AIR VENT INC.

VENTILATION VIEWS

ISSUE FOCUS:
Intake Ventilation

News, opinions, ideas and technical advice from the ventilation specialists at Air Vent

Pro Flow™ Vented Drip Edge

THE INTAKE ANSWER FOR HOMES WITHOUT SOFFIT

Roofing professionals understand the importance of providing proper intake ventilation. But sometimes it's easier said than done. Especially when we're talking about homes with little or no soffit.

Air Vent's new Pro Flow™ Vented Drip Edge is an easy-to-install vent for such challenging intake applications, whether it's new construction or retrofit.

This totally redesigned vent incorporates feedback from contractors who field-tested the product during the research and design stages. Key features include:

- Made of .031 sturdy roll-formed aluminum – more than 50% thicker than most other vented drip edge
- Improved thickness adds rigidity to the 10´ pieces and helps them lay straight for nailing
- 2˝ fascia wrap, which is more than double most other vents
- 6 1/2˝ shingle underlay for maximum flashing surface
- Preformed to a 6/12 roof pitch making it easier to install and adjust to other roof pitches
- Provides 9 square inches of net free area per linear foot – which balances with ridge vents
- Suitable intake vent for roof pitches 3/12 to 12/12

PRO FLOW™ VENTED DRIP EDGE INSTALLATION TIPS:

- ❑ Pro Flow Vented Drip Edge works best without a gutter.
- ❑ If a gutter will be used, position Pro Flow so that the louver section on the vent (the vent openings) is always below the top off fascia.
- ❑ There must be a 1" to 1/4˝ space between the Pro Flow louver section and the top of the gutter to minimize blockage due to gutter backup.
- ❑ It's always a good idea to remind homeowners that gutters should be cleaned out regularly.

Refer to the printed installation instructions for new construction and existing roof applications.

Got intake?

Ever wonder what can happen if there isn't enough intake ventilation? The potential problems vary with the type of exhaust vent.

With a baffled ridge vent, for example, insufficient intake can cause the ridge vent to pull intake air from itself. That means it could pull in weather. With a power attic ventilator, improper intake could cause premature motor burnout and could force the power vent to pull its source of intake air from the living space in the home.

Lack of intake ventilation is the number one cause of attic ventilation callbacks. Always check if there is enough intake ventilation. Please see the other stories inside this Ventilation Views for intake tips.

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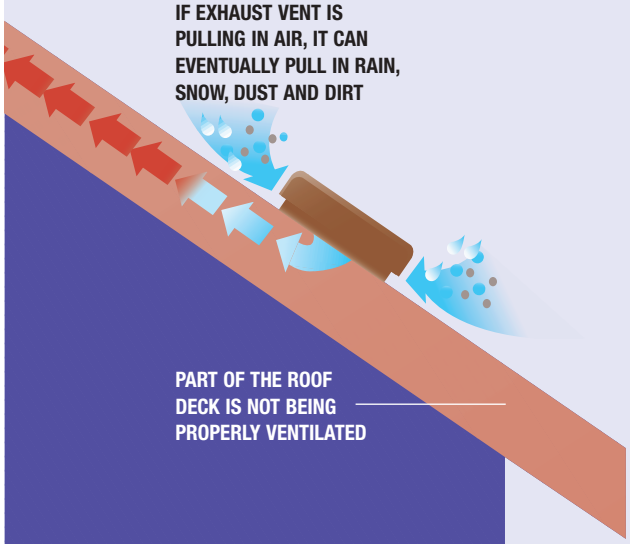
Read these *Tales from the Attic* – details inside...

Frequently asked Intake questions



1 *Can I use exhaust vents low on the roof for intake?*

It's potentially a problem that could lead to weather infiltration and could short-circuit the proper airflow of the ventilation system.

• ***Weather infiltration.*** An exhaust vent placed low on the roof could lead to weather infiltration because the vent is not designed to be an intake vent.

If the exhaust vent is pulling in air, it can eventually pull in rain, snow, dust and dirt. Furthermore, an exhaust vent low on the roof will receive an increased amount of watershed from higher points on the roof that it's not designed to handle.

