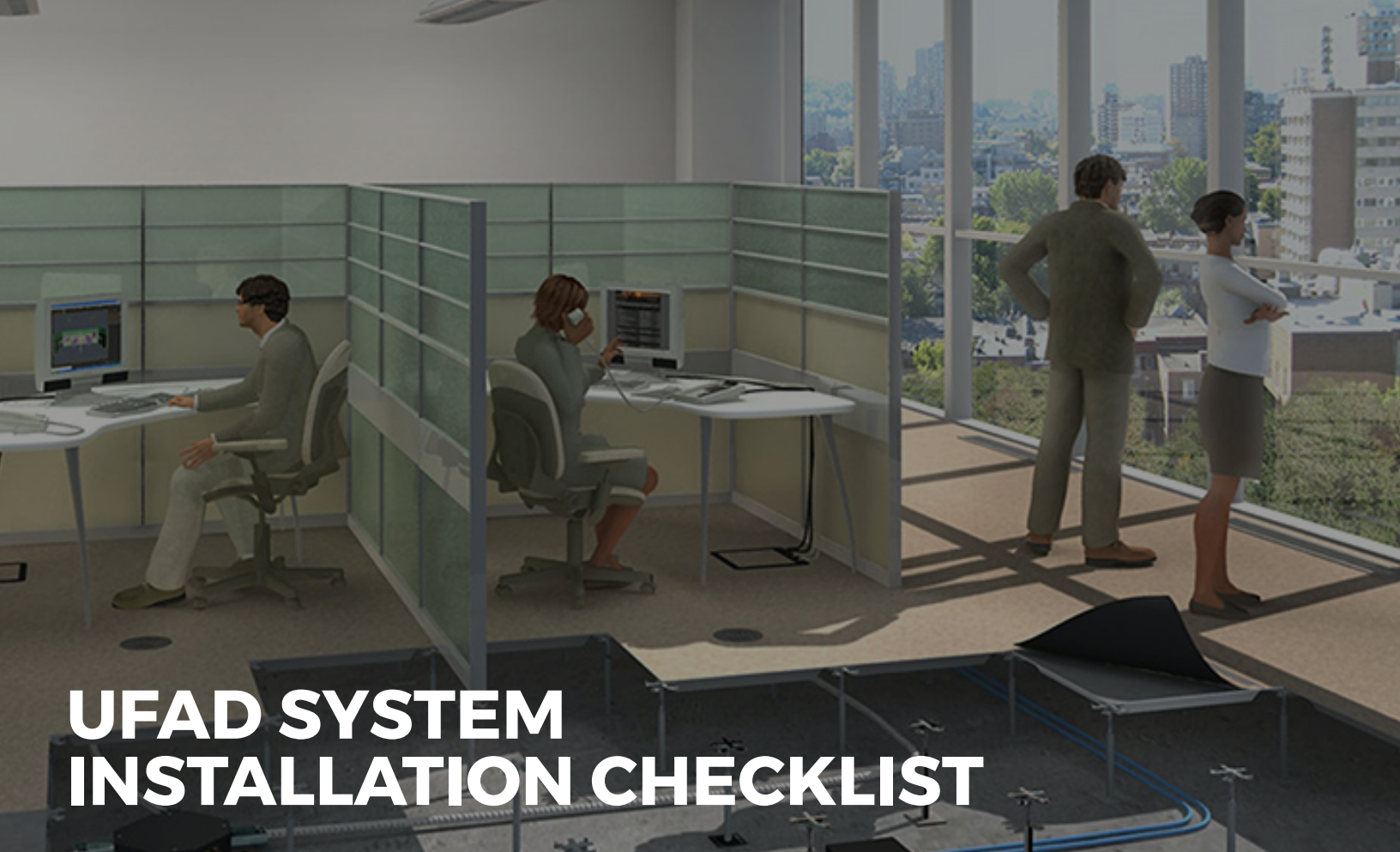




UFAD SYSTEM INSTALLATION CHECKLIST



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There are two critical phases of work you must complete before installing your UFAD system. Failure to properly follow these steps can not only hugely compromise the effectiveness of your air flow, but also you and your building's health. The first phase occurs before RAF installation has even begun. This step is primarily about laying down the ducts and sealing them.

The second phase happens after the floors are installed. It's primarily focused on checking that the system is performing properly, and that there are no issues with the floors and/or walls.

