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Storage of Glass - General Principles

Introduction

Glass is generally stored vertically on its edge, in dry conditions. Whether storage is on the short or the long edge is dependent on size, substance, availability of space, etc.

Factors to Consider When Storing Glass in it's Edge

The glass should not be in contact with any substance that is harder than itself, e.g. concrete, stone, ferrous metals or broken glass. This will minimise the risk of damage and breakage, and can be implemented by cladding all supporting structures with timber, felt, rubber or plastic material. Care should be taken to ensure that all nails and screws likely to come into contact with the glass are countersunk below the surface. Always ensure supporting bearers are clean.

Angle of inclination or lean of the glass

Use the following as a guideline:



Free fall racks:
3° from the vertical



Concertina
(compactor) racks: 4°



Jumbo'A' Frames:
5°, with tie rods: 3°



Transportable racks,
bar-rows, trolleys and
stillages: 5° - 6°

If the angle is increased above 6°, it will tend to put extra weight on the back sheets and make sheet separation more difficult to achieve.

Supporting Bearers

Glass stored on its edge should be supported as evenly as possible over its surface area. The support should ideally cover either the total length or the total width of the glass. It can take the form of flat bearers or battens at least 50mm in width, which may be spaced to suit the size of the sheet being stored.

Inadequate or uneven supporting bearers can cause the back sheets of a stack to break when the weight of sheets in a full pack is applied.

Flooring

It is essential that the flooring be of adequate strength to support the weight of the stack. Consideration should be given to preparing computations for floor areas designated for bulk glass storage.

If possible, the base of the rack should aim to spread the weight over the largest possible floor area, e.g. a distributed floor loading is preferable to a concentrated or pin point load. This is very important where glass is being stored at a first floor level or above.

Types of Storage

The type of rack selected obviously depends on the size of the glass to be held, the volume or number of sheets to be stacked, and the method of handling to and from the particular rack, e.g. mechanical handling devices may require a specific type of rack construction.

Design computations should be calculated to prove the rack is suitable for the intended load. All materials used in the construction of storage racks should be of sound quality and should be examined periodically.

Off-Cut Storage

Off-cut storage racking should be safe and secure with regular inspections conducted.

The construction of the racking should include 'cross bracing' along the length of the rack and each end must be firmly secured to the floor and/or ceiling.

Safety Considerations

- All storage areas should be free from slip/trip hazards.
- Restrain glass in windy conditions.
- When storing glass on trolleys in a 'static position', ensure trolley braking devices are engaged and restraining bars are used.
- Ensure there is a minimum of 600mm clearance between storage racks.
- Ensure adequate clearance between the edge of the storage rack and building walls - minimum 800mm.
- Glass stored on frames should be evenly loaded on both sides of the frame.
- Never stack glass against walls. Any cases of glass or end caps stored in a vertical position need to be appropriately restrained, e.g. inverted T's or case props.
- Any glass stored offsite must be stored in accordance with the above mentioned principles.
- Conduct regular inspections of blocks and cases in storage for any previously unknown damage to sheets.
- Ensure employees are properly trained in correct storage techniques.
- All glass stored should be clearly visible. This includes the marking of any protruding ends so that people can not accidentally collide with the glass.