

Guidance for Lifting Raised Floors

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The purpose of a raised floor in a data centre is to provide a plenum air supply for rack cooling.

Floor loading can be as much as 1000kg per rack, and the floor is designed to support this load when properly managed. The following guidelines are to assist in the production of safe methods of work, minimising risks to persons and equipment.

Risks

- Too many floor tiles lifted will lessen the plenum air pressure and may result in inadequate cooled air supply to equipment racks.
- Unprotected holes in the floor may lead to a trip or fall accident.
- Supporting legs may get damaged, reducing their ability to support the load.
- The tile immediately behind a fan door (e.g. Trox) supports the weight of the door when opened (up to 120kg). A tile removed behind a heavy fan door, may result in the door being pulled off its hinges if it is accidentally opened over the void.
- Using inappropriate tools or methods to lift a tile, e.g. screwdriver etc, will damage the tile.
- Sub-floor services may get damaged, such as leak detection cables, chilled water pipework, fire detection and suppression systems.

Basic Rules

- Tiles may only be lifted using an appropriate suction type tile lifter.
- A maximum of two tiles may be lifted at a time. Exceptions must be agreed with the Computing dept prior to works commencing, and managed appropriately.
- Tiles must be replaced as soon as possible if not required to be open for immediate works.
- Exposed floor void must not be left unattended unless clearly fenced off.
- Tiles must not be removed from the front and back of the same rack at the same time.
- If a tile is removed behind a fan cooled rack, the rack door MUST NOT be opened. Tape the door shut as a reminder.
- Exposed floor supports must be treated carefully. Take steps to avoid any impact to the support legs, e.g. which may cause it's adhesive base contact with the floor to become weakened.
- Concerns with the safety of the flooring, or observed damages, must be reported immediately to the Computing dept.
- Tiles must not be removed from under a rack unless the load of the affected portion of the rack is otherwise supported.
- Grille tiles must be replaced in the same position they were found, and in the same orientation.
- Baffles in the grille tiles must not be adjusted without permission.
- Care must be taken to avoid any impact or damage to the sub-floor services, such as leak detection cables, chilled water pipework, fire detection and suppression systems etc.
- NO POWER OR DATA CABLING IS TO BE RUN UNDER THE RAISED FLOOR.