

TYPES OF GLASS USED IN INTERIOR

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Interior design is the art and science of enhancing the interiors, sometimes including the exterior, of a space or building, to achieve a healthier and more aesthetically pleasing environment for the end user.

Today there are many different materials to design apartments in different styles. One of the most interesting is glass.

Glass can be incorporated into the design of your home in a variety of ways, whether that's architecturally or superficially as decoration. And there many different types of glass that can be used for different purposes and different effects. The fact that glass can be quite fragile is no longer a problem as it can be toughened for use in any part of the house, from walls to floors and furniture, too.

The purpose of the given work is to designate the main functions of using the material in the interior.

The task is to show the ways of using glass in the interior and to describe various types.

The birth of glass happened a long time ago.

Although glass artifacts from more than 5,000 years ago have been found in Egypt, the Romans appear to be the first to have used glass for windows, perhaps as early as the 1st century CE. These early windows were small, irregularly made, and not very transparent. They were probably manufactured by blowing an elongated balloon of molten glass and cutting off the ends to create a glass cylinder that was then split and flattened to create what has subsequently been referred to as "broadsheet" glass. [1, 238]

Glass is one of the most widely used material in the architectural industry. The numerous types of glass available in the market caters to the requirement of the versatile customers, thus rendering itself as one of the most flexible materials.

1. Patterned glass or Textured Glass. As the name suggests, patterned glass has a decorative design embossed on its surface. It could be a colorful geometric pattern, or just a plain texture. It is most useful in spaces which require privacy but also need sufficient light transmission. It has its applications in conference rooms, foyers, restaurants, shower cubes, and windows.

2. Spandrel glass is used to disguise the less aesthetically pleasing structural elements like columns, walls, shear walls, beams and so on. It comes in plenty of colors and hence can be used in versatile locations to compliment the interiors. It is opaque and reflective in nature. Spandrel glass can be used to cover the kitchen cabinets and walls instead of tiling.

3. Tinted glass is manufactured by adding metal oxides to float glass. While the typical colors used are bronze, grey, dark grey, green, blue, blue-green, many other colors like red, pink, purple can also be manufactured. There is not much change in the elementary properties of the glass, except the the solar transmission.

4. Reflective glass is a clear glass with a metallic coating which reflects heat. It is used in Eco-friendly constructions to reduce the energy consumption of the buildings. It prevents heat loss from the interior of the building and heat gain from outside the building. Another advantage of using reflective glass is that it reduces the glare which is provides comfortable working environments in the office or home.

5. Satin Glass (Privacy glass) has satin finish as the name suggests. It is a good material for decorative purposes. It can also be used as a partition wall in retail spaces or hotels where one requires privacy as it blurs the view. Satin glass is a low maintenance product as it prevents the dust from sticking on to its surface.

6. Security glass can either be laminated or toughened. Laminated glass is an engineered glass which holds its pieces together in an event of disaster. It can be used in sensitive areas such as jewelry shops or even a staircase. Toughened glass is also a popular choice for table tops since it prevents cuts and injuries due to broken glass.

7 Clear glass is the most common type of glass seen in interior spaces. Clear glass allows almost 80-90% of the visible light to pass through. Its transmittance quality makes it an ideal material for making lamps and chandelier. It can also be

molded into a clear glass vessel type wash basin or a over the counter type wash basin.

8. Acoustic Glass. As the name suggests, this type of glass has acoustic properties and thus is most suitable in areas with high noise pollution. It absorbs and weakens noises thus reducing the decibels heard by humans. Acoustic glass finds its application in diverse spaces like office space, conference rooms, music studios, hospitals, libraries, residential houses and retail spaces.

«Gehry's jewel of a concert hall in Berlin was designed to transcend differences... Other decisions marry design elements with the need to optimize sound quality. Unlike a balcony in a typical concert hall, the one here is detached from the walls, so bowed glass sheets were hung beneath the eastern and western edges to return sound to the musicians. Because the architects insisted on keeping the windows transparent to insure seamless views to the city, three layers of glass in the deep window casings provide sound isolation. The creamy Alaskan yellow-cedar stage floor was selected because it is extremely resonant and enhances the sound of instruments that touch it, like cellos or pianos. When the light from the adjustable-LED Tungsten fixtures bathes the surface, «the whole room glows from this central focus» says Webb, designer » [2, 27]

9. Energy Efficient Glass Windows are responsible for as much as 25% of heat exchange between the interior and exterior of your house. Since the facade is exposed directly to the sun, use of environment friendly glass will reduce requirement for heating or cooling the space depending upon your geographical location.

Consider these features for windows that are more energy-efficient and easier to maintain

Adding vinyl, aluminum or fiberglass covers the exterior of a wood-frame or composite window, eliminating the need to paint.

Double-glazed windows have a sealed space between two panes of glass filled with air or gas. Gas provides better insulation and is standard on many windows. but the energy savings won't justify paying more for it. Triple-glazing adds a third layer of glass. which reduces noise significantly. Energy savings are improved. but not

enough to justify cost in all but extremely cold climates or where there is a constant and very loud noise (near airports or major freeways).

Low-e coating It's transparent and improves the efficiency of the glass by reflecting heat yet letting in light. The coating is applied to the outside glass in warmer climates to reflect the sun's heat out and in colder climates it's applied to the inside glass to keep heat in. But keep in mind that any coatings applied to glass, no matter how transparent, reduce the visibility.

Tilt-in sashes. On single- and double-hung windows, the sashes (the moving part of a window) can be tilted in for easy cleaning. Almost all brands have this feature.[3, 38]

The glass industry continues to innovate with new technologies like dynamic glazing. With such a wide and constantly growing range of glazing options available to architects, a key 21st century innovation has been the creation of digital tools that can help designers evaluate and select the precise glass product they want quickly, easily, and accurately. These tools now exist, allowing architects to: customize the performance properties they desire; visualize the glass they want from a variety of perspectives in a variety of weather conditions; evaluate and compare glass performance (light transmission, u-value, solar heat gain coefficient) for a variety of alternatives; calculate energy performance; and export the results to a BIM model. All within a seamless process designed to save architects time, while also giving them the flexibility to explore a wide range of glazing options and alternatives, some of which they may not have considered before. [1, 240]

Glass has been used in interior design for a very long time. Every day humanity finds a new application for it. Glass takes on both a decorative and a functional role in the design of the interior spaces. The task of modern designers does not stop on the achieved result and progress in improving the ideas of using this material.

СПИСОК ЛІТЕРАТУРИ

1. Fortmeyer, R. 125 Years of Product Innovation and Evolution // Architectural_Record. – 2016. – №10. – PP. 232-240

2. Pechinski, M. Pierre Boulez Hall by Gehry Partner // Architectural_Record. – 2017. – №3.– PP. 23-27.
3. Perratore, Ed. Windows // Consumer_Reports. – 2016. – №11. – P. 38-39