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Keeping it glassy

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Prestige, Chennai



Ericsson, New Delhi



Ericsson, New Delhi



Digitech office at EA Mall



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There are many varieties of glass that are suitable for Chennai's hot, tropical climate

As the construction industry in the country has evolved, tall and intelligent homes now dot our urban landscapes. Although in the past, concrete was majorly used for construction, this decade has seen the usage of a variety of new materials that are environment-friendly. While glass has been a popular choice, many experts feel that the material isn't particularly suited for Indian conditions. Known for its transparent and rigid nature, its biggest disadvantages are its ability to transmit radiant heat making it vulnerable to heat gain from external sources, and its ability to attract indirect heat gain from atmosphere. A steady interior temperature is hard to maintain unless proper measures are in place. This, however, is not the case anymore and modern glass varieties have gone beyond being mere clear glass.

The variants

Advancements in technology have produced different glass variants — tinted glass, solar control glass, thermal insulation glass, mirror glass, lacquered glass (SGG Planilaque), dynamically operable glass, fire safe glass, to name a few. Today, all these variants are manufactured in India, and have been specifically developed for Indian climatic conditions, says Subramanian R., Managing Director-Glass and Solutions, Saint-Gobain India.

Regular glass can be transformed into solar and thermal insulation glass that helps harness daylight and cuts down the heating load. Lacquered glass can be shaped out of normal glass and specialty glass solutions provide fire resistance for up to 120 minutes. “Glass being transparent enables the conception of designs which focus on the interplay of light and space. This characteristic also increases the connect between indoor and outdoor spaces.” Energy-efficiency has become an important functional requirement in contemporary buildings, and a large percentage of building energy consumption is due to air-conditioning and artificial lighting. The right choice of glass can reduce this energy burden to a large extent. In fact, solar control glass can cut up to 70 per cent of direct heat gain of building due to incoming sunlight, thus reducing the cost of cooling the building.

Commercial - Residential

The design and construction of a building depends entirely on the climatic conditions of city. In a city like Chennai, we are prone to intense solar radiation accompanied by high humidity and, therefore, a building’s design should ensure that it is sufficiently shaded to prevent solar radiation, says Darshan Jain, project director, Vijay Shanthi Builders. In commercial buildings, double glazing facades reduce heat transmission. Also, 40 to 60 per cent of day light energy is saved, says N .Kalyanaraman, GM Technical, Navin’s. “Various types of glass such as reinforced glass, coloured glass, self-cleaning glass, can be used.” Glass cladding fulfils the functional requirement of lighting, heat retention, and energy saving. Toughened glass can be used for transparent staircases, coloured shelves, and ceilings.

Architects and builders are now increasingly using glass in residential projects as well. Glass is apt for areas like the bathroom, club house, and also allows for more natural light to enter the home, says T. Chitty Babu, Chairman and CEO, Akshaya.

Not just the exterior

Glass in interiors, says Subramanian, adds texture, colour, and identity. The use of glass for walls, partitions, doors, and wardrobes can give a heightened sense of spaciousness and comfort. By using lacquered glass for interiors, one can avoid continued exposures to volatile organic compounds or VoCs that are otherwise present in paints and allied materials. Arun Kumar, Founder and Managing Director of Casa Grande, says that glass usage for interiors proves to be a space saver. “Over the years, the demand for glass structures has increased. Glass is recyclable, making it more eco-friendly too.”

In commercial projects, opaque glass makes for beautiful backdrops for reception and waiting areas, pantries, and lift lobbies. Laminated glass panels can be used as doors and partitions for cubicles or for rooms, toughened, and thicker glass variants can be used as a staircase. In homes, glass can be used for dining tables, wardrobes, kitchen counters, and bathroom cubicles.

Climate responsive

Deben Moza, Joint CEO & ED, Project Management Services, Knight Frank Property Services, says, “Although these materials help in minimising the heating effect indoors, they are not cost-effective solutions, and are therefore not on the priority list for residential spaces. The judicious use of glass along various facades, keeping in mind sun and wind directions, is essential.”

Today, with evolving technology, other climate-friendly construction materials have also evolved such as fly ash bricks, autoclaved calcium silicate bricks, concrete masonry units, foamed or aerated CC blocks, and husk boards.

More than materials, the focus should be on design, says city-based architect Xavier Benedict. “Buildings in Chennai should be designed to withstand excessive heat and rain.

They should be positioned with shorter walls along the east-west direction. Unfortunately, builders and promoters are avoiding such integrities to reduce the cost of construction.”

He also advises the use of light-weight roofs and thinner walls, or material such as porotherm or insulated bricks that are good options to reduce heat absorption.