



GOLDEN PHAROS GLASS SDN.BHD (265409 W)

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GLASS SELECTION

Glass usage in the country has been growing dramatically over the past decade. We all like our houses and buildings to open up to the environment and be flooded with natural light. Architects and decorators are innovatively using glass for variety of applications from skylights to partitions, balustrades and many-many more that make our surroundings look more spacious and aesthetics.

The correct choice of glass for a particular application requires the consideration of a number of different characteristics. It appears relatively straightforward on the surface, but beware: selecting the wrong glass can add thousands of dollars of cost and lost time to your operation annually.

For most installations, the following glass properties should be evaluated: color and appearance, visible light transmission and reflection, solar transmission (Solar Heat Gain Coefficient), thermal and acoustic insulation, strength, deflection under load and safety requirements.

Color and Appearance

Glass is more than functional – it is architectural. It gives the illusion of more space, increases natural lighting and lends character to interior spaces. As one of the forefront glass processors in Malaysia, **GP** Glass leads the industry in offering innovative, value added and a wide variety of colors. The appearance glass colors include clear, light blue, dark blue, green, bronze, grey, dark grey or coated glass. Glass color appearance can be also conditioned by several environmental factors such as sunlight (midday sun or sunset), reflected sky and clouds, etc.

Visible Light Transmission and Reflection

Interior daylight levels will be determined by this value. In Malaysia, visible light transmission should at least 50% in accordance to MS1525. Note that if a high light level is needed with solar control, Then **GP** Green, Blue or Grey tinted glass can be used to give almost as much visible light transmission as clear glass, while providing better solar control. Increased solar control, by using **GP** Green or Dark Blue reflective glasses, reduces the visible light transmitted.

Solar Heat Gain Coefficient (SHGC)

There are various choices available to the informed buyer to save on energy costs and get all aesthetic and psychological benefits of glass. Coated and tinted glass products and insulating glazing units can be used to control the flow of energy into and out of a building. In a hot environment like Malaysia, solar control glasses can be used to dramatically reduce the effect of the sun's heat, minimizing the need for air-conditioning. Solar control glass, usually either body tinted (absorbing) or coated (reflecting), is used to reduce unwanted solar radiant light and heat energy transmitting through glass. The SHGC is the best measure of how much solar energy is admitted through a glazed opening.

Thermal Insulation

The U-value is a measure of the rate of heat loss of a building component. It is expressed as watts per square meter, per degree Kelvin, W/m²K. Lower U-values are achieved by multiple glazing layers, gases and the use of low emissivity coatings.

Acoustic Insulation

The need to restrict sound arriving from the external environment means that glass should be able to shield and insulate the internal spaces of a building. Glass thickness and type are the major factors influencing the passage of sound. Thicker glass transmits less sound than thin glass. Thick glass is very effective at stopping low frequency traffic noise, while thinner laminated glass is effective at controlling the mid-range frequencies of human conversation, etc. Better sound insulation can also be achieved with thick glass laminate or insulating glass unit in which vacuum-sealed inner spaces and some gasses affect sound insulation and provide acoustic stability.

Strength and Deflection Under Load

Glass is subjected to different types of environment and human loads, which can cause glazed surfaces to malfunction or break. Since each load has a specific impact on glass, with different calculation formulas, it is important to understand each of these phenomena in order to choose the appropriate glass.

Strength and deflection values can be calculated from ASTM Standard or obtained from **GP** sales representatives.

Safety Glazing

A commonly perceived notion is that glass compromises safety and security. However, continuous research and technology advances have made glass safer and more secure than it ever was. Solutions like **GP Laminated** glass in its various types are being widely used for the purpose of accidental protection. **GP** glass can now protect your home and office from threat from burglars. A panel of multi-layered glasses or special made thick glass can offer even higher levels of protection from bullets to blast to burglary.