



Ken Koty

## Ken's Korner

### CLEANING A DATA CENTER RAISED FLOOR

#### Beware Dirty Floors

In most cases, a data center's under floor is also its air plenum. Not cleaning beneath a raised floor can result in contaminants being drawn into sensitive computer equipment, which can cause overheating and shorten their life.

Dirt can plug up perforated air tiles reducing the output as well as A/C filters and cooling coils. It can get into the cooling vents on the individual pieces of equipment within the server cabinets which will lessen their ability to cool themselves. Over time the accumulation of dust and dirt within electronic equipment will lead to overheating and failure. Keeping your data center clean, both above and below the raised floor not only improves its aesthetics, and energy efficiency, but also uptime.

Under floor contaminants will also contribute to dirtier environment throughout the raised floor area as the debris will be circulated throughout your data center. This will also lead to more frequent cleaning of cooling coils in your CRAC/CRAH units and replacement of filters if you want to maintain cooling capacity. Note: while cleaning under the raised floor look for any black rubber dust in front of the A/C units which can be a sign of misaligned blower belts. Not only will the misaligned belt contribute contaminants into the under floor plenum, but it is also an indication of possible future problems if the belts aren't replaced and realigned.

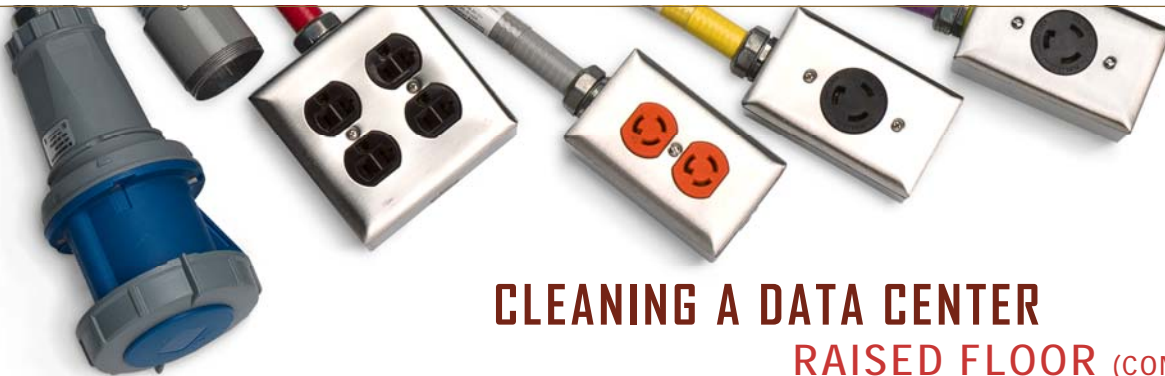
#### Cleaning Tips

- Always vacuum the floor prior to moping. Never use a dry mop; it will push dirt into the perforated tiles cracks and openings. If allowed to collect in the perforated tiles, the dust and dirt will reduce airflow through the tile openings, starving important cool air from key electrical equipment. If the dirt is pushed through the perforations, it will circulate back into the air and collect on equipment throughout the data center.
- When cleaning under raised floor be sure not to remove too many floor tiles at one time. This can cause a drop in static pressure under the raised floor and resulting in equipment overheating in other areas of the data center raised floor environment.
- Don't limit your cleaning to the floor, prior to cleaning the raised floor, clean the server racks and cabinets first, starting from the top of the room and work your way down. Dust the tops of the racks first using a vacuum with a HEPA filter.
- Take steps to limit or eliminate dirt and debris from even entering the data center. First place sticky mats at all entrances to the data center, and utilize a staging area for unpacking servers prior to bringing them into the clean area. Limit the introduction of contaminants from entering the data center and you'll find keeping a data center clean is a much easier job.
- When cleaning perforated tiles use a vacuum cleaner with a good HEPA filter to be sure all the dirt that gets trapped in them is removed and not just blown back into the room.
- The raised floor should be cleaned quarterly and the under floor should be cleaned as needed, at least once a year.

