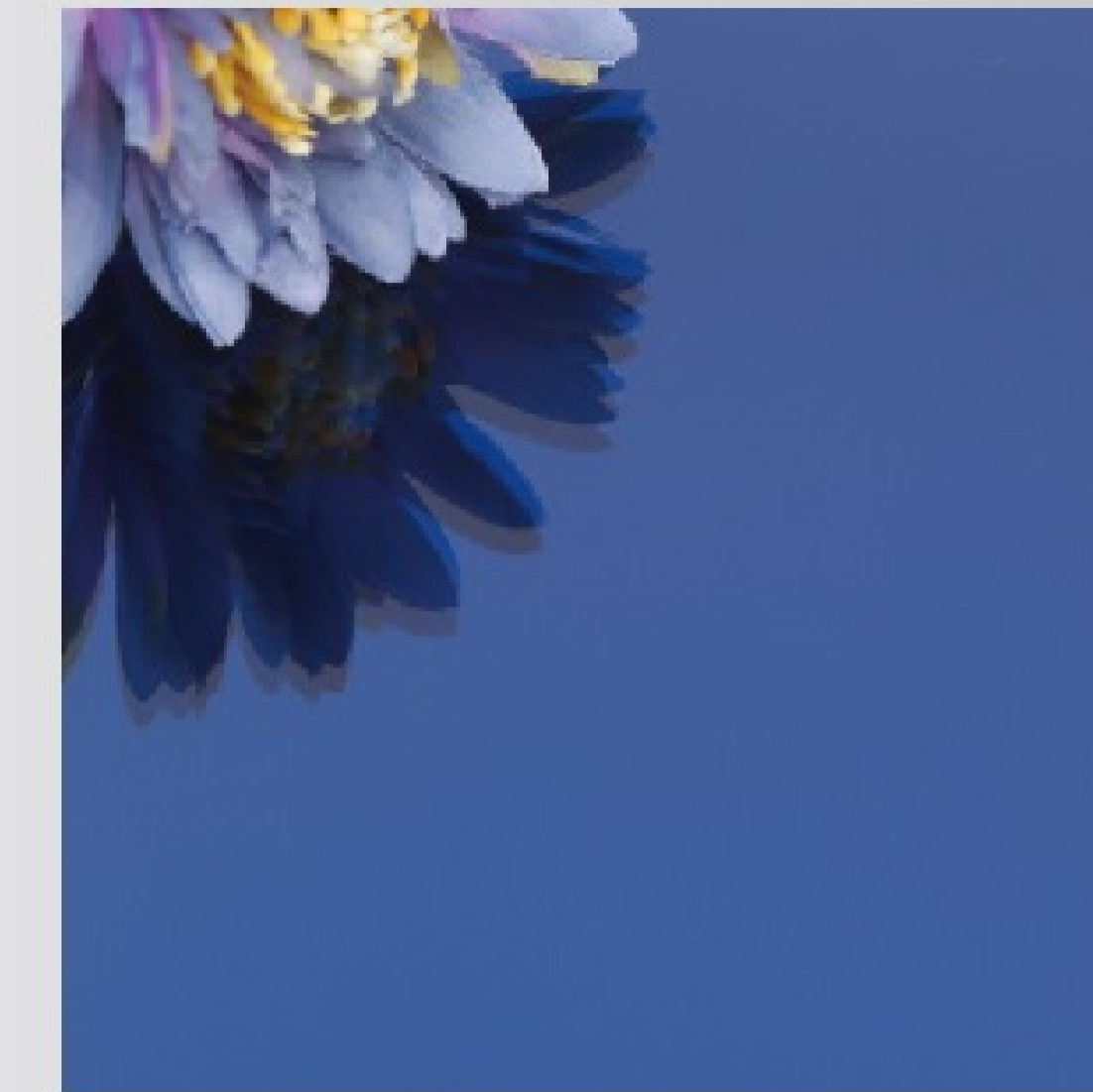
PRODUCTION CAPACITY

Color: French Green , Dark Green, Euro Bronze, Golden Bronze , Euro Grey , Mist Grey, Dark Grey, Ocean Blue, Light Blue/Ford Blue/Lake Blue, Dark Blue, Pink, and so on.

Thickness: 3mm - 12mm

Size: 1830x1220mm, 2134x1524mm, , 2440x1830mm, 3050x2134mm, 3300x2134mm, 3660x2134mm, 3300x2250mm or produce according to customer's requirement.