• ***Short-circuiting.*** Proper airflow travels from low at the soffit/undereave to high near the peak of the roof. Placing an exhaust vent low on the roof interrupts this airflow because air will always follow the path of least resistance. Depending if intake vents are in place in the soffit, the path of least resistance may be between the exhaust vents low on the roof to the exhaust vents high on the roof; or between the soffit vents and the exhaust vents low on the roof. Either way, part of the roof deck is not being properly ventilated.

CONTINUED INSIDE

For optimum intake, go with continuous soffit

When it comes to intake ventilation, continuous soffit vents are the best choice. They provide a continuous flow of cool, dry air low in the attic through each rafter. Continuous soffit vents are available in PVC or aluminum for either new construction or retrofit applications. They provide 9 square inches of net free area per linear foot. That's exactly half the net free area of a typical ridge vent, which means they easily balance with a ridge vent. Installing continuous soffit vent on both sides of a house balances them with the ridge vent. And that's always the goal: a balanced ventilation system with half intake and half exhaust.

Undereave Vents Work Just As Well

Using continuous soffit vents in a remodeling application is sometimes impractical. Rectangular undereave vents are an excellent alternative. Generally, undereave vents are available in a variety of colors in three sizes:

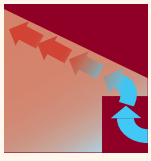
- 16″ x 8″ (56 square inches of net free area)
- 16″ x 6″ (42″ net free area) and
- 16″ x 4″ (28″ net free area).

For optimum undereave vent performance, install them between each rafter space or every 2´ to 4´ apart. This application will allow them to function just like continuous soffit vents – feeding air to the exhaust vents from all along the low part of the roof.

An intake ventilation **Checklist**

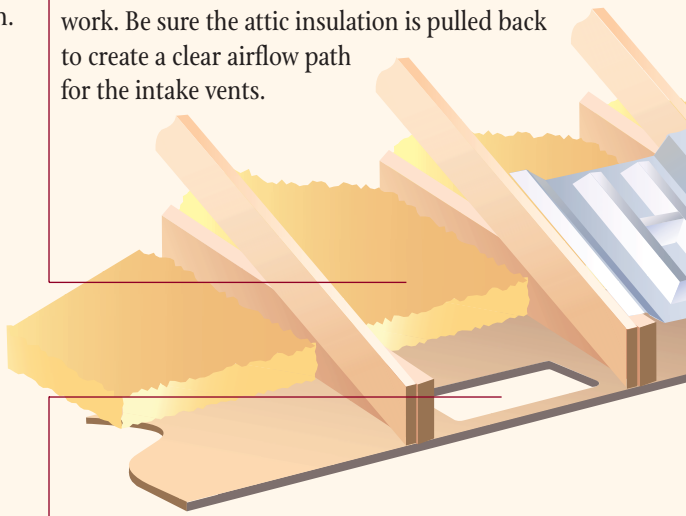
Unfortunately, intake ventilation is often the overlooked half of proper attic ventilation. That's a big mistake because it's the most important half. Most of the problems you'll experience with attic ventilation callbacks will be due to insufficient intake ventilation. Here are some tips for installing and specifying intake ventilation.

❑ ***Intake should match or exceed exhaust ventilation.*** Always install at least half, if not more, of the total required net free area needed for proper ventilation in the intake area. If the house calls for a total of 1,000 square inches of net free area, half of that – or 500 square inches – must be intake ventilation.



❑ ***If there is a soffit, use it.*** If the house has a soffit, use it to install the intake vents, whether they are continuous soffit vents or rectangular undereave vents. The soffit provides the most protection against possible weather infiltration. If the house doesn't have a soffit, use a vented drip edge style vent (see related story on page 1).

❑ ***Pull the insulation back.*** To work properly, intake vents need an unobstructed airflow path to feed the exhaust vents with cool, dry air. If the attic insulation is over the soffit, the intake vents can't work. Be sure the attic insulation is pulled back to create a clear airflow path for the intake vents.



