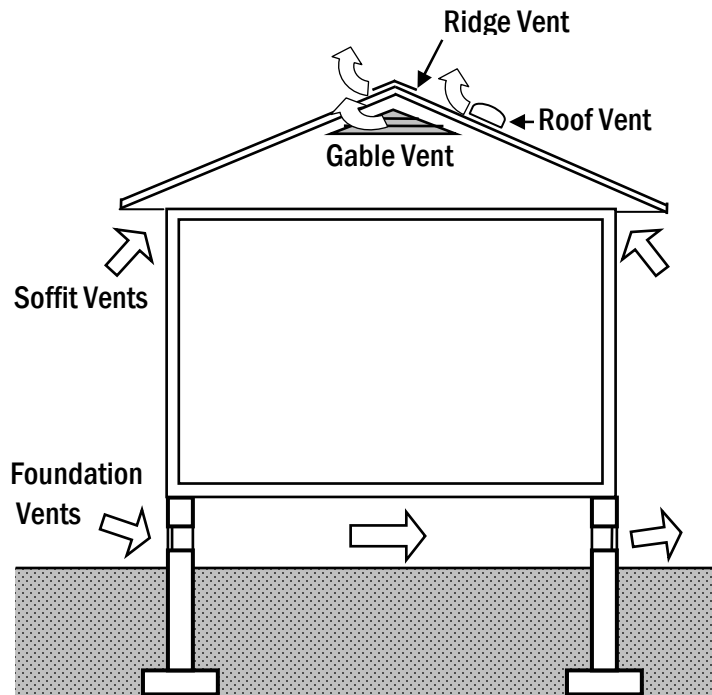


VAPOR BARRIERS AND VENTILATION

Together, the roofing, exterior, and foundation systems deal with water that comes from the sky above or the ground below. But moisture can infiltrate by another way...as vapor in the air. Humidity, or water in its gaseous state, is present in all but the driest of climates. Given the right circumstances, it can contribute to the same damaging effects that result from leaky roofs and basements (primarily mold and rot). Let's take a look at what can happen, and what we can do about it.

Scientifically speaking, the ability of evaporated water to remain vapor is dependant upon the thermal energy present (temperature). As the atmosphere cools, the energy decreases, and the relative humidity rises. Once the point of saturation (*dewpoint*) is met, any decrease in thermal energy will cause vapor to condense.



In basic terms, warm humid air will shed moisture as it cools. In structures, we deal with this phenomenon through the use of moisture barriers and ventilation.

Attic. Most attics are unheated, and can be quite cold in the winter. A layer of insulation usually separates the conditioned air inside the home from the unconditioned attic air. In northern climates, a vapor barrier should be installed on the warm side of the insulation. This keeps the vapor that is present in the warm house air from penetrating into the insulation and condensing as it cools. Such action if allowed would not only reduce the effectiveness of the insulation, but would lead to moisture becoming trapped in the building structure causing rot, mold and peeling paint. So you will want to be sure to maintain this moisture barrier should you do any remodeling or ceiling repair work.

Moisture that finds its way into the attic through other ways can escape naturally provided there is good attic ventilation. A well ventilated attic is also cooler in the