
WHY IS VENTILATION IMPORTANT?

A properly ventilated attic gives trapped heat an escape route. It may take a combination of soffit and ridge vents to do the job, but the result will improve overall home energy efficiency—and extend the life of roof shingles.

Attic ventilation is an important part of roofing. Proper attic ventilation extends the life of a roof and reduces problems because it minimizes the temperature differential between the attic and the air outside. Proper ventilation will remove moisture and heat from the attic. Trapped moisture and heat can raise energy costs, cause ice dams and damage roof system components as well as structural and personal items located inside the attic where temperatures can easily reach 150°F (65°C). Condensation that forms inside attics can be caused by the use of washing machines, dishwashers, bathtubs, showers and tumble dryers unless these items are properly ventilated through the roof. In some cases the condensation can be bad enough to be mistaken for a roof leak.

Here are some problems associated with an improperly ventilated attic space:

- Sumps between rafters (deck deflection) can happen after several years, or sometimes only a couple of years. A plywood roof deck can warp or deteriorate and become spongy and dangerous to walk on. This occurs because one side of plywood decking needs to be able to “breathe” by being exposed to circulating air. The adhesives used in the plywood can deteriorate, or dry rot can occur because of condensation
- Water vapor will condense first on anything metal inside the attic; this will eventually cause the metal to rust.

Heads can rust off nails. Metal plumbing straps or straps holding HVAC ducting can rust and break in two, causing the ducting to crash down on top of the ceiling joists or through a suspended ceiling. This problem is more common in humid climates

- In colder climates—generally where the average January temperature is 32°F (0°C) or colder—high inside humidity (40% or greater) combined with low outside temperatures can cause frost to form on the bottom of the roof deck. (See Dry Rot in the Glossary.)
- Insulation can trap moisture, which will reduce the R-value of the insulation and create a nice environment for the propagation of certain molds, spores and fungi, which can also cause problems. (See Dry Rot in the Glossary.)
- There is also the problem of mildew, which can both do damage and cause health problems
- The roof system itself will deteriorate prematurely
- Cooling units will need to be serviced or replaced prematurely because of excessive use
- Ice dams are the result of melting snow continually refreezing at the roof perimeter and then backing up under the shingles and causing leaks. Proper ventilation used in conjunction with heavy insulation and an air barrier can create a Cold Roof Assembly, which will help eliminate ice dams

There are many types of attic vents available today. There are static vents, power vents, ridge vents, turbine vents, soffit/cornice vents, gable vents, starter vents and cupola vents. These all come in a wide variety of sizes, styles and shapes. Some will ventilate better than others depending on the roof configuration, attic size, climate, etc.