

# EDUCATING HOMEOWNERS ABOUT ATTIC VENTILATION



## FIVE KEY POINTS THAT CAN MAKE A DIFFERENCE



*By: Paul Scelsi, Marketing Communications Manager at Air Vent Inc.*

Sometimes residential roofing contractors reach out for assistance with educating homeowners about the importance of attic ventilation.

It's a popular topic during the Q & A session of our best practices seminars across North America. They'll ask, "Can you help us explain the specific benefits of attic ventilation to homeowners to reduce their pushback during the roofing estimate process?" The fact is many homeowners just want the new roof installed without considering if the existing attic ventilation is sufficient.

**Shawn Bellis**, owner, Epic Exteriors, Overland Park, KS, talked about this very topic in a recent episode of our podcast. Here are five key points about attic ventilation that every homeowner should be aware of. There's no guarantee that being aware of these key points will result in acceptance by the homeowner. That may still require some follow-up conversations. But contractors who make a point to convey this information to homeowners during the roof estimating

process are in good position to secure a signed estimate that includes proper attic ventilation.

### **Key Point #1: It's Essential for Your Roof**

Proper attic ventilation can deliver year-round benefits by helping to fight heat buildup in the warmer months, moisture buildup in the colder months, and ice dams in snow regions. In the summer months, getting the built-up heat out of the attic pays off by helping to make the living area cooler and more comfortable because there will be less heat from the attic radiating into the living space. This lightens the burden on the air conditioning system and could lead to lower electricity costs.

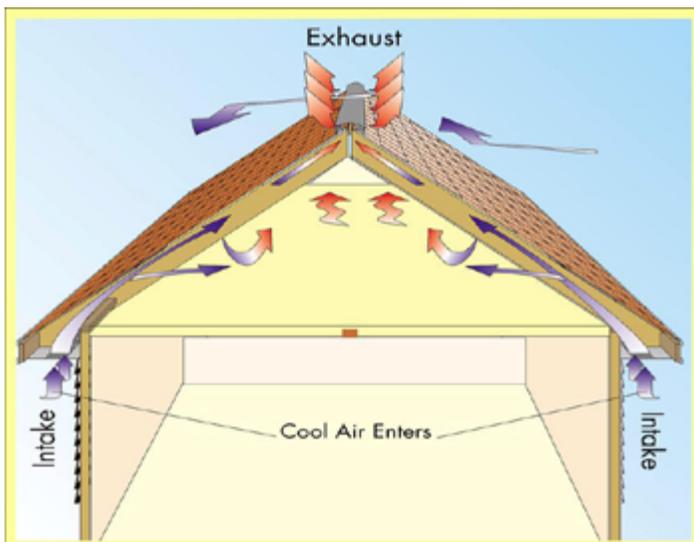
"Attic ventilation is essential for roof life span, for lowering your interior living temperatures and making your upstairs more comfortable," says Bellis. "It's a challenging subject because we find most attics are not correctly ventilated. So, when we get involved in the project, we are turning around that system and fixing it. I have seen 10 to 15-year-old roofs that are not properly ventilated and the south and west sides

are extremely deteriorated. I chalk that up to the lack of attic ventilation.”

As the seasons change during the year from warm to cold, moisture buildup inside the attic is the concern. The average family of four generates 2 to 4 gallons of water vapor per day from cooking, cleaning, showering, doing laundry, running the dishwasher, breathing and perspiration. In the winter months, this moisture is attracted to the colder attic where it can condense and eventually lead to wood rot, mildew, mold, poor indoor air quality, and wet attic insulation that has reduced effectiveness – if it’s not ventilated out of the attic properly.

“The next level of proper attic ventilation is moisture. Moisture is huge. A common problem is incorrectly ducted bathroom fans into the attic,” says Bellis. “We make a point to emphasize this during our estimating, inspection process to differentiate ourselves in the eyes of homeowners.” Bellis often finds wet insulation, rusted fasteners, and premature deteriorating roof decks. One sure sign of what Bellis calls a “sick attic” is rust spots on the insulation that have dripped from the nails above. “Those homeowners definitely have a sweaty attic; a moisture problem with the attic,” he says.

To help explain to homeowners the impact of proper attic ventilation in the fight against ice dams, Bellis monitors his own roof and attic. He’s created what almost amounts to a testing lab over the years tinkering with the amount of his attic ventilation and one-by-one fixing trouble spots. Each winter when his roof is snow-covered, he can see how it melts and compare it to other houses on his street. Why do the other houses have ice dams, but his roof does not? He uses that knowledge when talking with his homeowner customers.



Graphic shows balanced attic ventilation; photo courtesy of Air Vent, Inc.

## Key Point #2: It Must be Balanced

Balanced attic ventilation means an equal amount of intake airflow at the soffit, eave or low on the roof’s edge combined with an equal amount of exhaust airflow at or near the roof’s peak. Only when it’s balanced can the system bring in cooler, dryer air through the intake vents to flush out any warm, moist air through the exhaust vents. When it’s balanced, the airflow can “wash” the entire underside of the roof deck – bottom to top – across the roof.

“One of the most common mistakes I see contributing to inefficient attic ventilation is lack of intake,” Bellis says. “Many times, we identify that the exhaust is correct for the size of the attic, but the intake is lacking.”

