Guidance Note

Safe handling of glass façade panels

Advice on the onsite handling of glass facades or glass curtain wall panels (glass panels) that also provides guidance on how to reduce the risks of the glass shattering.

October 2013

Background

A heat-strengthened glass panel being installed on a high-rise building shattered into glass shards after impacting the building while being lifted by a crane. One large shard landed outside the site's exclusion zone and it had the potential to cause serious or fatal injuries if it had struck a person below.

After the above incident, concerns were raised with WorkSafe Victoria by industry about the handling of heat-strengthened glass panels.

The heat-strengthened glass in the panel met the Building Code of Australia (BCA) requirements for typical service loads of the finished building. However, the BCA does not take into account the loads subjected to the glass panels (eg impacts, vibration) during transport, handling, storage or placement.

Recommendations

Persons involved in the lifting and placement of glass panels should consider the construction loads that could be placed on the glass panels and ensure the glass panels are handled in a manner that minimises, so far as is practicable, the risk of glass shattering during installation.

Various worksite employers will have management and control of the panels during the different phases of the work. All employers should ensure, so far as is practicable, that people onsite and the public are not put at risk from glass panel handling. The principal contractor should coordinate with the other site employers, including the panel installer, to ensure systems of work are developed to handle glass panels.

When developing systems of work ensure:

- the risks from the type of glass used in the panel are taken into account
- affects of adverse weather conditions on the handling process are considered
- all employers involved in the works are involved
- workers and relevant health and safety representatives are consulted.

If glass panel handling or placement involves high risk construction work a safe work method statement must be developed for the high risk work and then followed.

Where there is a risk to any person from falling glass, that risk must be controlled, so far as is practicable. Consideration should be given to controls that could prevent shattered glass from falling. Where the risk cannot be eliminated an exclusion zone should be established below the works as part of the control measures.

Employers must provide information and any necessary training on the safe handling of the glass panels to all employees involved in the unloading, onsite storage or placement of the panels.

The works must be supervised to the extent necessary to ensure the:

- systems of work are adequately managing the risks
- overall system of works is being followed, including safe work method statements for high risk construction work.

Glass types

In developing safe systems of work, employers should take into account the characteristics of the glass used on the panel. Generally, glass will be one of the following types:

Annealed glass (or float glass) when broken breaks into large jagged shards and is not suitable for architectural applications or where there is a high risk of breakage (eg bathrooms, door panels, fire exits and at low heights in schools).

Heat-strengthened glass when broken breaks into sharp pieces typically smaller than annealed glass but larger than toughened glass.

Toughened glass usually shatters into small, square pieces (thumb nail size) and is used in unframed assemblies (eg frameless doors), structural applications and any glass where there may be human impact. Toughened glass can break from impacts to edges or to the centre of the glass pane.

Laminated glass is two or more layers of glass held in place

by interlayers of PVB which bonds the glass even if broken and produces a 'spider web' cracking pattern if the impact does not pierce the glass. It's often used if human impact is possible or where the glass could fall if shattered. Shopfront glazing is typically laminated glass.

Safety glass is not a glass type but a term used for laminated glass; however it is also applied in certain applications to toughened glass. Where glass is labelled safety glass the supplier should be consulted to determine the actual glass type.

Further information

WorkSafe Guidance Note -*Preventing breakages during the installation of frameless glass balustrades*

AS1288 – 2006 *Glass in buildings – Selection and installation*

Building Code of Australia

Contact Details

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For more information on occupational health and safety, go to WorkSafe's website: **worksafe.vic.gov.au**

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