

# Racking Installations

The requirements for the safe installation of racking vary according to the type and size of the system, and the nature of the building or area for which it is intended. Safe working loads, heights, widths and equipment tolerances should be set by the designers and manufacturers of the total system. The basic principles for safe installation are as follows:

- Racking should be installed in accordance with the manufacturer's instructions;
- Racking should be erected on sound, level floors, capable of withstanding the point loading at each base plate;
- Where the design of the racking requires it to be secured to the building, only those building members who have been 'proved' by structural calculations should be used. It, therefore, follows that the design of the racking in such a case should be compatible with the building layout;
- Double sided runs should be connected and spaced using suitable run spacers;
- Where necessary, for example where lift trucks or other mechanical handling equipment are used, racking should be securely fixed to the floor;
- Racking should have securely fixed to it a **clear unambiguous notice stating its maximum load together with any necessary specified load configurations**. See the SEMA publication "*Recommended practice for the use of static racking*";
- The limitations indicated in the maximum load notice should never be exceeded;
- Racking should never be altered, for example by welding, nor components removed without first consulting the manufacturer.

## Racking Stability

Where racks are subjected to superimposed loads, plus horizontal forces from loading and unloading, the minimum requirements for floor fixing should be:

- Floor fix uprights adjacent to aisles and gangways, where the height/depth ratio does not exceed 6:1;
- Floor fix all uprights, where the height/depth ratio exceeds 6:1 but does not exceed 10:1.

## Protection of Racking

Where racking is likely to be struck by lift trucks and other vehicles, it should be protected. Renewable column guards or guide rails should be used to prevent the truck getting too close to the main structure. Corner uprights are especially at risk and should be carefully protected and painted in a conspicuous colour.

## Racking Maintenance

In general, racking is manufactured from relatively lightweight materials and, as a consequence, there is a limit to the amount of abuse it can withstand. The skill of lift truck operators has a great bearing on the amount of damage

likely to be caused. Any damage to racking will reduce its load carrying capacity. The greater the damage, the less its strength will be, until it will eventually collapse, even when supporting its normal working load.

To ensure that a racking installation continues to be serviceable and safe it is recommended that:

- Regular planned inspections of racking are carried out to identify and determine the extent of any damage and any necessary remedial action to be taken, and;
- Staff are encouraged to report any damage, however minor, so that its effect on safety can be assessed;
- The contents of the maximum load notice be strictly adhered to, and;
- The racking manufacturer be contacted for advice if there is any uncertainty as to the integrity of the racking system;
- A logbook should be kept for recording inspections, damage and repairs.