Capacity: 30 x 20'FCL / Day / Line

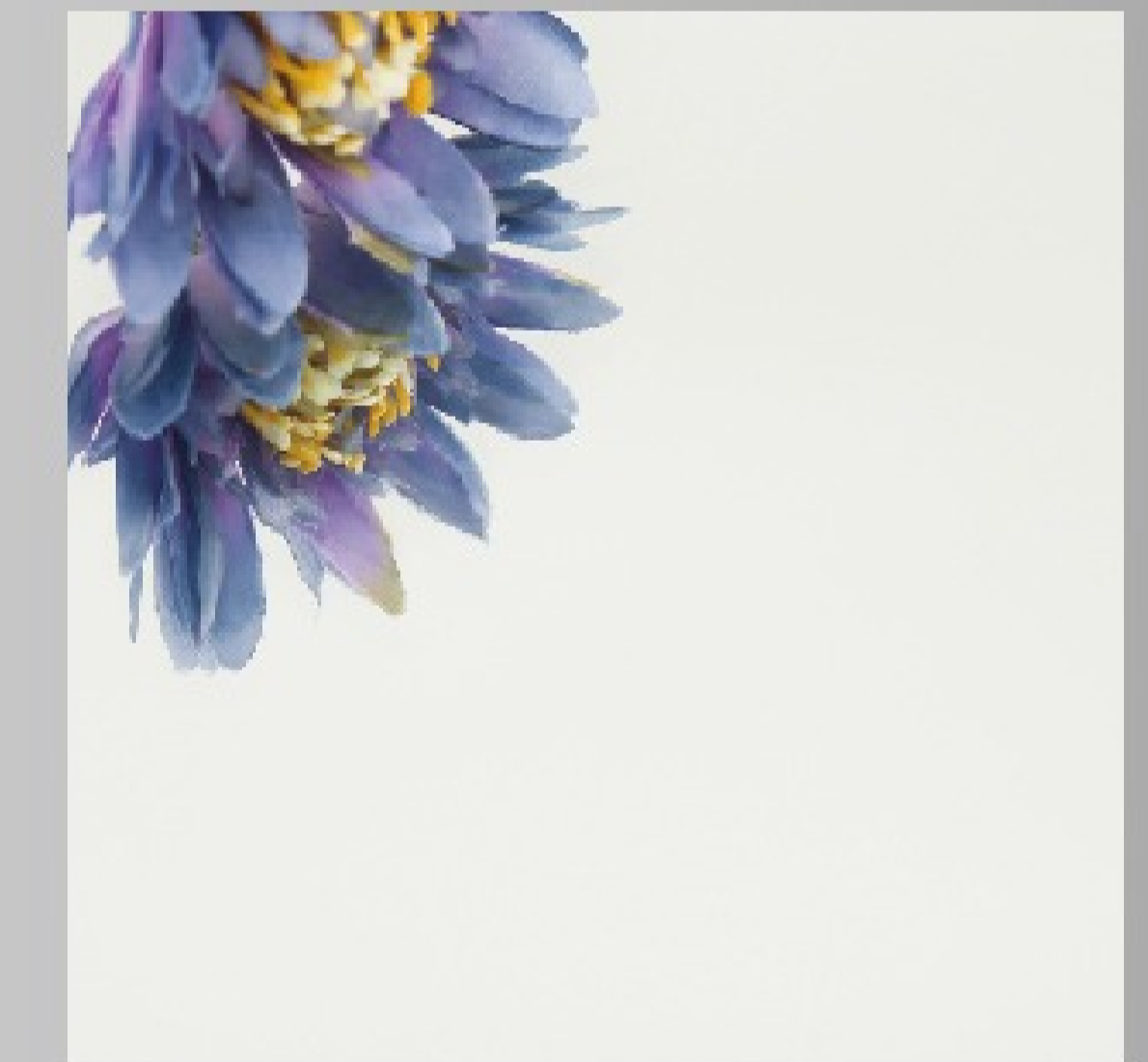
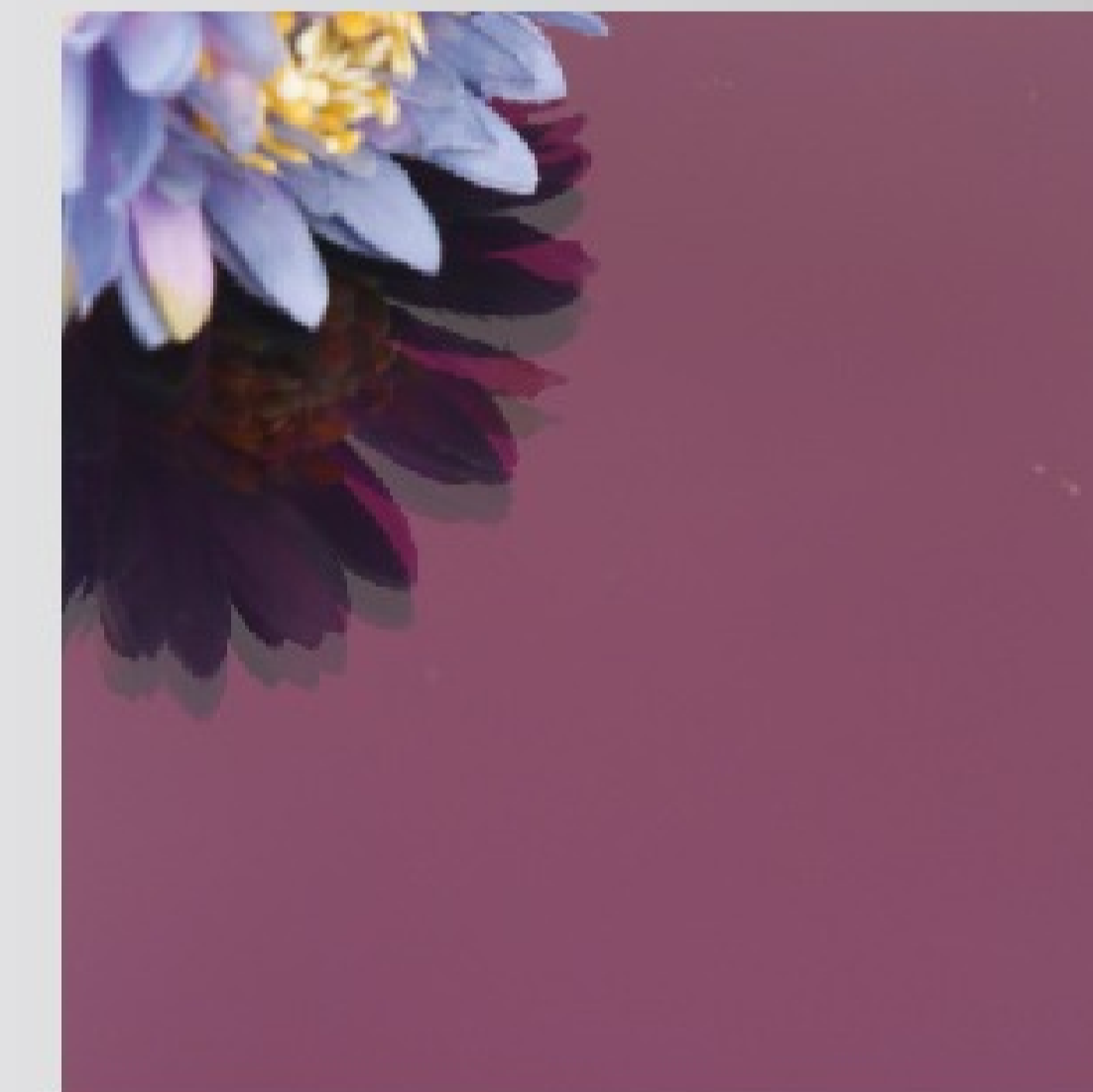


Silver Mirror

Silver mirror is produced through a trinal process by coating one silver film, one copper film, and two layers of water-proof paints on glass surface.

PRODUCTION TECHNOLOGY AND PROCESS

pre-wash->polishing-> cleaning-> sensitization->activation-> plated silver ->plated copper->first baking->sprinkle the priming paint-> dry the primer-> sprinkle finishing paint->paint drying -> paint curing and cooling -> cleaning the mirror-> inspection-> packing



STANDARD AND PARAMETER

- Per squaremeter, Silver Layer > 700 mg
- Per squaremeter, Copper Layer > 200 mg
- Priming paint≥ 25um
- Double paint≥ 45 um

PRODUCT CAPACITY

Thickness: 2mm - 6mm
 Size: 1220x1830mm, 1524x2134mm, , 1830x2440mm, 2134x3050mm, 2134x3300mm, 2134x3660mm, 2250x3300mm or produce according to customer's requirement.

APPLICATION

- Secondary Deep-Process Mirror
- Bathrooms, Toilets, Halls.
- Mirrored walls to create more light or space.
- Furniture backs, shelves, table tops
- Facial looking glass
- Decorative applications etc.



Sheet Glass

Sheet Glass The surface of the glass is smooth and flat. It is mainly applied in the field of construction and decoration such as photos frame and door & windows. As the technology more and more mature, the glass is not only excellent product and cheaper price, but also durable in use. The sheet glass has great market competition advantages.

FEATURES:

- 1) High light transmittance, excellent optical performance.
- 2) Smooth and flat surface, visible flaw is controlled strictly
- 3) Easily to be cut, insulated, tempered and coated.

SPECIFICATION:

Thickness: 1.3mm, 1.5mm 1.8mm 2mm 2.2mm 2.7mm 3mm etc.
 Sizes: 1220x912mm, 1524x2134mm, 1830x1220mm etc. Cutted sizes are also available.



Sheet Glass Mirror

Sheet glass mirror is produced through a double process by coating one aluminium film and two layers of waterproof paints on glass surface.

PRODUCTION TECHNOLOGY AND PROCESS

pre-wash-> cleaning-> air drying-> plated aluminum ->sprinkle the priming paint-> heat the primer-> sprinkle finishing paint ->heat finishing paint -> paint curing and cooling -> cleaning the mirror->air drying->inspection->packing

STANDARD AND PARAMETER

Thickness of Aluminum layer:200~300A
 Thickness of single painted≥ 30 um
 Thickness of double painted≥ 45um
 Wipe the back of mirror for 150 times, don't appear priming paint.

PRODUCTION CAPACITY

Thickness: 1.5mm, 1.8mm, 2mm
 Size: 1220x912mm, 1524x2134mm, 1830x1220mm or produce according to customer's requirement.

