

Using the right glass for your glass curtain wall

The dangers of the glass curtain wall mainly come from the bursting and falling off of the glass, and the unreasonable reflection of the sunlight. The cracking of the glass may cause the glass fragments to fall off and hurt people. It may also cause the whole glass to fall off and hurt people. The unreasonable reflection of sunlight, especially the reflection of strong light by high reflective glass is also one of the unsafe factors. Due to the shedding of the glass, and sometimes the detachment of the entire curtain wall, the main reason of the accident is the improper use of the glass or the improper installation of the glass. Major cities such as Beijing, Shanghai, and Shenzhen are developing safety regulations to regulate the use of glass curtain walls.



1. Analysis of the causes of glass bursting and falling off

The main reason for the glass to burst and fall off is the problem of improper glass selection or glass installation. First, the glass is fragile. There are many micro-cracks on the surface of the glass, which causes the strength of the glass to be much lower than its theoretical strength. It is easy to cause the glass to burst when it is used. Secondly, the glass exposes the sharp edge at the broken edge. Or sharp corners are also very easy to cause harm to people; third, glass, especially glass curtain walls are generally installed in more exposed parts, easy to breakage.

In addition to the effect of artificial external force, the explosion of glass has the following aspects: First, the thermal cracking of glass, especially the heat-absorbing glass and heat-reflecting glass form an uneven temperature field on the surface of the glass when exposed to sunlight. Thereby forming a thermal stress in the glass, when the thermal stress exceeds the allowable range of the strength of the glass, and bursting; second, after the wind is subjected to the wind load, that is, the wind pressure, the force of the wind pressure exceeds the allowable range of the strength of the glass to burst. Third, the self explosion of the tempered glass, fourth, the glass is installed with large stresses, and the glass also bursts with time; fifth, the glass is damaged or cracked before or during installation. When it is subjected to other external impacts, it bursts; sixth, it breaks or bursts under the influence of other factors such as earthquakes, ice and snow. The cracked glass may fall off and become an unsafe factor.



1. Measures to improve glass safety

The most effective measure to ensure glass safety is to prevent glass from bursting; secondly to prevent glass from falling off; and third, to prevent light pollution from the glass.

To prevent glass from cracking, consider the following aspects:

(1) Reasonably choose the glass size. The larger the glass area, the easier it is to burst. For the determination of the area, refer to JGJ102-96 "Technical Specifications for Glass Curtain Wall Engineering".

(2) Try to use heat treated glass, tempered glass and heat strengthened glass. The strength of tempered glass is 3-5 times that of normal clear float glass, which can effectively resist the impact of wind and snow load and foreign objects, but there is a problem of self explosion of tempered glass. Although the strength of the heat strengthened glass is only about half of that of the tempered glass, there's no self explosion possibility.

(3) When the heat absorbing glass and the reflective glass are used in the curtain wall facing the sun, the original piece of the glass is preferably heat treated. Because the glass in this part is very susceptible to thermal cracking.

(4) using polished glass.



(5) Do not leave assembly stress on the glass when installing the glass. Construction according to relevant specifications, to minimize glass deformation.

The measures to prevent the glass from falling off are:

(1) Select laminated glass. Laminated glass and tempered glass are called safety glass. Because of the existence of a plastic organic intermediate layer material, the laminated glass can be fixed to the frame while broken, and does not fall off, especially the roof is made of glass roof, high-rise buildings, and prosperous Laminated glass must be used for the glass on the commercial street.





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(2) Use towel glass. The towel glass is a layer of organic transparent film adhered to the surface of the glass, which also maintains a whole when broken.

(3) Try not to choose the full hidden frame glass curtain wall, and choose the semi-hidden curtain wall. In the selection of structural glue and construction, the hidden frame curtain wall should pay special attention to the quality of the structural sealant, the compatibility with the glass and the frame, and the treatment of the surface of the frame glass.

The most effective way to prevent the contamination of the glass is to choose a low reflectivity coated glass. The reflectivity is generally not more than 30%.



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Tags: FLOAT GLASS, glass bursting, glass curtain wall, glass deformation, glass fragments, glass roof, glass safety, heat absorbing glass, heat strengthened glass, heat-reflecting glass, hidden frame glass curtain wall, high reflective glass, high-rise buildings, laminated glass, light pollution, safety glass, self-explosion, structural sealant, tempered glass, wind pressure



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About Morn Building Materials:

Morn Building Materials Co.,Ltd is trading company offering the right facade materials for a wide range of applications for architectural,design and system requirements.Cooperating with China premium glass fabricators,Morn is able to supply whatever glass products applied in facade,Spandrel ,roof ,handrail,partition,balustrade,canopy,greenhouse,sun room ,interior exterior application.

Other facade materials:Aluminium alloy profiles,aluminium plates,aluminium windows&doors,Assa Abloy hardware,spider fitting,railing systems,shower rooms,polyurethane panels,machines&tools,steel structure, are also available since 2019.

From aesthetics, to strict environmental and energy specifications, to critical budget and delivery requirements, our input can make a difference.

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