

STORAGE OF GLASS— DOUBLE TIER RACKING

Introduction

A double tier racking system allows glass in cases and end capped blocks to be stacked on top of each other in spaces where storage space is limited. Glass stored in this way is structured and organised making management of stock easier.

Design

Racks should be constructed to relevant standards AS 4084—2012 Steel Storage Racking.

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 welds should be examined periodically.

Flooring

It is essential that the flooring be of adequate strength to support the weight of a fully loaded rack.

Consideration should be given to computations for preparing the floor as designed for bulk glass storage. The floor must be level and the vertical elements must remain vertical. Floor loads are primarily about point loading. This should be incorporated into the rack design. One end cap can weigh in excess of 1,800 kg, therefore tiered racking when fully loaded can result in a substantial amount of weight on the floor.

Loading

Care must be taken for both loading and unloading of this style of racking. Glass must be kept central to the rack width, with equal overhang on each side of the rack. End caps can be loaded using slings, chains and blocks, or by use of a saddle grab.

When loaded, the glass must be high enough off the floor so as to enable removal of pins when a saddle grab is utilised.

The area must be swept clean prior to loading, as a full rack requires someone to lay on the floor to un-hook the saddle grab. Stock must be rotated and the rack should not be only top loaded.

Only those trained to operate a crane should load and rotate stock. There must be sufficient room to access both sides of the racks so that the lifting equipment used can be removed ie, chains, slings or saddle grab.

Only sheets of the same size should be stored in individual slots. This type of rack should not be used to store off cuts. All surfaces must be lined so as to prevent metal to glass contact.

Removing loose sheets of glass

Though not recommended due to the inherent dangers associated with this style of racking system, extra care must be taken when removing individual sheets. Dangers such as the overhanging glass blocks on either side or above, and the lack of room around and within the rack exist.

When removing loose sheets PPE such as gloves, gauntlets, safety boots etc should be worn. The sheet should be checked for vents prior to removal. Care must be taken to not pull the sheet out too far, as it may drop off the edge of the rack and fracture on the floor; the use of a roller is recommended.

Consideration should be made as to the type of glass, its weight and size, and to the number of people required to lift the glass out of the rack.

When storing loose sheets within a tiered rack, as shown in Figure 1, regular maintenance is required to the padding on the steel structure, such as foam, felt or kainite, as the glass that rests upon it can break under its own weight. Always ensure supporting bearers are clean.

House Keeping

At all times the areas around and within the racking system must be kept clean and free of debris and trip hazards.



Figure 1

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03 8669 0170

Published: May 2015
SFS-DBTR-15052015v01