LEGEND

UFAD	Underfloor Air Distribution
RAF	Raised Access Floor
VOC	Volatile Organic Compound
VFD	Variable Frequency Drive
AHU	Air Handling Unit
RA	Return Air
TI	Tenant Improvement

UFAD SYSTEM INSTALLATION CHECKLIST

Before RAF Installation Begins

1. Sealing Process

- ☐ All drywall, both walls and columns, need to be sealed to the slab. This is done by using a durable, resilient, low VOC emitting caulk; with a Class A fire rating suitable for application in an environmental airway. In order to make inspection easier, use colored caulking as opposed to white or clear.
- ☐ All electrical conduits that end in the subfloor must be sealed both at the drywall and in the conduit around the wires.
- ☐ Larger conduits should be sealed with a removable sealing product.
- ☐ Seal all vertical seams in drywall, including corners, below the floor.
- ☐ Seal all four sides of duct penetrations, particularly under the duct where it leaves a shaft.
- ☐ Look for and seal any through-slab, through-wall, and any other penetrations. ***If you make a hole, seal that hole, now.***

2. Inspection

- ☐ Check your ducts to ensure that air is exiting the duct at between 2000-3000 feet/min. and travels no more than 50 ft. to the furthest point of delivery for cooling air.
- ☐ Look for major blockages in the under floor supply airway such as separating walls. Be sure they do not block air flow to the perimeter.
- ☐ Check that all materials used under the floor are suitable for use in an environmental airway.
- ☐ Use caution with air flow passages – check air pressure drop calculation at full flow to ensure proper air flow, consider the impact of temperature rise, check wiring and air duct crossing passages for leaks.
- ☐ Check the wiring between floor boxes and thermostats.
- ☐ Make sure that if two or more control dampers (or VFD's) control air pressure in a large zone that you use the same pressure reference or average the pressure references.

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After RAF Installation Has Been Completed

1. Sealing

- ☐ Check for and seal any gaps around the edge of the floor. Carpet and cove molding can work if the gaps are tight; if not, caulk joints.
- ☐ Be sure to seal all holes through the floor in walls before they receive drywall. These must be sealed from the top. Afterwards, conduct a thorough quality control check.
- ☐ Seal around all floor boxes that do not sit on top of the carpet.

2. Inspection

- ☐ Gaps between floor panels are kept to a minimum (3-4 business cards max).
- ☐ Ensure that no air is in the walls. Check for air aspiration from the thermostat. If air is leaking, seal the duct at the floor and use insulated thermostat sub-base.
- ☐ Be sure that the floor pressure reference is referring to the occupied space, and not the outside atmosphere.
- ☐ Make sure that the high pressure reference under the floor isn't impacted by velocity effects.
- ☐ Locate low static pressure space references in locations not impacted by localized static pressure changes. Make sure the low reference is in a wide open area, not a closet.
- ☐ Verify RA static pressure loss is very low (.02inwc) during system balancing and balance RA to correct quantities per floor.
- ☐ Verify that the engineer's operating sequence is followed on installed equipment.
- ☐ If different design/construction teams are used from the building shell to the TI, be sure to have the Mechanical Engineer review TI plans for system problems.

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After RAF Installation Has Been Completed

3. Implementation

- ☐ Floors are installed in compliance with local seismic requirements.
- ☐ Make sure return air bypass is used at the AHU or another method of controlling humidity.
- ☐ Implement a strategy to reset the temperature in core areas with low load situations.
- ☐ Place thermostats away from exterior walls whenever possible.
- ☐ Minimize penetrations in voice-data-power boxes. Don't remove unneeded knockout plates.
- ☐ Leave protective plastic covers on diffusers during the construction process.
- ☐ Keep track of disconnected power and control cables, and protect them from damage. When pulling them through conduits, carefully grip the cable, not the molex plug.
- ☐ Be sure that you connect, at most, ten devices to one power supply. Only run control wire between power zones.
- ☐ Don't over tighten diffuser screws.
- ☐ Face air valve inlets away from supply air source. As a general rule, all air valves should all face the same cardinal direction for best acoustic isolation.
- ☐ Ensure return air path is clear and has very low static pressure loss. Keep return loss no higher than 0.02 if possible. Velocity through return openings in ceilings should be 100 ft./min. and velocity through walls should be 200 ft./min. The building pressure should always be higher and should be kept in the .02-.05inwc range always.
- ☐ Remove UFAD fan terminal filters after installing the system.