

Focused on Proper Residential Attic Ventilation, Roofing Contractors Documented These Mistakes

 AUGUST 1, 2020 BY [PAUL SCELSI](#)

Since 1998 our best practices in residential attic ventilation seminars have featured the real-world situations roofing contractors are seeing. Here we cover a handful of attic ventilation mistakes contractors found in the field. (Note: Some photos show multiple mistakes but were chosen to highlight one.)

Problem: Bagged Wind Turbines Suffocate the Attic Airflow

Solution: Unbag the wind turbines.



Photo: Jake Jacobson, SF5 Construction, LLC, Little Elm, Texas

It's impossible for a covered attic exhaust vent to work if it's smothered under a bag. Attic ventilation is supposed to provide year-round benefits, fighting heat buildup in the warmer weather and moisture buildup in the colder weather. It's sometimes forgotten (and maybe never known) that occupants of a house generate water vapor daily through activities such as cooking, cleaning, bathing, breathing, etc. It amounts to 2-4 gallons per day for the average family of four. That warm, moist air can make its way into the colder attic in the winter months, where it

can condense and cause trouble as water droplets and frost.

Problem: Bath Fan Ductwork Terminating in the Attic Damages Roof

Solution: Run the bath fan ductwork either vertically through the roof or out the side gable wall.

Even a perfectly balanced attic ventilation system cannot handle the quantity of moisture dumped into the attic by the bath fan. It overwhelms the system. That moisture should

be vented directly to the outdoors without any pitstops into the attic. In the home pictured here, Trevor Atwell found three bathroom fans venting directly into the attic. He also found a lot of rotted sheathing.

Problem: Painted Soffit Vents Result in Reduced Intake Airflow

Solution: Buy pre-painted soffits, or paint them more carefully, or replace them with new vents.



Photo: Trevor Atwell, Atwell Exterior Services, LLC, Greenville, North Carolina



Photo: Daniel White, Roof Life of Oregon, Tigard, Oregon

Soffit vents have a specified amount of Net Free Area (airflow capability) when they are manufactured. For example, 9 square inches of NFA per linear foot. That amount, by the way, would balance nicely with a ridge vent (exhaust vent) that is capable of 18 square inches of Net Free Area per linear foot (9 NFA at the soffit on the left of the ridge vent + 9 NFA at the soffit on the ridge of the ridge vent = 18 NFA at the peak of the roof). But the airflow capability of the soffit is reduced if the vent openings become clogged or blocked because of a

careless paint job. While house exterior colors are important, don't sacrifice attic ventilation performance.

It's possible to have both a nicely painted soffit and it's full, intended net free area (airflow capability).

Problem: Two Rows of Box Vents = One Path of Inefficient Airflow

Solution: Always keep attic exhaust vents in one row.

Let's cut to the chase. If it takes two rows of attic exhaust vents to meet the attic's exhaust ventilation needs, it's time to find another category of exhaust (maybe horizontal ridge vent; or diagonal hip ridge vent; or a combination of horizontal and diagonal ridge vent; or a power fan). But when attic exhaust vents are aligned in two rows, the primary path of the airflow will be from one row to the next because air will allow follow the path of least resistance seeking the closest exit point from its entry point. The intake vents in the soffit or low on the roof's edge are supposed to be the intake vents. The pictured scenario here is producing inefficient attic airflow and could cause one row of box vents to ingest weather.



Photo: Daniel White, Roof Life of Oregon, Tigard, Oregon

Problem: Mixed Types of Attic Exhaust Vents = Problematic Airflow

Solution: Only use one type of attic exhaust vent on the same roof above a common attic.

Regardless what combination of two or more different types of attic exhaust vents either the homeowner demands (we've heard the stories) or



a well-intended but misguided roofing contractor recommends (it's happening), do not mix two different types of attic exhaust vents on the same roof above a common attic. Pictured here are wind turbines with ridge vents; box vents with ridge vents; solar powered fans with box vents; and traditional electric power fans with ridge vents. Now shown is the all-time classic: Gable-end louvers with any other type of attic exhaust.

Daniel White, Roof Life of Oregon, Tigard, Oregon

When attic exhaust types are mixed, it short-circuits the airflow system because air always follows the path of least resistance. The air is looking for the easiest, least difficult exit path. That path is inevitably the distance between the two types of attic exhaust vents because they are closest to each other. That means the airflow will be concentrated in that area of the attic; which leaves significant areas of the attic incorrectly vented. The intake vents low on the roof's edge or in the soffit/overhang have been pretty much bypassed. Furthermore, if one of the exhaust vents is suddenly an intake vent, does that mean it's ingesting weather along with the air? You do not want to find out.



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