❑ ***Go far out on the rafter tail.*** Position intake vents as far out on the rafter tail as possible. Doing this will provide an optimum airflow path from intake to exhaust. Furthermore, it will help prevent the intake vent from being blocked by the attic insulation.

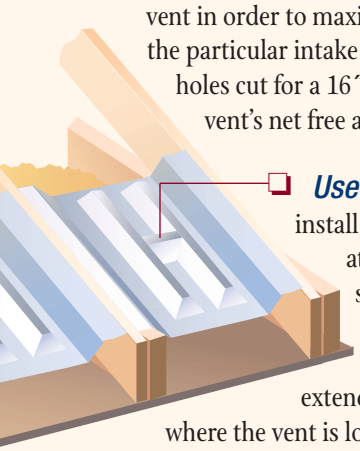
Frequently Asked Intake Questions

CONTINUED

2 *Can I use vented soffit panels for intake ventilation?*

Yes, but check with the manufacturer exactly how much net free area the soffit panels provide and be sure that the plywood is cut open accordingly. To properly balance with a typical ridge vent that provides 18 square inches of net free area per linear foot would require fully vented soffit panels with 6˝ NFA per square foot installed in an 18˝ overhang.

❑ ***Check for the right sized hole.*** The hole cut in the plywood should be properly sized for the intake vent in order to maximize the net free area specified for the particular intake vent. For example, two 4˝ round holes cut for a 16˝ x 8˝ undereave vent reduces the vent's net free area from 56 square inches to 25.



❑ ***Use insulation baffles.*** If necessary, install insulation baffles to ensure the attic insulation isn't blocking the soffit area. Place a baffle in every rafter bay. And check the placement of the baffle. If it extends further out into the soffit than where the vent is located, the insulation will push up against the baffle and block the vent.

❑ ***Look for debris and other blockages.*** Over time, intake vents can become clogged or blocked by dust, dirt and other debris. Or the homeowner may have painted them. Periodic inspection of the intake vents is very important.

3 *How much intake ventilation is needed?*

We recommend that the amount of intake net free area (NFA) always at least match – if not exceed – the amount of exhaust net free area.

- For example, 25 feet of ridge vent installed provides 450˝ exhaust NFA (based on an 18˝ NFA per foot ridge vent). That requires an equal amount of intake NFA:
  - **A.** 50 feet of continuous soffit venting (based on 9˝ NFA per foot)
  - **B.** 50 feet of vented drip edge (based on 9˝ NFA per foot)
  - **C.** 8 pieces of 16˝ x 8˝ undereave vents (based on 56˝ NFA per piece)
  - **D.** 11 pieces of 16˝ x 6˝ undereave vents (based on 42˝ NFA per piece)
  - **E.** 16 pieces of 16˝ x 4˝ undereave vents (based on 28˝ NFA per piece)

- If you want to calculate the amount of intake NFA needed based on attic square footage as your starting point, here's the formula. We'll assume a 900 square foot attic based on 1/150 (one square foot of NFA per 150 square feet of attic floor space. **Note:** Minimum code requirements call for 1/300 ratio, but it's been our experience that 1/150 provides optimum airflow for today's tighter remodeled and built homes.)

Step One: *Determine Overall NFA Needed by Dividing by 150.*
900 ÷ 150 = 6 square feet of NFA for the total attic space.

Step Two: *Balance the System by Dividing by 2.*
6 square feet of NFA ÷ 2 = 3 square feet of intake NFA and 3 square feet of exhaust NFA.

Step Three: *Convert from square feet to square inches.*
Since attic ventilation products are specified in square inches we'll convert by multiplying by 144 (the number of square inches in a square foot).
3 square feet of NFA x 144 = 432 square inches of intake NFA and 432 square inches of exhaust NFA.

Read these *Tales from the Attic*

Using a balanced attic ventilation system includes choosing the right exhaust vent. In *Tales from the Attic* you'll read some of the troubles roofing professionals nationwide have experienced with specific types of ridge vents. To get your free copy, complete and return the coupon or call 1-800-AIR-VENT.

❑ Yes! Air Vent, send me *Tales from the Attic.*

(Fill out and return this coupon or call 1-800-AIR-VENT.)