On a project on a 100-degree day, Bellis measured the attic temperature at 130 degrees – about 10 to 15 degrees hotter than it should be if the attic has properly balanced ventilation. “The exhaust ventilation was fine, but the vented soffit was not,” he says. Bellis reported to the homeowner that he found solid wood underneath the vented soffit panel. In effect, there was no intake airflow.

While having a 50% intake and 50% exhaust attic ventilation system is the goal, it’s OK to have more intake than necessary. Excess intake turns into exhaust on the leeward side of the house. But the reverse is not desirable. Having more exhaust than can be supported by intake is problematic. Here’s why.

Exhaust vents (ridge vents, wind turbines, gable louvers and box vents) that are starving for intake air can actually pull from themselves (the back side of the vent in the case of ridge vents) or from a nearby vent (in the case of box vents, wind turbines and gable louvers). Anytime an exhaust vent brings in air it could also bring in weather, and that’s a problem. They are designed to be exhaust.

In the case of power attic fans (roof-mount or gable-mount), if they are lacking proper intake ventilation (based on the fan’s CFM rating; which is Cubit Feet of air moved per Minute) they could experience premature motor burnout, subpar performance and could actually pull air from the conditioned living space.

Be sure the quantity of vented soffit is sufficient for the attic size and that the wood underneath the panel is actually open to the attic; photo courtesy of Epic Exteriors.

## Key Point #3: Ridge Vents are Most Efficient

No other category of attic exhaust vent combines the superior performance and good looks that a ridge vent system delivers. Of the five categories homeowners can choose – wind turbines, gable louvers, box vents, power attic fans and ridge vents – strong consideration should

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always go to ridge vents if the roof's design and the attic's size allows for a ridge vent application. For good reasons.

Only ridge vents deliver a continuous flow of air because they are the only exhaust vent installed interruption-free along the entire horizontal peak of the roof. Every other category of exhaust is spaced apart along the roof leaving pockets or gaps where airflow is either skipped or reduced. As a result, ridge vents are the only exhaust vent that fully vents the entire underside of the roof deck from low- to-high in the attic.



The condition of plywood on a room addition with plenty of attic insulation but zero ventilation; photo courtesy of Epic Exteriors.

Cosmetically, because ridge vents are so low-profile with matching shingles installed on top, they are just about invisible from the ground looking up at the roof. Ridge vents blend in rather nicely with the beauty of the roof compared to the other 4 categories of exhaust.

"We always recommend to homeowners to go with a ridge vent anytime their roof is a candidate. It's almost a no-brainer," says Bellis. "Having installed ridge vent now for 20+ years, we've seen the evolution of ridge vent design and performance come along. And installing it end-to-end on the roof helping it blend it with the roof is one of the signature looks we've become known for. You simply cannot tell the roof has exhaust vents on it."

One of the evolutionary features of ridge vents is the external wind baffle. It's a lip or wing running along the length of the ridge vent on both sides of the vent. It allows the wind to hit the vent, deflect up and over the vent and create low pressure above the vent openings to enhance its exhaust airflow capabilities. It also deflects weather elements away from the vent and attic.

"It's amazing how much more effective ridge vents

are compared to other categories of exhaust when you get enough intake," says Bellis. "When the wind kicks in and hits the vent's external baffle, it absolutely amplifies the amount of exhaust. You can't get that with the other categories."

### Key Point #4: Do Not Mix Exhaust Vent Types

It's never a good idea to combine two different types of attic exhaust vents on the same roof above a common attic. It leads to short-circuiting the system.

Sometimes homeowners complain that the existing exhaust vents are not performing well so they would like to give them a boost by adding another type; for example, adding box vents to a roof with ridge vents already installed; or adding a power fan to a roof with wind turbines already installed. Unfortunately, one type will be the primary exhaust vent while the second type could turn into the intake vent – bringing in air and weather along the way. Air always follows the path of least resistance. When exhaust vent types are mixed on the same roof, the path of least resistance is the distance between the two types. It confuses the intended flow of air. It literally "short-circuits" the system.

"Mixing exhaust is extremely common, way more common than you would think," says Bellis. "I call this situation an attic vent nightmare where we have ridge vent combined with power fan combined with box vents combined with wind turbines. Sometimes it's the homeowner's fault. Sometimes it's the roofing contractor's fault. Sometimes it's both when the homeowner talks the contractor into adding more vents to try to alleviate problems the homeowner thought they had."

Bellis cautions, don't overlook the gable louvers, which are exhaust vents on the side of the house. "Block off the gable louvers when using any other type of attic vent. They're sneaky little vents that you may not think can cause short-circuiting," he says.

### Key Point #5: Never Having it Before is Not a Reason to Skip it Now

Just what does a roofing contractor say when the homeowner says, "I have never had proper attic ventilation before so why do I suddenly need it now? Just give me a new roof."

"For us, we install extended warranties for the roofs we do. So, the shingle manufacturer is going to want us to fulfill their installation guidelines which includes proper attic ventilation," says Bellis. "Then there's

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building code. The code calls for proper attic ventilation. In my municipalities, there are inspections on the roof to verify the attic ventilation.”

Bellis says that even without the watchful eye of the building code inspections, why would a homeowner not want what's best for the roof? “Do everything you can now to make your attic and roof as efficient as possible,” he says. “I've seen roofs that are only 11 years old but are toast because of improper attic ventilation, and now they need a brand-new roof again.”

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