APPLICATION

Bathrooms, Halls.
 Mirrored walls to create more light or space.
 Furniture backs, shelves, table tops

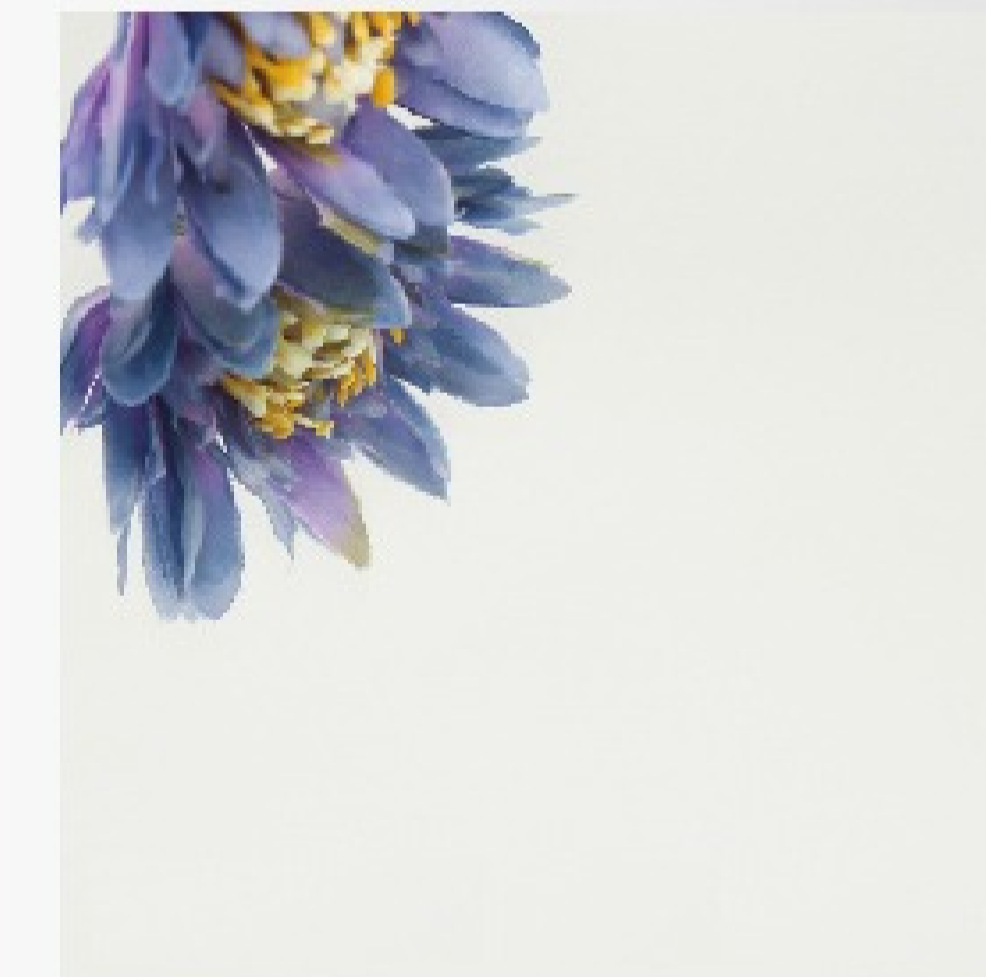


Copper And Lead Free Mirror

Mirror is manufactured by modern technological equipment line and has exceptional quality and durability. As a result of many years experience of production and sales, now we has a complete range of mirror, including Silver Mirror, Aluminum Mirror, Copper and Lead Free Mirror, Safety Mirror

PRODUCTION TECHNOLOGY AND PROCESS

pre-wash->polishing-> cleaning-> sensitization->activation-> plated silver ->plated copper->first baking->sprinkle the priming paint-> dry the primer-> sprinkle finishing paint->paint drying -> paint curing and cooling -> cleaning the mirror-> inspection-> packin



STANDARD AND PARAMETER

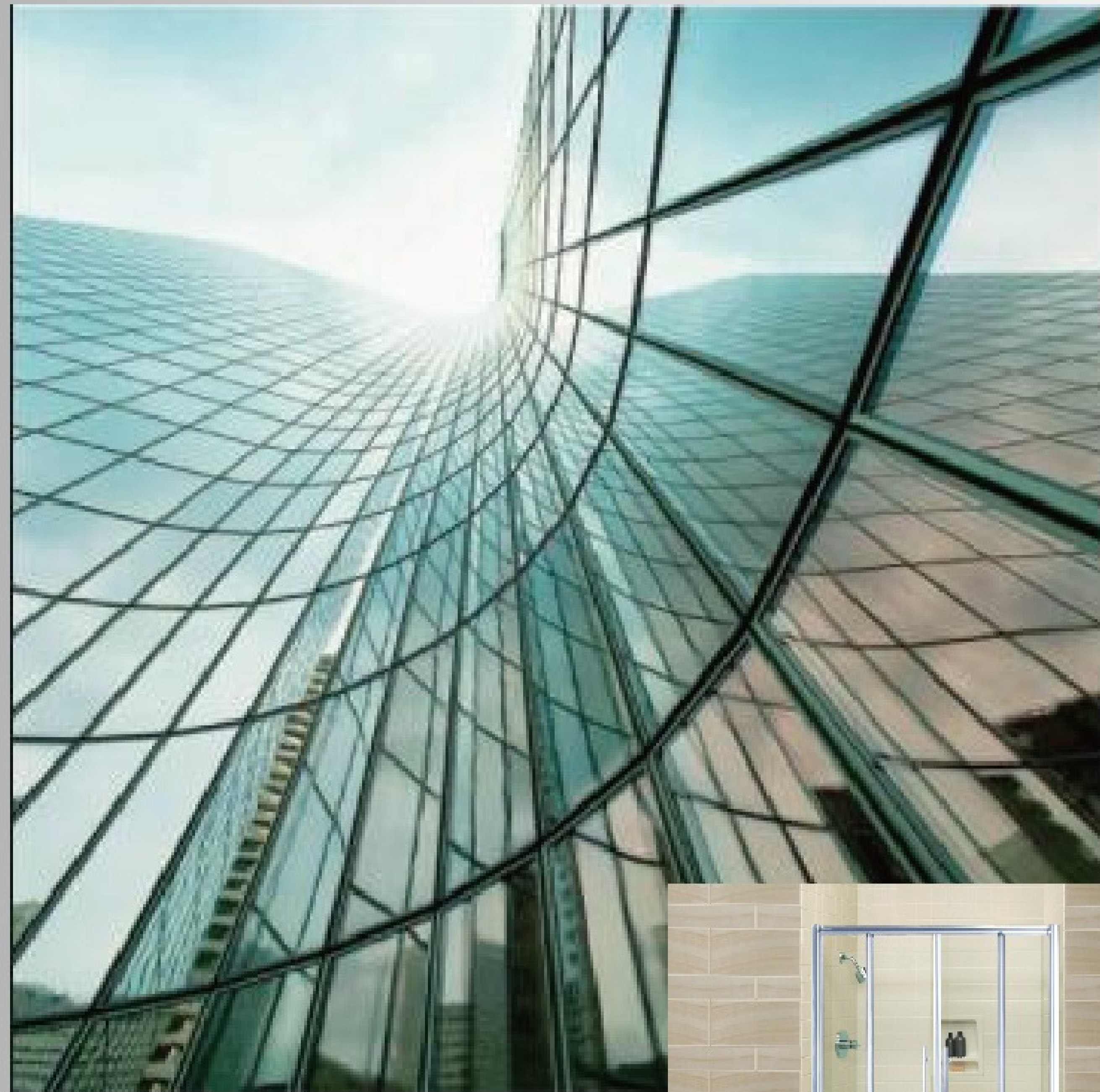
Per squaremeter, Silver Layer > 700 mg
 Per squaremeter, Copper Layer > 200 mg
 Priming paint≥ 25um
 Double paint≥ 45 um

PRODUCTION CAPACITY

Thickness: 2mm - 6mm
 Size: 1220x1830mm, 1524x2134mm, , 1830x2440mm, 2134x3050mm, 2134x3300mm, 2134x3660mm, 2250x3300mm or produce according to customer's requirement.

APPLICATION

Secondary Deep-Process Mirror
 Bathrooms, Toilets, Halls.
 Mirrored walls to create more light or space.
 Furniture backs, shelves, table tops



Tempered Glass

Tempered glass is made by heating flat glass to approach its softening temperature and then suddenly chilling with jets of cold air in order to change the mechanical intensity and stability.