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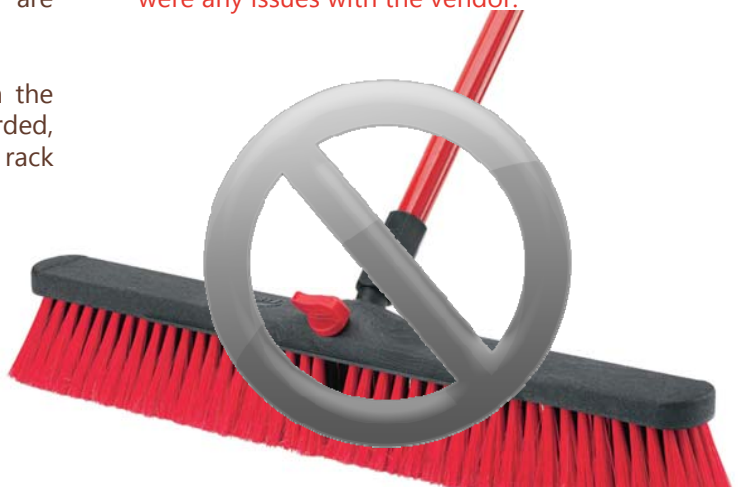
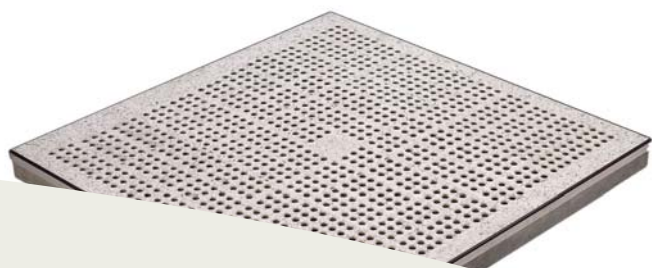
## CLEANING A DATA CENTER RAISED FLOOR (CON'T)

### Cleaning Tools

- ❑ Never use a broom or dry mop, this only pushes contaminants around and often leaves them suspended in the air, only to settle on another spot on the floor.
- ❑ Mops and wiping cloths should be made of low lint material designed to be used in clean area environments. The mops should be used only in the data center clean areas, don't use mops that have been previously used outside the computer room.
- ❑ Good vacuum cleaners with HEPA filter systems. These vacuum cleaners should be dedicated for cleaning the data center only.
- ❑ When using power scrubbing equipment on the raised floor tiles make sure you are plugging them into maintenance outlets only. Only use low speed scrubbers on the raised floor; the higher the speed the greater the chance of creating airborne particles and you don't want to risk the scrubbing equipment bumping into racks and cabinets.
- ❑ When using cleaning chemicals, be sure they are approved for the data center environment.
- ❑ All attachments and tools utilized for cleaning in the data center should be non-conductive, and if corded, only plugged into maintenance outlets not empty rack PDU outlets.

### Cleaning Staff

- ❑ When personnel clean under the raised floor they should be properly trained and made aware that they must be very careful when cleaning around power and communication cables. Moving or pulling on these cables can cause an outage.
- ❑ If your people are properly trained they can do the cleaning. Be sure they are properly supervised during the process.
- ❑ If using an outside cleaning service, ADCCP (Association of Data Center Cleaning Professionals) requires that all certified data center cleaning vendors must demonstrate that their cleaning processes comply with accepted data center cleaning standards.
- ❑ ADCCP also requires that all certified data center cleaning vendors demonstrate they have appropriate and minimum insurance coverage in accordance with accepted industry standards.
- ❑ If you decide to use an outside vendor ask for references and be sure to call them and inquire if there were any issues with the vendor.



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Ken Koty, former data center facilities manager with over 30 years of hands-on experience shares management practices that made him a 12 year award recipient for continuous uptime from the Uptime Institute. PDU Cables does not guarantee the results of outcomes by using information contained in this document.