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Have you ever used ridge vents? ❑ Yes ❑ No If yes, what brands?

Comments...

To carry it one step further so that you can determine how many feet or pieces of a particular intake/exhaust vent you would need, here's what you do. Divide the vent's NFA into 432.

1. For example, continuous soffit vents provide 9 square inches NFA per linear foot. Dividing 9 into 432 = 48 feet of continuous soffit vent. Do the same thing for exhaust.

- **Determining intake for powered vents.** For power attic ventilators, take the CFM (cubic feet of airflow per minute) capacity of the fan and divide by 300. That determines the amount of intake necessary in order for the fan to operate properly.
  1. 1320 CFM ÷ 300 = 4.4 square feet of intake needed.
  2. Convert to square inches by multiplying by 144.
     - 4.4 x 144 = 634 square inches of intake NFA needed

For a free copy of Air Vent's attic ventilation calculator where we've done all the intake and exhaust vent calculations for you, call 1-800-AIR-VENT.

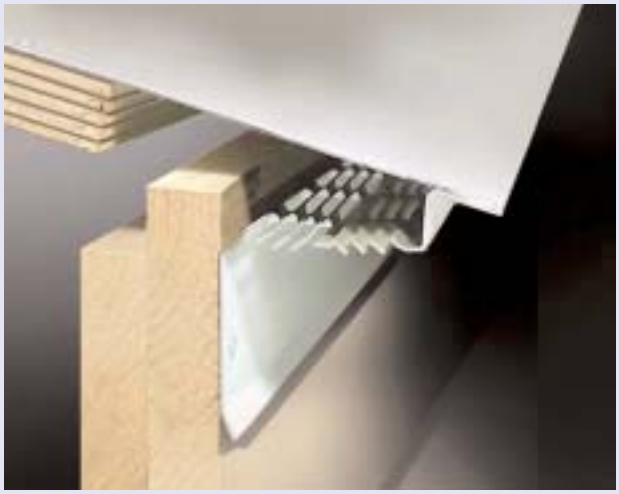
4 *Can you have too much intake ventilation?*

It's nearly impossible. If for example, more intake net free area is installed than there is exhaust net free area, the excess intake venting will become exhaust on the leeward side of the house because the intake vents on the windward side of the house will have pressurized the attic. As a result, the intake vents on the leeward side of the house will work with the exhaust vents to release the air. In general, it's more likely that houses will have too little intake than too much.

5 *What's the best way to install vented drip edge?*

Keep these things in mind when installing vented drip edge products.

- The louvers on the vent should always be parallel to the ground so that the wind cannot blow snow and rain directly into the openings. Be careful that the louvers are not lifted out of parallel position during installation, opening up a possibility of weather sneaking in.
- Be sure the fascia is installed so the top is above the louvers.
- There should be between a 1˝ to 1¼˝ space between the louvers on the vent and the top of the gutter. If the vent is installed tightly above the top of the gutter, the vent louvers can become blocked as soon as the gutter fills with debris or snow. Should this happen, the vented drip edge will temporarily no longer function as an intake vent until the blockage is clear.