CHARACTERISTICS

- 1. Approximately five times stronger than annealed glass of equal thickness.
- 2. Greater resistance to thermally-induced stress than heat-strengthened or annealed glass.
- 3. Disintegrate into small blunt pieces when breakage occurs, which offer great safety.

ADVANTAGE OF TEMPERED GLASS

- 1. We can provide Tempered Glass in thickness 2mm to 19mm.
- 2. Our Tempered Glass with Nice and Fine Edge Polishing and Hinge Cutting.
- 3. Professional Machines for Deep- Processing.



Hot Bending Glass

Bent glass is softened by heating flat glass, molded in a mold, and after annealed, the curved glass will be made. Bending glass can be made into a variety of curved glass.

CHARACTERISTICS

- 1, Hot-bending glass products have diverse styles;
- 2, Compare to Tempered Glass, Hot-Bending Glass has smooth surface, no distortion phenomenon;
- 3, Hot-Bending glass can be cut again, digged hole and other processing;

APPLICATION

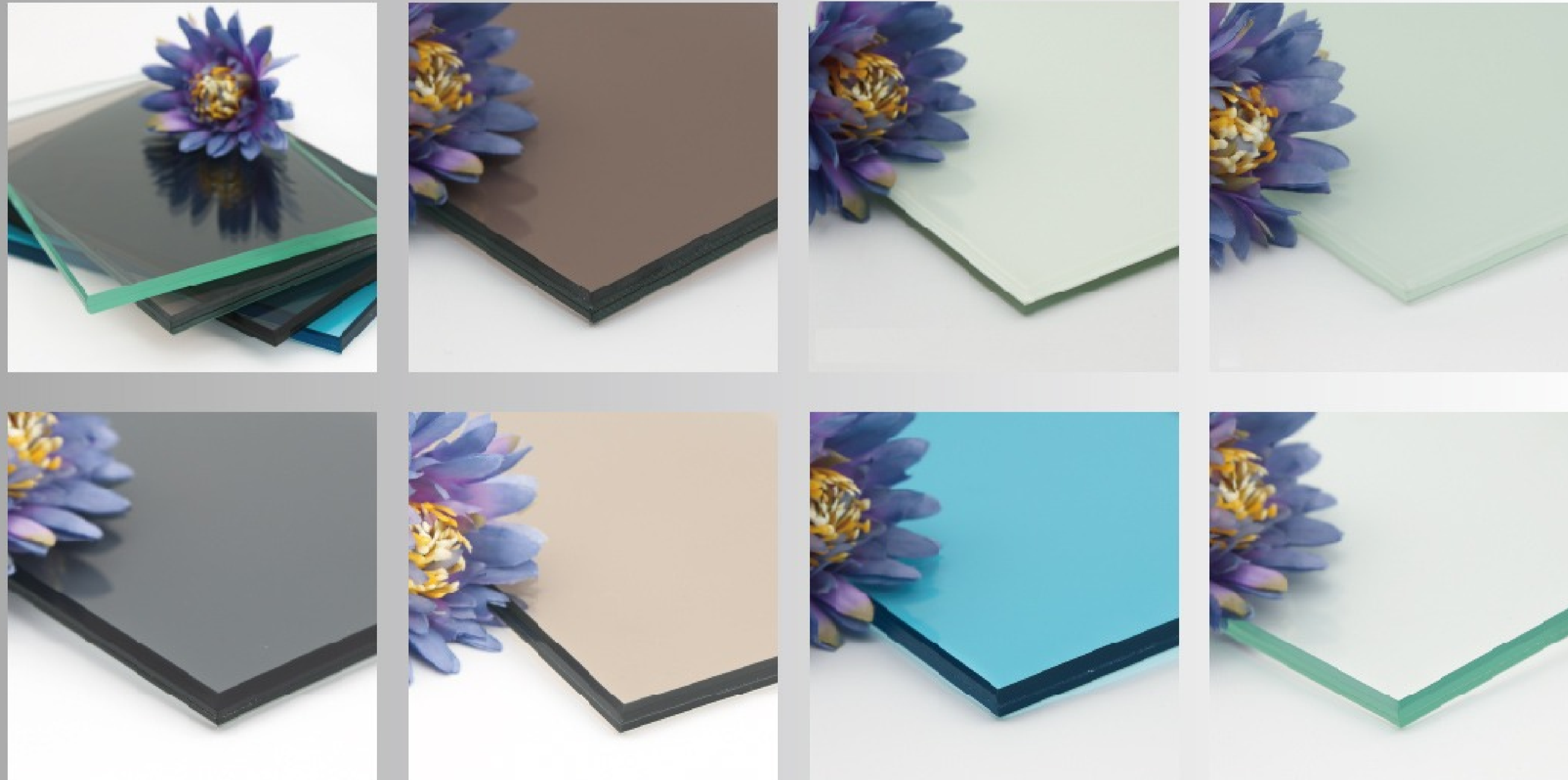
Tempered Glass and Hot-Bending Glass can be produced with other deep-processing treatment (such as Acid Etched, Cutting, Polishing, Silk- Screen, Lamiated, hot-bending etc) for Tea Table, Shower Box, Counter, Viewing Window etc.

BENDING TEMPERED GLASS

Bending Tempered Glass or bending heat strengthened glass is made of float glass which is firstly heated to softening point and then bent to shape and finally cooled down rapidly by special facility.

APPLICATION

Bending glass is mostly applied to curtain wall with curve structure, skylight, sightseeing elevator, indoor decoration and furniture etc.



Laminated Glass

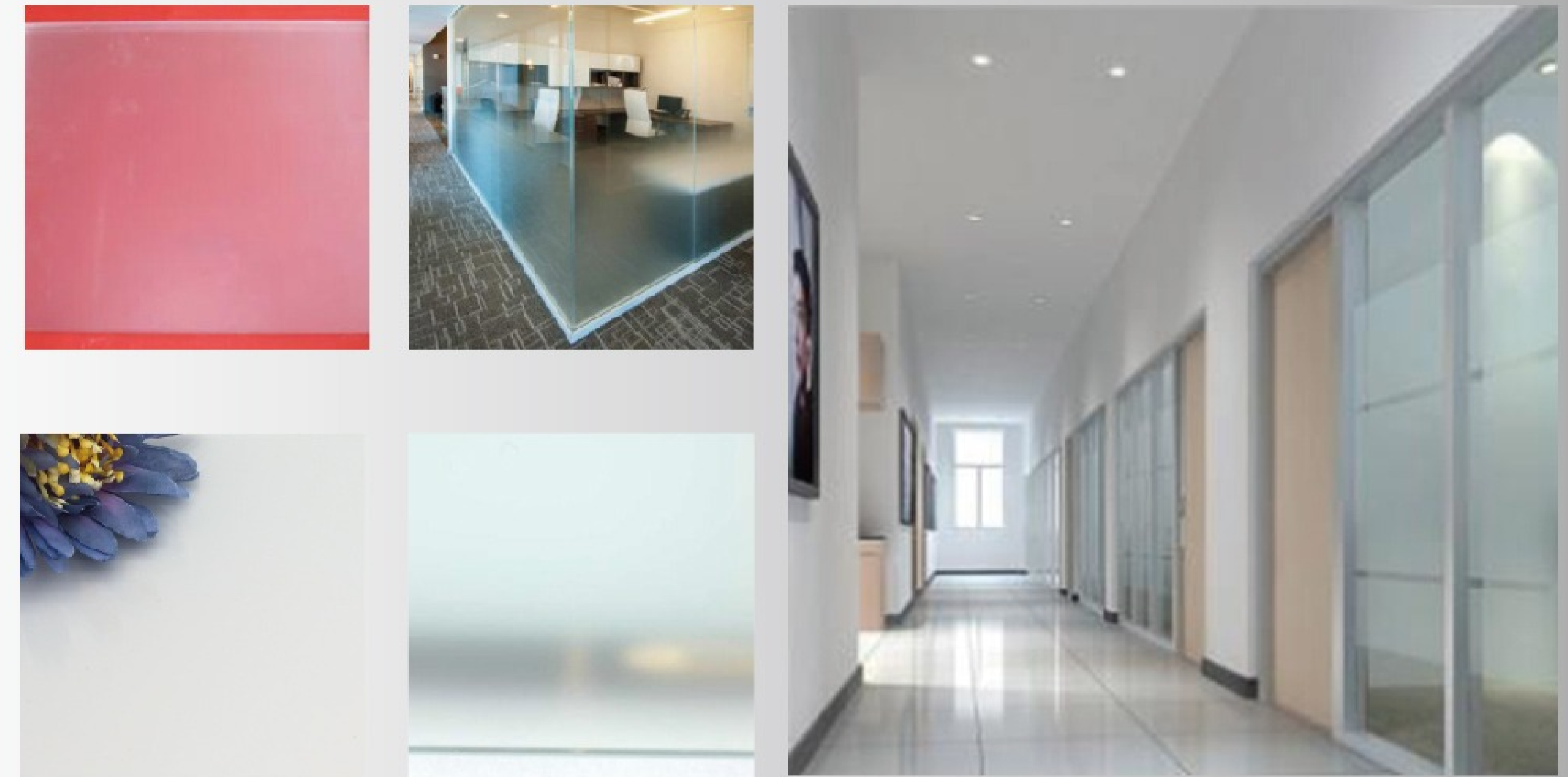
Laminated glass is a kind of safety glass. It is laminated with Polyvinyl Butyral (PVB) film between two glass sheets or among multiple glass sheets by special equipment, then preheated and prepressed before entering the autoclave for permanent heat pressing and forming.

