Guide to Durable Attics

Keeping attics dry and well-ventilated will help ensure durability and avoid moisture problems, while also lowering heating and cooling costs.

Moisture and Ventilation

The number one enemy facing an attic is moisture. It can enter from any direction – above, below, or from the side – and it can warp and damage the roof, render insulation useless, and create moisture problems in the main living areas of the house.

Attic moisture intrusion is often closely linked to the next biggest problem facing the attic: improper ventilation. Avoiding moisture intrusion and ensuring proper ventilation are the keys to a durable attic. You can ensure you have a durable attic by following the steps outlined in this guide either during the initial (new) construction or as an energy-efficiency upgrade to an older home.

How Does Moisture Enter the Attic?

Moisture can enter the attic through various openings:

- Leaks in the roof or improperly installed flashing around chimneys and other roof penetrations
- Water vapor entering the attic from inside or outside the home, without proper ventilation for it to escape
- Ice dams in roof gutters causing water to seep under shingles and leak into the house

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A dry and well-ventilated attic will help avoid moisture problems and lower heating and cooling costs.

Look for Signs of Water Intrusion

The following are signs of possible water intrusion:

- Warped or rotted wood soffit (eave) panels or its underlying horizontal (fascia) board
- Bubbled paint at fascia boards or soffits
- Worn or warped shingles at roof edges
- Wet insulation in the attic, especially near the eaves
- Mold or mildew on attic surfaces
- Warped or rotting wood in the attic

To determine whether moisture is entering your attic, schedule a visit by a home performance contractor. To find one near you, check with the Building Performance Institute. See *Further Reading* at the end of this fact sheet for more information.

Vent Outside!

Venting to the attic is a major source of moisture and is a bad practice. It can lead to mold and moisture in the attic, and can negatively affect home health (and may violate local building codes).Yet it is quite common to find houses in which kitchen ranges, bathroom exhaust fans, and dryers vent their moist air into the attic rather than outside where it belongs. Correct this situation immediately if you find it in your home. Contact a professional contractor as needed.

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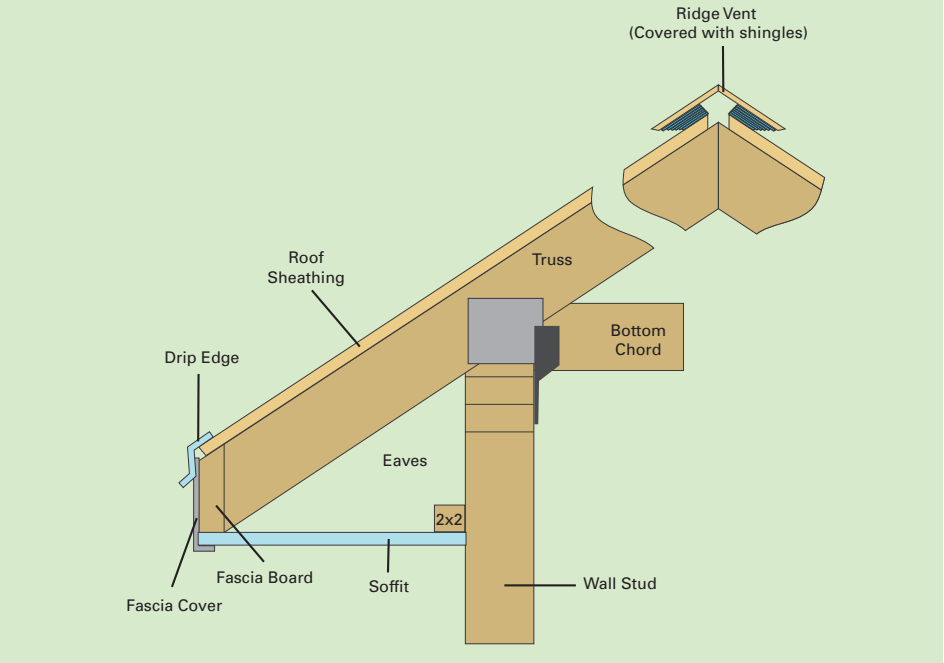
Roof and Attic Components



Steps to a Durable Attic

Follow the steps outlined below to help you on your way to a durable attic.

Ensure a good roof. Although proper construction from the beginning will help protect attics from rain, snow, and ice, weatherproofing after construction can also help. Flashing, a type of weatherproofing in walls and roofs, uses waterproof material like sheet metal to fill spaces, stop water penetration, and prevent leaks.

Seal air gaps or leaks into the attic. Warm, humid air from kitchens, bathrooms, and dryers threatens attic durability. Many homes lack sufficient air sealing between the top floor and attic space that can prevent warm, humid air from kitchens, bathrooms, and dryers from accessing the attic. Check for leaks or gaps around ductwork, wires, plumbing, lighting fixtures, and around attic entryways. See the *DOE Guide to Air Sealing* under *Further Reading* for more information.

Properly insulate the attic, including the eaves. Inadequate attic insulation allows heat to escape in the colder months, undermining attic durability and increasing home heating bills. See the *DOE Guide to Home Insulation* under *Further Reading* for more information.

Ventilate the attic. Improper attic ventilation allows moisture to build up and can cause mold, ruin insulation, and damage wood. Replacing the panels covering the underside of roof eaves (soffits) with ridged vents allows air to enter beneath the roof overhang. Pair these with a ridge vent for increased effectiveness.

Install ridge baffles. Baffles or rafter vents are partitions stapled to the attic rafters near the floor. They ventilate by letting air and water that has entered the soffit vent to drain. Baffles also keep blanket or loose fill insulation away from eaves where it could get wet or dirty.

Further Reading

A Brief Guide to Mold, Moisture, and Your Home, U.S. Environmental Protection Agency
www.epa.gov/mold/moldguide.html

Building Performance Institute
www.bpi.org

DOE Guide to Air Sealing
www.energysavers.gov/publications

DOE Guide to Home Insulation
www.energysavers.gov/publications

ToolBase Technology Inventory (Search "Roof")
www.toolbase.org/techinventory

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