

Indoor airPLUS Technical Bulletin

Duct Protection During Construction



An ounce of prevention is worth a pound of cure when it comes to keeping the duct system debris-free.

New construction projects generate large amounts of dust and particulates from activities like sawing, sanding, and installing drywall. These airborne particulates can travel through the air and be drawn into the ducts and mechanical equipment of the home's heating, ventilation, and air conditioning (HVAC) system, even if the system is not running. Construction debris including sawdust, scraps of materials, carpet fibers, nails, screws, and construction trash can easily find their way into open floor ducts and register boots. Flex ducts with their grooved interior surfaces are especially prone to harbor dust and dirt during the construction process.

Once inside the ducts, particulates and debris can reduce the efficiency and equipment life of system components and can block airflow through the ducts. If allowed to remain in the ducts, particulates can be blown throughout the home over time or contribute to microbial growth or odors. Although this would negatively impact the indoor air quality for all occupants of the home, it is particularly serious for those who have allergies, respiratory problems (e.g., asthma, chronic obstructive pulmonary disease [COPD]), or cardiovascular issues.



Example of customized duct covering from the 2018 Indoor airPLUS Builder of the Year Winner, Fulton Homes

Keeping Construction Debris out of Ducts

Once the HVAC system is installed, begin preventive maintenance steps immediately.

If possible, avoid operating the HVAC system during construction to prevent air from being pulled into the system. It is critical not to run the HVAC system during work activities that create airborne dust. Although a fiberglass filter can be installed to keep large debris from entering the mechanical system, it does not prevent fine dust from getting into the mechanical equipment components or ducts.

After HVAC installation and before operation, seal the ends of all installed ducts including all register boots and intakes to keep the ducts clean until construction is completed (including installation of flooring, carpets, cabinetry, and finish carpentry). The duct openings can be covered with a commercial product designed for this purpose or with clear plastic wrap/plastic carpet protector secured with painters tape. Covers on any openings in floors should be clearly marked to prevent a tripping hazard.



How to Minimize Construction Debris in Ducts

- Maintain a clean job site to reduce the amount of dust and dirt that accumulates within the home. Vacuum each area of the home as construction work is completed.
- As part of the overall quality assurance/quality control (QA/QC) plan, ask the HVAC contractor to create a duct and equipment protection plan or indoor air quality management plan. It should define the methods that will be used to protect the ducts and reduce particulate accumulation in the HVAC system and methods for cleaning the ducts and air handling unit after construction.
- Clean the ducts and replace filters after construction completion. Inspect all new flexible ducts prior to installation to ensure they do not contain any oil or debris.

For more details and best practices related to duct covering visit the [Department of Energy's Building America Solution Center](#) for more information.