**What is HVAC Ductwork?**

The term [HVAC](https://www.wisegeek.com/what-is-hvac.htm) (heating, ventilation and air conditioning) [ductwork](https://www.wisegeek.com/what-is-ductwork.htm) describes any system of ductwork and vents used to channel and distribute air in a vehicle or structure. HVAC ductwork systems are used in spaces ranging from automobiles to residential homes to the largest construction sites, but all systems share certain common properties and all provide for the circulation of air. Ductwork can be made of a wide variety of materials, depending on the intended site of installation and characteristics of the HVAC system that it is designed to serve. All HVAC ductwork should be appropriately-sized, tightly sealed and securely mounted in order to operate safely and efficiently.

A simple residential system of HVAC ductwork consists of ducts that funnel air throughout a home from a centrally-located furnace. Additional ductwork is used to return air from one or more locations within a home to the furnace, after passing that air through a filter system. An air conditioning system will often be part of this loop, as will a humidity-control system, particularly in colder or drier climates.

Large structures employ systems of HVAC ductwork that are similar in principle but larger in scale. Large central air ducts carry air throughout buildings, and that air is distributed by [diffuser](https://www.wisegeek.com/what-is-a-diffuser.htm) vents as needed. Filter systems in large structures are larger as well but serve the same basic purpose. Very large structures may feature heating and cooling systems separated by zone or floor.

HVAC ductwork can be constructed of a variety of different materials. The most basic form of ductwork consists of simple galvanized metal held together with screws or fittings. Ductwork can be insulated, to minimize heat transfer and to guard against condensation, which is a particular problem when ductwork carrying very cold air needs to pass through a zone of warmer and more humid air. Ductwork is also available in vinyl and hybrid styles, which can be beneficial because the vinyl component is not vulnerable to rust and corrosion.

Large and small HVAC ductwork systems alike should be sized appropriately for the space that they will be serving. Systems that lack sufficient capacity place additional stress on the blower units that circulate air, and systems that are too large will not allow for adequate airflow because the blower will not move enough air through the system to reach every diffuser. All HVAC ductwork systems should be sealed properly to maintain pressure in the ductwork and should be mounted securely to minimize noise and vibration.

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