Low weight bringing great benefits

Contemporary architecture loves glass. Large-sized glass panels allow architects to design aesthetic spaces using glazings of large dimensions and varied appearance that provide superior light saturation. If, however, the glazed walls are also meant to serve as fireproof partitions, the weight of the materials must be considered. The larger the panel size and higher its fire-resistance class, the more critical the weight of the material becomes.

Fire-resistant glass, regardless of technology, is laminated glass comprised of two or more panes with fire-resistant layers of film or gel of varied composition. To improve the fire-resistance rating within the EI classification of laminated glass (i.e., the time, in minutes, for which the glass resists flames, smoke, and heat), you need to add another pane and film. This results in additional weight.

POLFLAM® glass is produced using advanced hydrogel technology. It is this hydrogel, filling the space between two float glass panes, that makes the panel fire-resistant. The EI class of the panel is closely related to the thickness of the gel layer. POLFLAM's proprietary formula for the gel has allowed the company to create exceptionally lightweight glass panels. This characteristic is particularly noticeable in glass with higher EI classification. Compared to glass created using other technology solutions, POLFLAM® glass is much lighter.

POLFLAM® fire-resistant glass's low weight allows the company to make large-size panes without placing an excessive load on the structure of the building.

In the photo: POLFLAM® EI 30, dimensions 5900 x 3100 mm, fire resistance test at the ift Rosenheim institute, Germany

Structural calculations

Engineers must account for the weight of construction materials as a critical parameter in structural design. Minimizing weight reduces concentrated load on the building's structure. This allows architects the freedom to use large fire-resistant glazing in their designs. For instance, a high lobby design can incorporate large glass panels without the need for extra structural reinforcement or the associated complexity and construction work.

Financial benefits

Minimized weight translates directly to minimizing cost. In addition to the cost reduction in structural reinforcement requirements, the cost of the wall itself is also lower. Lighter glass panels require fewer fittings and mounting system elements to stabilize the partition, which reduces mounting time and complexity. The cost of logistics related to delivery on site, should also be taken into consideration. Cost savings are realized across the entire project.

Additional benefits

POLFLAM® glass of higher EI classes is not only lighter but also thinner, compared with alternative technologies. Thanks to specific properties of the proprietary fire-resistant gel formula, it also has an exceptionally high light transmittance factor, Lt, which typically decreases proportionally with increases in fire-resistance class.

More information about our products can be found on: www.polflam.com.