FEATURES

1. Security: Strong and can withstand more impact. Even laminated glass broken, the fragments will keep sticking on the interlayer and won't scatter.
2. Energy saving: It is a good material at heat insulating, which can reduce the energy consumption.
3. Sound insulating: With a good damping function for sound wave, laminated glass is a favorable sound insulating material.
4. U.V. filtering: The interlayers can filter out ultraviolet rays in order to prevent the indoor objects such as furniture fading.

APPLICATION

1. Glass Curtain Wall
 2. Building Ceiling
 3. Skylight Window
- etc.



Acid Etched Glass

Acid etched glass is produced by acid etching the glass to form various patterns on surface or back of the glass. This product adopts automobile level float glass as raw material, we introduce overseas high accuracy printing equipment, after the silk-screen printing, then waterborne matte treatment processing, the company independent R&D many patterns, many style flower, facilitate the overseas friends to select and purchase. The product passes through the retreatment in the translucent glass's foundation, which makes the glass more attractive, more suitable to household choice.

FEATURES

1. Scratch proof and moisture proof
2. Tangible stereoscopic pattern will never fade
3. customized size and pattern
4. Rich and colorful pattern design
5. no smell such as formaldehyde and nitrogen
6. perfect matching with other designs in the house

PRODUCT CAPACITY

Thickness: 3mm - 19mm

Color: Clear, Bronze, F. Green, Blue, Grey etc

APPLICATION

For domestic and commercial decoration

1. Decorative door
2. Window glass
3. Partition glass
4. Furniture glass
5. Shower room glass
6. Wall glass
7. Office



Lacqueted Glass

Lacqueted Glass, which is also named lacquered glass, paint glass etc, is made by painting different color of enamel on the clear glass or ultra clear glass surface by roller printing machine. The painted surface is smooth and easy cleaning. Our paint including priming paint, finishing paint and paint accelerants is imported from Fenzi Paint Italy.

PRODUCTION PROCESSING

pre-wash->cleaning->spraying paint accelerant -> air drying -> first baking-> sprinkle the paint (various color)-> second baking-> sprinkle finishing paint->paint drying -> paint curing and cooling -> cleaning again -> inspection -> packing

PRODUCTION CAPACITY

Glass Color: Clear, Ultra Clear.

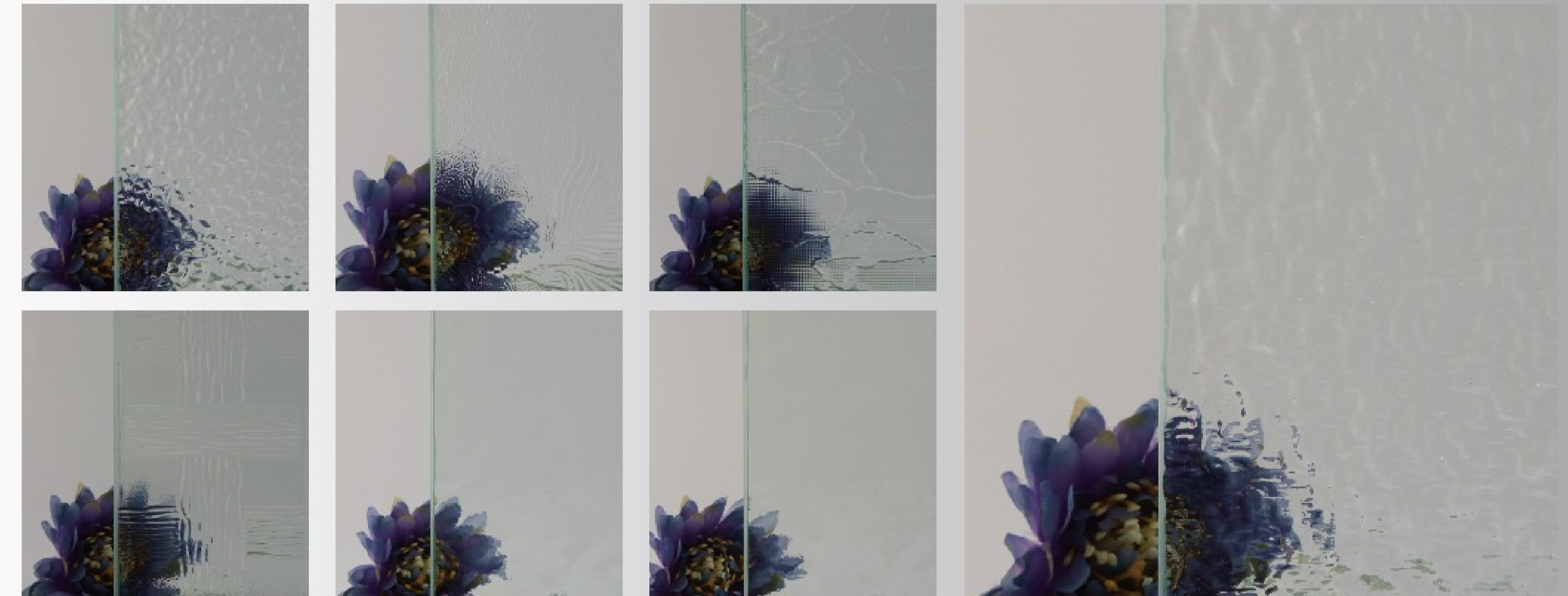
Thickness: 2mm - 6mm

Size: 1220x1830mm, 1830x2440mm, 2134x3300mm, 2134x3660mm, 2250x3300mm or produce according to customer's requirement.

Color: White, Black, Ivory White, Red, Grey, Bronze, Orange, Green, Blue, Color with Glittering etc.

APPLICATION

Wardrobe Door;
Cupboard Door Board;
Furniture Board;
Cabinet Door;
Wall Panel.



