

**MINISTRY OF SCIENCE AND EDUCATION OF THE REPUBLIC
OF KAZAKHSTAN
SOUTH KAZAKHSTAN STATE UNIVERSITY named after
M.AUEZOV**

**PRESENTATION
GLASS PRODUCTION**

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GLASS PRODUCTION

□ **Glass production** involves 2 main methods:

- the float glass process which produces sheet glass
- Glassblowing which produces bottles and other containers.

□ **GLASS CONTAINER FACTORIES :-**

✓ Modern glass container factories are 3 part operations:
- the **batch house**, the **hot end**, and the **cold end**

- The *batch house* handles the raw materials
- The *hot end* handles the manufacture proper — the furnaces, annealing ovens, and forming machines
- The *cold end* handles the product-inspection and packaging equipment.

History

- It started on 3500 BCE in Mesopotamia in the Roman glass making center at Trier.
- Comes from a German word 'glesum' which means transparent or lustrous substance.

GLASS COMPONENTS

❑ **Glass** is an amorphous (non-crystalline) solid material which is often transparent and has widespread practical, technological, and decorative usage in things like window panes, tableware, and optoelectronics.

❑ The most familiar, and historically the oldest, types of glass are based on the chemical compound silica (silicon dioxide), the primary constituent of sand.



ADVANTAGES & DIS-ADVANTAGES OF GLASS

- ▶ Advantages :-
 - Can be made in different sizes
 - Can be coloured or colourless
 - Does not rust
 - Waterproof
- ▶ Disadvantages :-
 - An expensive material
 - Breaks easily-Melts in high temperatures
 - When broken, the pieces may be sharp



Types Of glass

► Float glass

Is Made up of floating molten glass on a bed of molten tin.

This method gives the sheet uniform thickness and very flat surfaces. Modern windows are made from float glass.



Types Of Glass

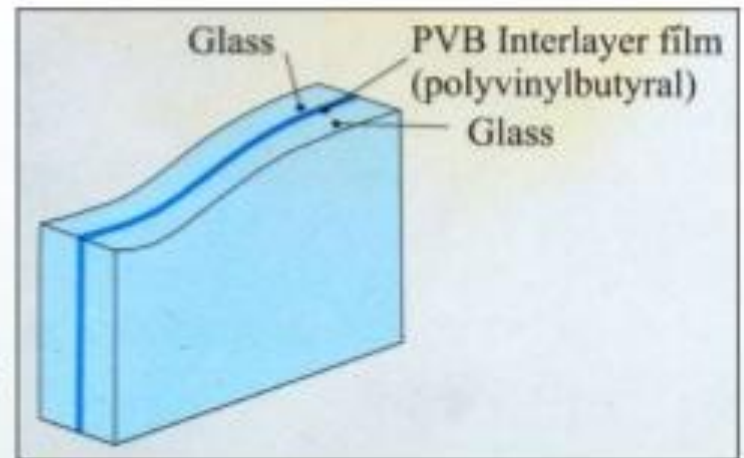
► Laminated Glass

Type of safety glass that holds together when shattered

Held in place by interlayer, typically of polyvinyl butyral, between its two or more layers of glass

Interlayer keeps it bonded when broken.

Produces spider web pattern when broken.

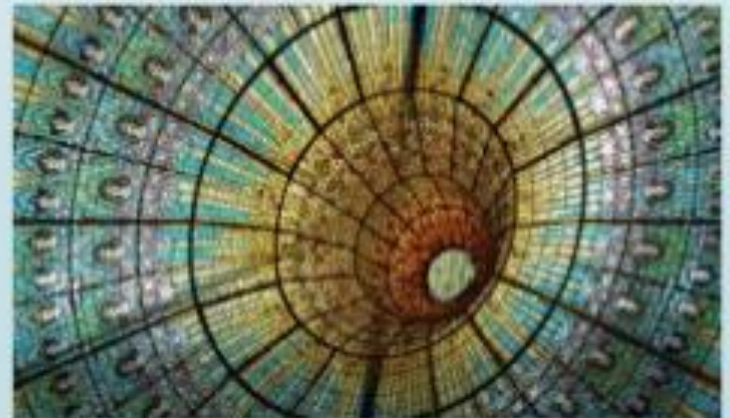


Types Of Glass

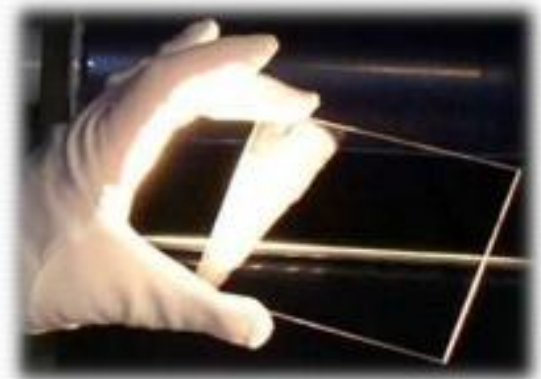
► Stained Glass

The term explains a glass generally refers to glass that has been coloured by adding metallic salts during the manufacture.

The coloured glass is crafted into stained glass windows in which small pieces of glass are arranged to form patterns or pictures, held together by strips of lead and supported by a rigid frame.



TYPES OF GLASS, ITS USES AND APPLICATIONS



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APPLICATION OF GLASS IN BUILDING INDUSTRY

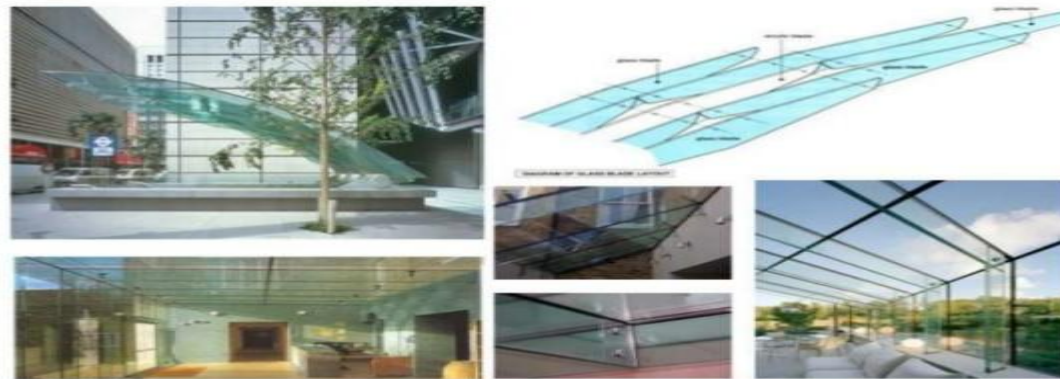
USE OF GLASS IN EXTERIOR & INTERIOR



USE OF GLASS FOR WALL



FIXING OF GLASS



THE END

