

Basement Storm Doors and Attic Ventilation - An Odd Combination

Here in Quick Views, we like to mash odd things together. But if you look at a house as a whole system, one job it has is to keep water & moisture out. While another job is to let it breathe and still another is to allow access to those odd areas such as basements (as opposed to living rooms). So, to that end, here are two areas that fill that criteria.

Basement Storm Entry Doors “Bilco” style – what are we looking for?

- While Bilco is the name of a fine company that makes basement access doors, it seems like everybody calls any basement door a *Bilco* door. I just wanted to make that distinction, Bilco is a specific company not a component name.
- Inspect the area around the door for obvious signs of leakage, such as dark areas on the concrete foundation and water in the basement.
- Doors should have safety mechanisms in place. They can be springs or pistons to offset the weight of the heavy doors. They also prevent the door from slamming shut. One person should be able to open and safely close it. Without the safety measures, the heavy doors cause profoundly serious damage to fingers, hands, and heads.
- A clean header channel at the top of the door.
- Close the door and inspect it from the inside. If there are large gaps of light coming through the door, or sides ensure that there are no obstructions, such as pebbles, preventing the door from seating properly or gaps that may need sealing,
- Can the door and housing shed the rain properly?
- How about the siding of the home around the unit? Are the bricks and mortar intact? How about the vinyl or wood siding? Is it flashed and sealed correctly?
- The stairs should be in satisfactory condition and clear of all debris. These stair wells are not for extra storage.
- Oh, yes, is the stair well dry?



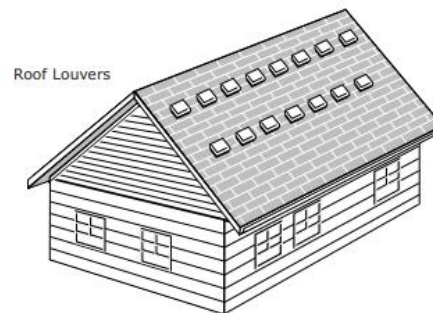
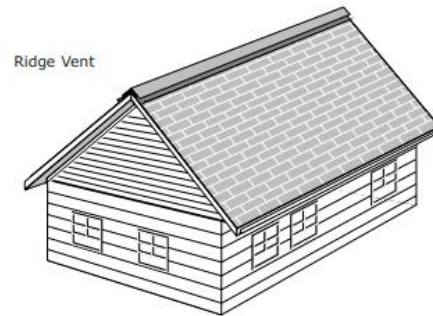
Attic Ventilation

We are not code enforcers. We are not roofers, nor are we Home Energy auditors. But, we do need to understand how attic ventilation works, or does not work. This means that the concepts of how much ventilation is proper may be outside our scope, we should appreciate how it is calculated and what are the effective methods used or not used.

“The U.S. Federal Housing authority recommends a minimum of at least 1 square foot of attic ventilation (evenly split between intake and exhaust) for every 300 square feet of attic floor space.”

Typical Venting devices – there are two general categories, passive (Static) and power.

- Passive/Static: Windows, Ridge Vents, Box or Dome (mushroom) Vents, Gable End Vents, Soffit Vents
- Power: Temperature controlled Power Vents



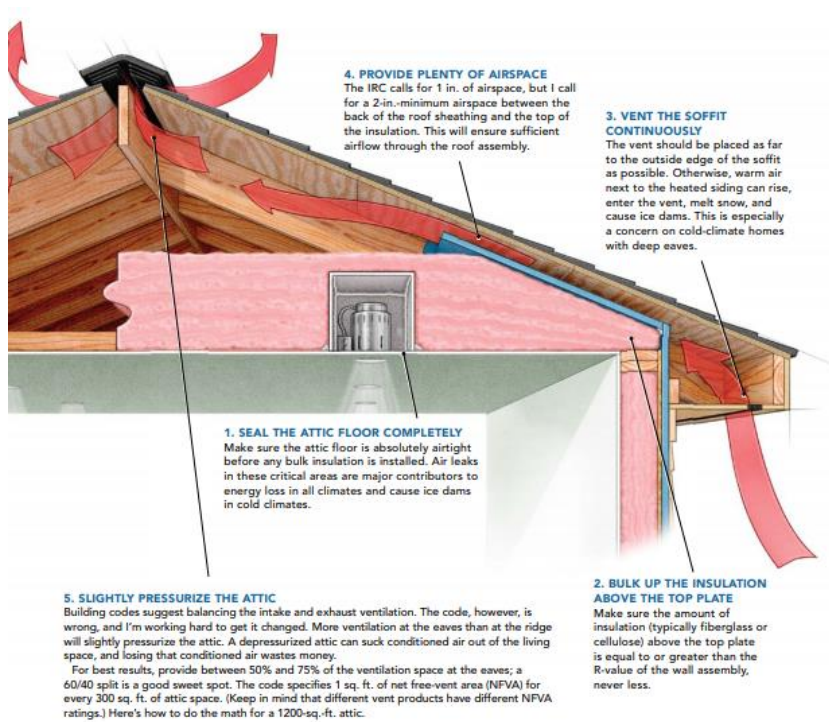
Fifteen roof louvers are required to equal the exhaust venting of 42 linear feet of ridge vent. This clearly demonstrates the performance and aesthetic advantages of ridge vents.

Liberal edited from Fine Home Building (FHB) article found on Internet (see sources next page)

- In a cold climate, the primary purpose of ventilation is to maintain a cold roof temperature to avoid ice dams created by melting snow and to vent any moisture that moves from the conditioned living space to the attic.
- In a hot climate, the primary purpose of ventilation is to expel solar-heated hot air from the attic or roof to reduce the building's cooling load and to relieve the strain on air-conditioning systems.
- If you choose to vent the roof deck, then be serious about it and really vent it. The code calls for a minimum of 1 in. of airspace between the top of the insulation and the back of the roof sheathing. That's not enough. For best performance, the airspace in the vent chute should be a minimum of 2 in. deep.
- Seal the attic floor. The success of this approach hinges on the ceiling of the top level of the house being absolutely airtight before any insulation is installed. (See "Attic Insulation Upgrade" in FHB #200.)
- It's also important to ensure that there isn't anything in the attic except lots of insulation and air—not the Christmas decorations... nothing. Attic space can be used for storage, but only if you build an elevated platform above the insulation. Otherwise, the insulation gets compressed or kicked around, which diminishes its R-value.
- Attic-access hatches are notoriously leaky

The insulation/ventilation connection.

- Efficient insulation increases the need for effective ventilation.
- Because heavier insulation absorbs and holds more heat. That means its less likely overnight cooling can remove heat that builds up in an attic during a prolonged period of hot, sunny weather.
- The solution to this dilemma isn't to reduce the insulation in an attic. That would only create problems at other times of the year. Instead, the goal is to design an attic ventilation system that effectively compensates for the additional heat gain produced by the high levels of insulation. In short, effective attic ventilation also helps cool attic insulation.
- **Bernoulli Effect** A phenomenon whereby low pressure resulting from wind passing over a structure or object creates a pulling or lifting action
 - External Wind Baffle The built-in wing or lip on a ridge vent that deflects wind up and over the vent creating the Bernoulli Effect that enhances airflow performance by pulling or lifting the air out of the attic. It also deflects weather elements over the vent away from the attic.



Sources:

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