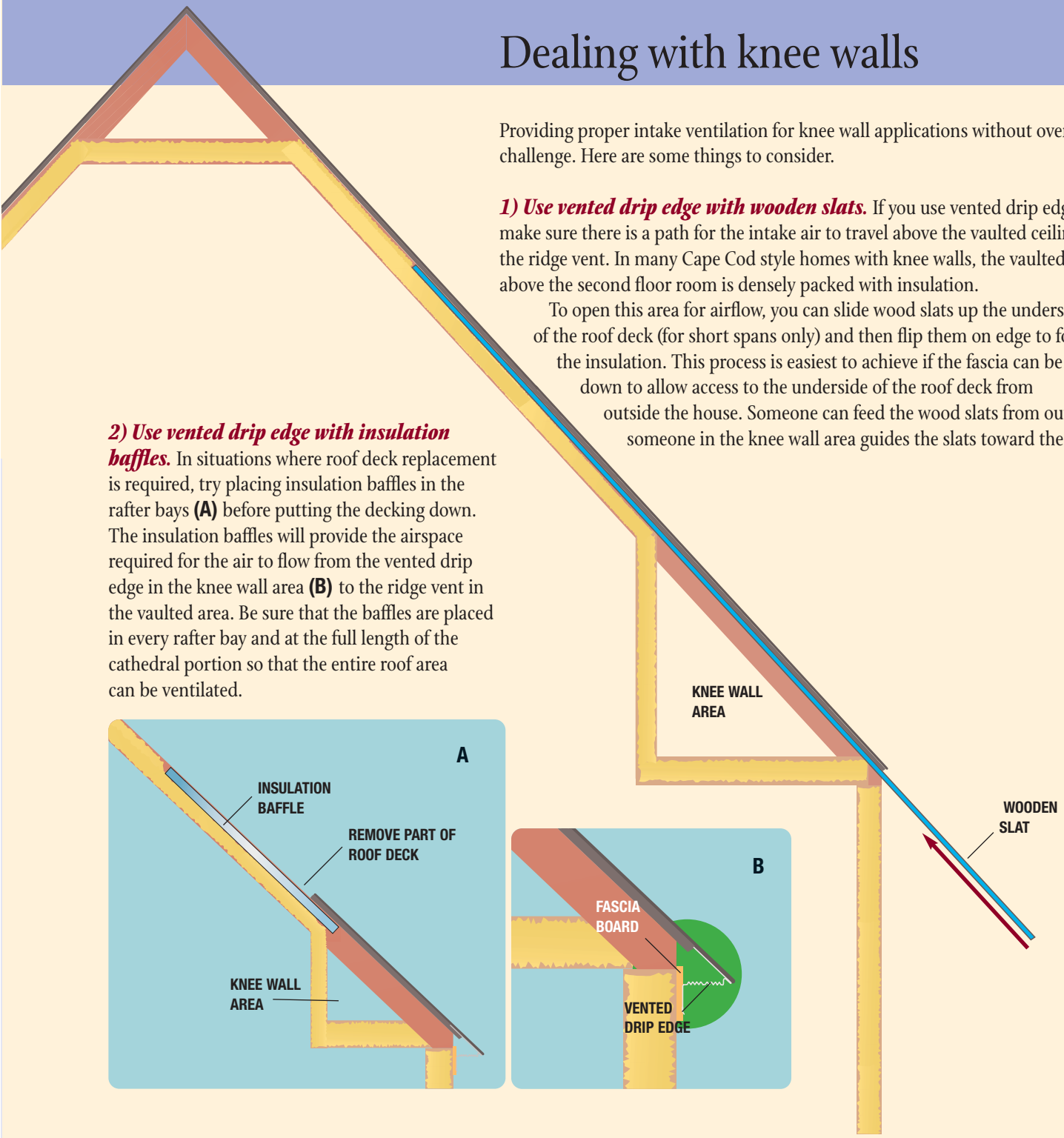
Dealing with knee walls

Providing proper intake ventilation for knee wall applications without overhangs is a challenge. Here are some things to consider.

1) Use vented drip edge with wooden slats. If you use vented drip edge, make sure there is a path for the intake air to travel above the vaulted ceiling to the ridge vent. In many Cape Cod style homes with knee walls, the vaulted portion above the second floor room is densely packed with insulation.

To open this area for airflow, you can slide wood slats up the underside of the roof deck (for short spans only) and then flip them on edge to force down the insulation. This process is easiest to achieve if the fascia can be pulled down to allow access to the underside of the roof deck from outside the house. Someone can feed the wood slats from outside while someone in the knee wall area guides the slats toward the ridge.

2) Use vented drip edge with insulation baffles. In situations where roof deck replacement is required, try placing insulation baffles in the rafter bays **(A)** before putting the decking down. The insulation baffles will provide the airspace required for the air to flow from the vented drip edge in the knee wall area **(B)** to the ridge vent in the vaulted area. Be sure that the baffles are placed in every rafter bay and at the full length of the cathedral portion so that the entire roof area can be ventilated.



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