Clear Patterned Glass

PARTNER Clear Patterned Glass, also named Clear Figured Glass or Clear Texture Glass, is a not-perfectly-smooth structure with different patterns impressed on it. The depth, size and shape of the patterns largely determine the magnitude and direction of reflection. In addition to diffusing light and obstructing visibility from the outside, clear patterned glass also softens the interior lighting. And so it is also used to diffuse, not obscure, an object when viewing.

PARTNER Clear Patterned Glass is made with a rolled glass process. The semi-molten glass is squeezed between two metal rollers. The bottom roller is engraved with the negative of the pattern. Thickness is controlled by adjustment of the gap between the rollers. All PARTNER Clear Patterned Glass can be toughened to meet safety requirements and most can be laminated to give additional security.

CHARACTERISTICS

1. Each distinctive pattern offers a different level of obscuration, providing privacy without sacrificing natural light.
2. Offers an impression of space and provides a personalised and timeless affect to all environments.
3. Easy to be cut, ground, drilled, tempered, laminated and printed.

APPLICATION

1. Interior design and decorations.
2. Furnitures.
3. Windows and Balconies.
4. Shower screens etc.

PRODUCTION CAPACITY

Patterns: Aqualite, Bamboo, Beehive, Canelado, Chinchilla, Crystal, Diamond, Flora, Karatachi, Masterlite, Millennium, Mistlite, Nashiji, Rain, and so on.

Thickness: 3mm - 10mm

Size: 1220x1830mm, 1524x2134mm, 1830x2440mm or produce according to customer's requirement.

Capacity: 10 x 20'FCL / Day / Line



Colored Patterned Glass

PARTNER Colored Patterned Glass, also named Colored Figured Glass or Colored Texture Glass, is produced through the process same as clear patterned glass. It is available in a wide range of patterns and color, which can provide a colorful and beautiful vision enjoyment.

CHARACTERISTICS

1. Each distinctive pattern offers a different level of obscuration, providing privacy without sacrificing natural light.
2. Offers an impression of space and provides a personalised and timeless affect to all environments.
3. Wide range of color provide many options.
4. Easy to be cut, ground, drilled, tempered, laminated and printed.

APPLICATION

1. Interior design and decorations.
2. Furnitures.
3. Windows and Balconies.
- etc.

PRODUCTION CAPACITY

Colors: Amber, Blue, Bronze, Green, Grey and so on.
 Patterns: Aqualite, Bamboo, Beehive, Canelado, Chinchilla, Crystal, Diamond, Flora, Karatachi, Masterlite, Millennium, Mistlite, Nashiji, Rain, and so on.
 Thickness: 3mm - 10mm
 Size: 1220x1830mm, 1524x2134mm, 1830x2440mm or produce according to customer's requirement.
 Capacity: 10 x 20'FCL / Day / Line



Insulated Glass

Insulated Glass , more commonly known as Double Glazing Glass is double or triple glass window panes separated by vacuum or gas filled space to reduce heat transfer across a part of the building envelop.

CHARACTERISTICS

1. Energy conversation,heat preservation and heat insulation
2. Comfortabenss sound insulation and noise reduction
3. Environment protection .low temperature but No dew
4. Beautiful clear and penetrated

PRODUCTION CAPACITY

Glass thickness: 3mm - 10mm
 Glass: float glass, reflective glass, tempered glass, low-e glass
 Air/argon space gap: 6A, 9A, 12A, 15A, 22A,27A, 32A

APPLICATIONS

Indoor with air conditioner such as Residential, Hotel, Office building, School, Hospital Door and window for Train, Car, Ship, Freezer and Cabinets



Louvers Glass

Louvers open up a room to the outside by allowing fresh air and light in without obstructing the view. Plus, glass louvers keep out the elements like rain and wind while providing needed indoor ventilation. Louvers are an elegant, aesthetically pleasing solution that can be arranged vertically or horizontally in a number of configurations.

APPLICATION

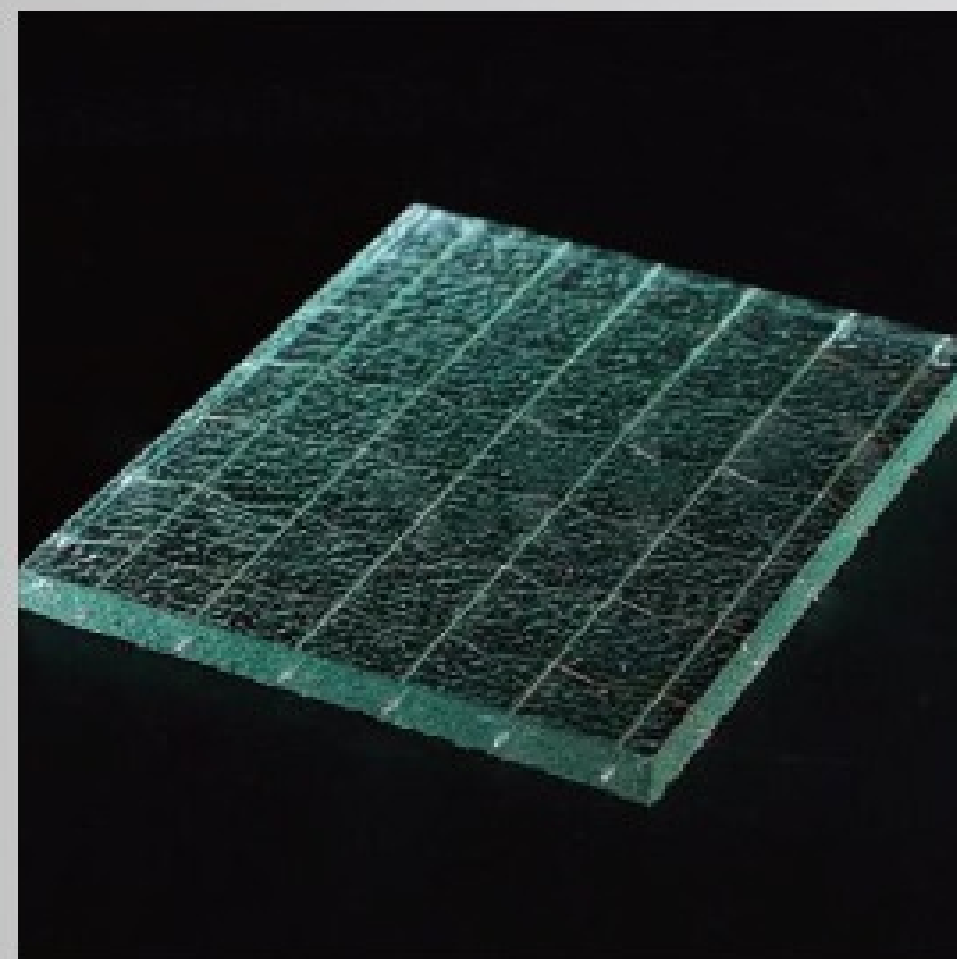
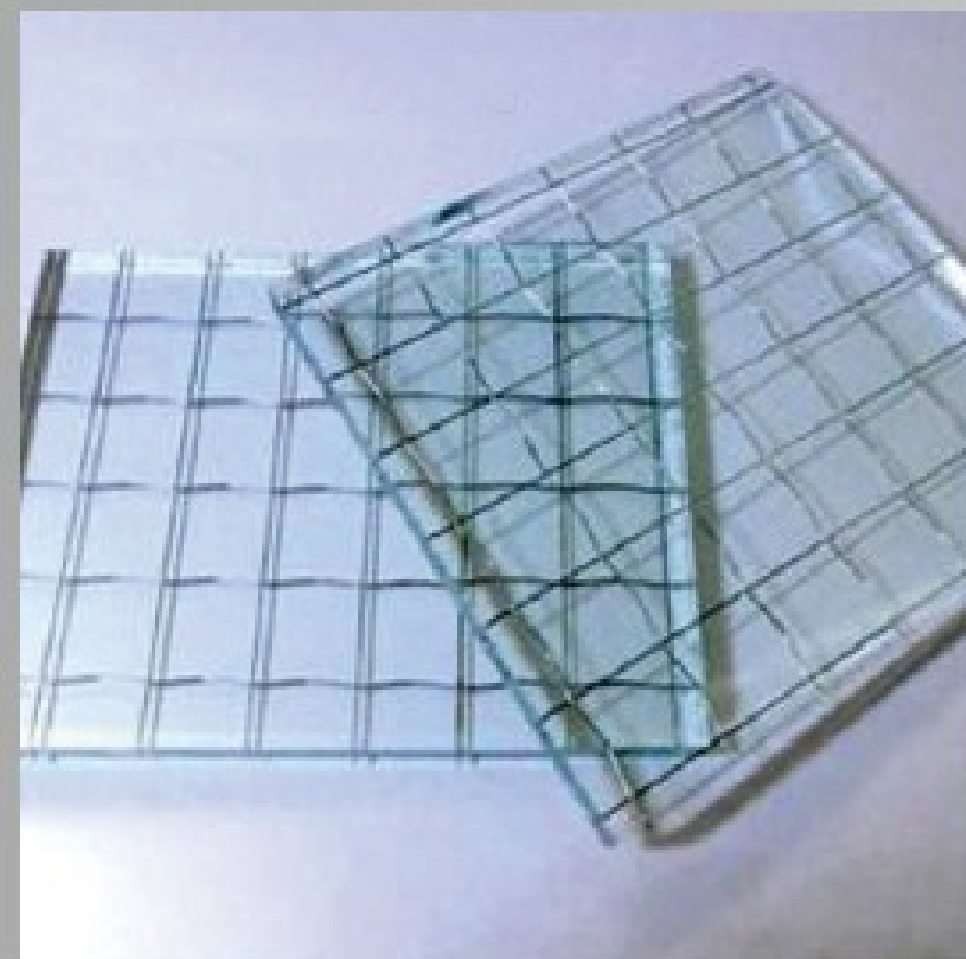
- 1. Office Building
- 2. Apartment
- 3. Residential
- 4. Resort areas etc.

