

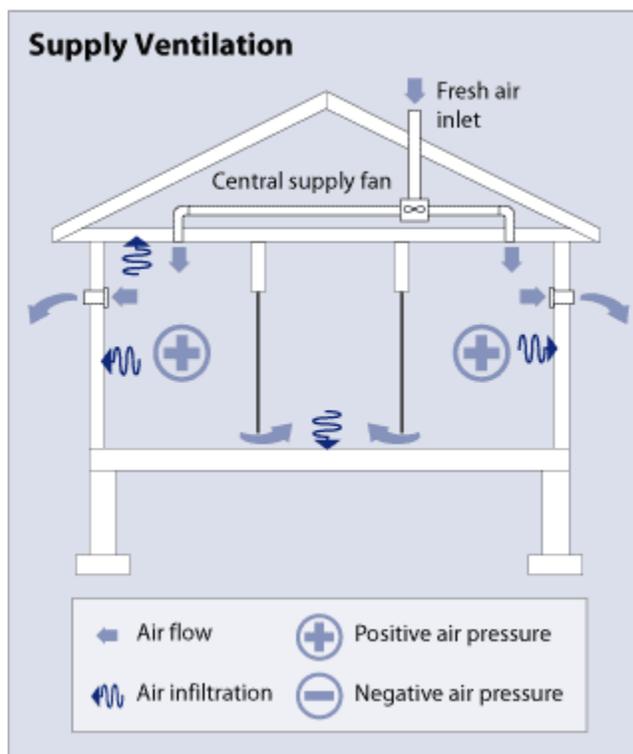
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U.S. Department of Energy - Energy Efficiency and Renewable Energy Energy Savers

Whole-House Supply Ventilation Systems

Supply ventilation systems work by pressurizing the building. They use a fan to force outside air into the building while air leaks out of the building through holes in the shell, bath and range fan ducts, and intentional vents (if any exist).

As with [exhaust ventilation systems](#), supply ventilation systems are relatively simple and inexpensive to install. A typical supply ventilation system has a fan and duct system that introduces fresh air into usually one—but preferably several—rooms of the home that residents occupy most often (e.g., bedrooms, living room). This system may include an adjustable window or wall vents in other rooms.



Supply ventilation systems allow better control of the air that enters the house than do exhaust ventilation systems. By pressurizing the house, supply ventilation systems discourage the entry of pollutants from outside the living space and prevent backdrafting of combustion gases from fireplaces and appliances. Supply ventilation also allows outdoor air introduced into the house to be filtered to remove pollen and dust or dehumidified to provide humidity control.

Supply ventilation systems work best in hot or mixed climates. Because they pressurize the house, supply ventilation systems have the potential to cause moisture problems in cold climates. In winter, the supply ventilation system causes warm interior air to leak through random openings in the exterior wall and ceiling. If the interior air is humid enough, some moisture may condense in the attic or cold outer parts of the exterior wall where it can promote mold, mildew, and decay.

Like exhaust ventilation systems, supply ventilation systems do not temper or remove moisture from the make-up air before it enters the house. Thus, they may contribute to higher heating and cooling costs compared with [energy recovery ventilation systems](#). Because air is introduced in the house at discrete locations, outdoor air may need to be mixed with indoor air before delivery to avoid cold air drafts in the winter. An in-line duct heater is another option, but it will increase operating costs.

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Reading List

- *Whole-House Ventilation* ([PDF 399 KB](#)). (December 2002). DOE/GO-102002-0778.
U.S. Department of Energy.

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