FEATURES

- 1. Guide the wind
- 2. Space saving
- 3. Safety performance
- 4. Decorative
- 5. Remotely control
- 6. Variable combination of door and window

PRODUCTION CAPACITY

Glass: Clear float glass, Tinted Float Glass, Acid Etched Glass, Patterned Glass, Tempered Glass, etc.
 Thickness: 3mm, 4mm, 5mm, 6mm, etc.
 Size: 4"x24", 4"x30", 6"x24", 6"x30", 6"x36" etc.



Louvers Glass

Louvers open up a room to the outside by allowing fresh air and light in without obstructing the view. Plus, glass louvers keep out the elements like rain and wind while providing needed indoor ventilation. Louvers are an elegant, aesthetically pleasing solution that can be arranged vertically or horizontally in a number of configurations.

APPLICATION

- 1. Office Building
- 2. Apartment
- 3. Residential
- 4. Resort areas etc.

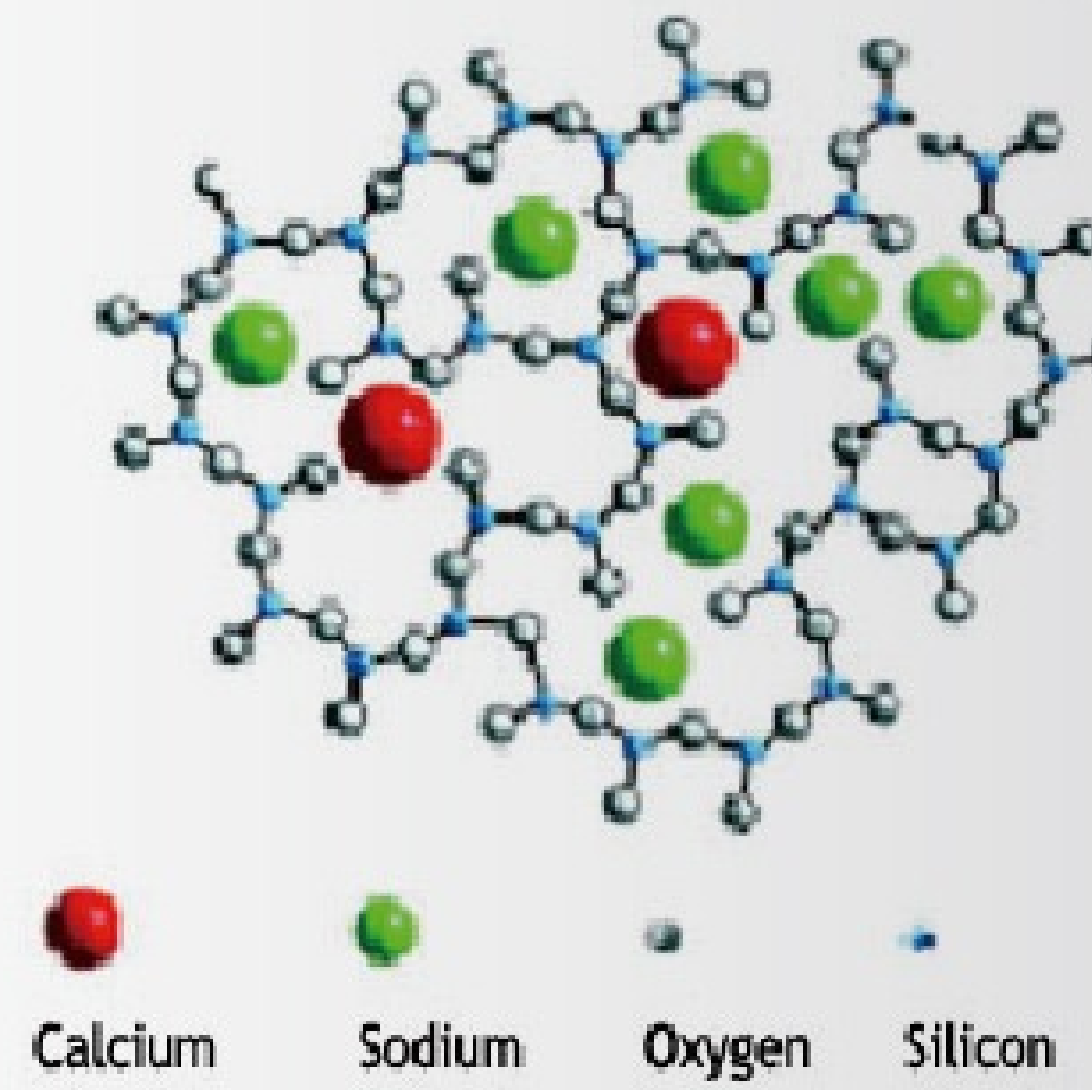
FEATURES

- 1. Guide the wind
- 2. Space saving
- 3. Safety performance
- 4. Decorative
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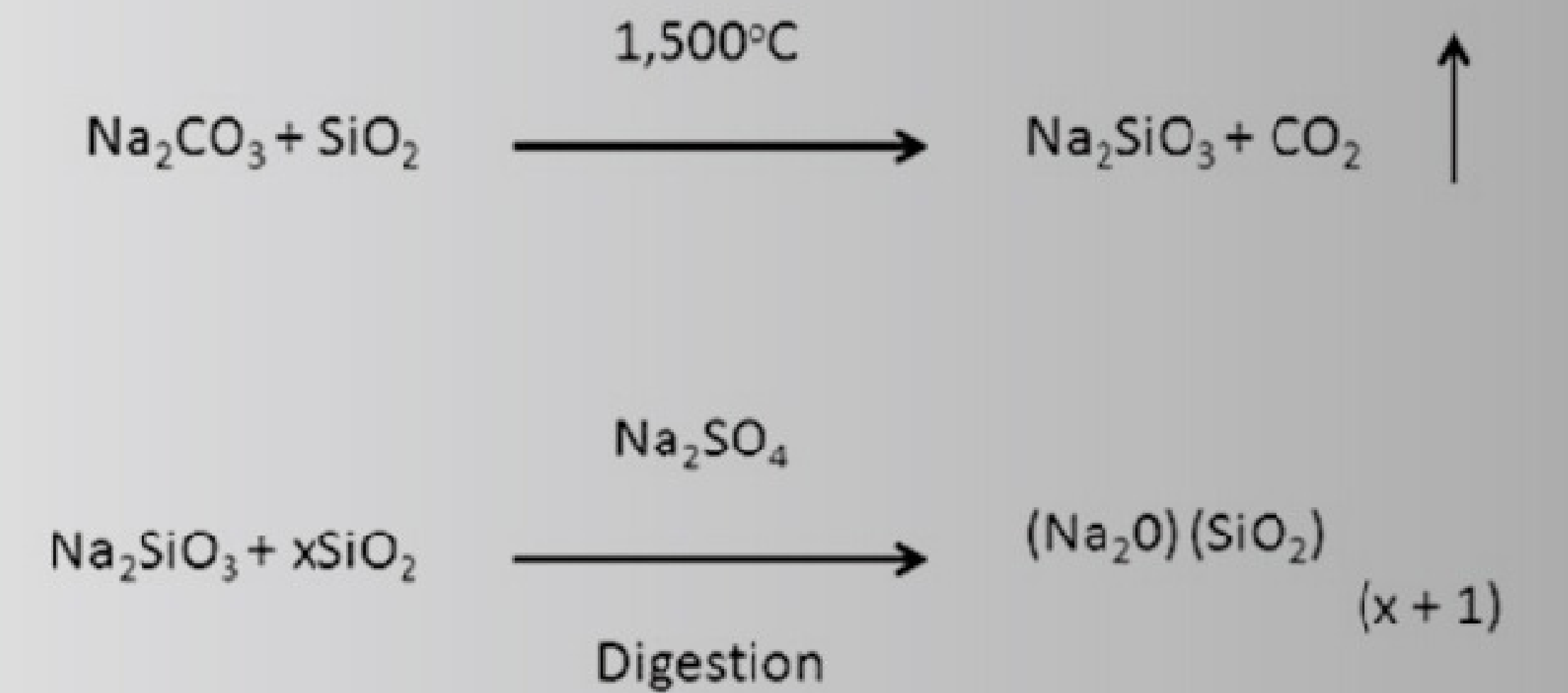
PRODUCTION CAPACITY

Glass: Clear float glass, Tinted Float Glass, Acid Etched Glass, Patterned Glass, Tempered Glass, etc.
 Thickness: 3mm, 4mm, 5mm, 6mm, etc.
 Size: 4"x24", 4"x30", 6"x24", 6"x30", 6"x36" etc.

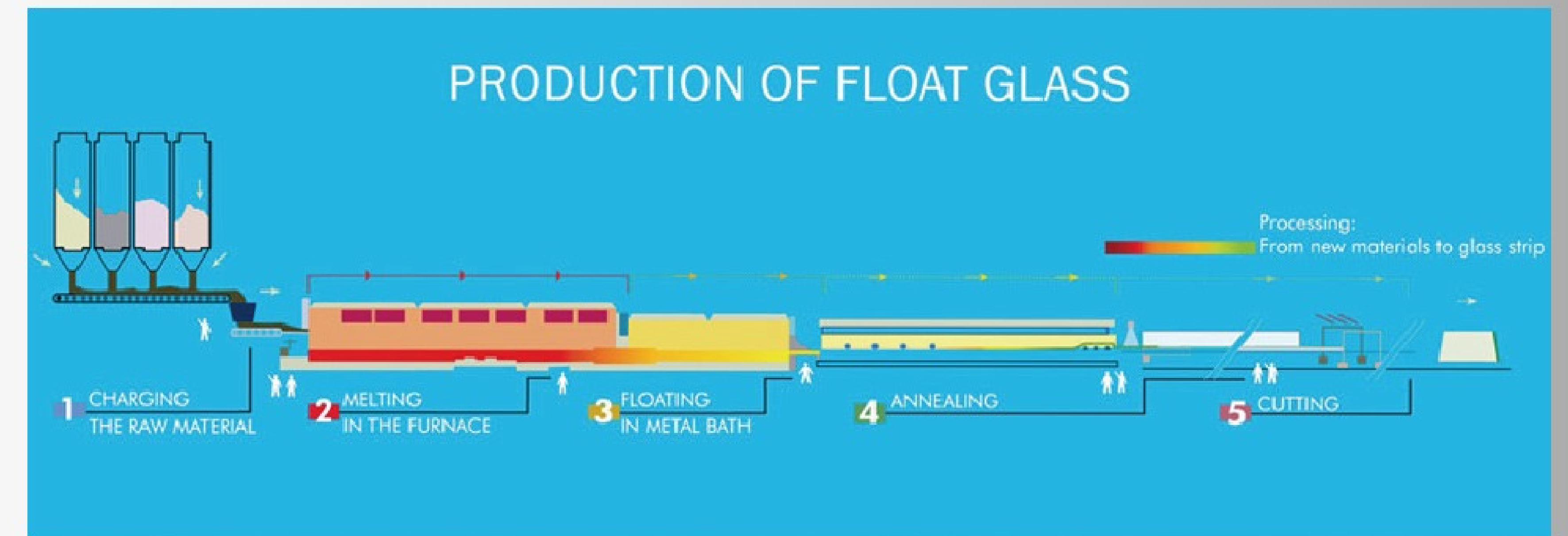
The structure of soda-lime-silica float glass



Important glassmaking chemistry: the basic reaction



Glass Chemical Composition



Glass Production Process

Float glass uses common glass-making raw materials, typically consisting of sand, soda ash (sodium carbonate), dolomite, limestone, and salt cake (sodium sulfate) etc. Other materials may be used as colourants, refining agents or to adjust the physical and chemical properties of the glass. The raw materials are mixed in a batch process, then fed together with suitable cullet (waste glass), in a controlled ratio, into a furnace where it is heated to approximately 1500 °C. Common flat glass furnaces are 9 m wide, 45 m long, and contain more than 1200 tons of glass. Once molten, the temperature of the glass is stabilised to approximately 1200 °C to ensure a homogeneous specific gravity.

The molten glass is fed into a "tin bath", a bath of molten tin (about 3–4 m wide, 50 m long, 6 cm deep), from a delivery canal and is poured into the tin bath by a ceramic lip known as the spout lip.[9] The amount of glass allowed to pour onto the molten tin is controlled by a gate called a tweel.

Tin is suitable for the float glass process because it has a high specific gravity, is cohesive, and is immiscible with molten glass. Tin, however, oxidises in a natural atmosphere to form tin dioxide (SnO2). Known in the production process as dross, the tin dioxide adheres to the glass. To prevent oxidation, the tin bath is provided with a positive pressure protective atmosphere of nitrogen and hydrogen.

The glass flows onto the tin surface forming a floating ribbon with perfectly smooth surfaces on both sides and of even thickness. As the glass flows along the tin bath, the temperature is gradually reduced from 1100 °C until at approximately 600 °C the sheet can be lifted from the tin onto rollers. The glass ribbon is pulled off the bath by rollers at a controlled speed. Variation in the flow speed and roller speed enables glass sheets of varying thickness to be formed. Top rollers positioned above the molten tin may be used to control both the thickness and the width of the glass ribbon.

Once off the bath, the glass sheet passes through a lehr kiln for approximately 100 m, where it is cooled gradually so that it anneals without strain and does not crack from the temperature change. On exiting the "cold end" of the kiln, the glass is cut by machines.