AIRING YOUR HOME'S DIRTY SECRET

3 ways poorly ventilated homes could cost you.

Author:
Katie Ostreko, *Vice President of Sales & Marketing at Quality Edge*

QUALITY EDGE®

70% OF HOMES DON'T MEET BASIC VENTILATION REQUIREMENTS.

Research shows **"most homes don't meet basic ventilation requirements and are in violation of residential building codes" and "approximately half of all U.S. homes have evidence of improper ventilation."**

According to the EPA, homeowners spend 90% of their time inside. Between work, home and transportation, people can feel the effects of poor ventilation in their pocketbook or even in their lungs. With indoor pollutants sometimes up to 5x greater than outdoor concentrations, people who spend a great deal of time inside can be at risk for irritation, headaches, dizziness, fatigue, respiratory diseases, or forms of cancer.

Based on the analysis of nearly 50,000 indoor air quality tests conducted in homes across North America, Air Advice shows that **"9 out of 10 American homes are breathing unhealthy indoor air. Over 91% of homes tested show elevated particle allergen levels."**

If you knew that your home wasn't properly ventilated, would you take actions to correct it?

According to Lawrence Berkley Laboratory "poorly ventilated homes have been reported to be one of the leading causes of moisture build up, mold, mildew and rot in attics; which has contributed to alarming rise of many illnesses, including; asthma, allergies and other respiratory issues."

PROPER VENTILATION

Prolongs the life of your roof and attic

Reduces energy costs

Improves indoor air quality

CODE REQUIREMENTS

CONTINUOUS SOFFIT AND RIDGE VENT

The Department of Energy and Habitat for Humanity states that "a combination of continuous ridge vent along the peak of the roof and continuous soffit vents at the eaves provides the most effective ventilation."

BALANCED ATTIC

"The international building code SEC. 1203.2 states, "The net free ventilating area shall not be less that 1/150 of the area of the space ventilated, with 50% of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3' (914mm) above eave or cornice vents, with the balance of the required ventilation provided by eave or cornice vents."

1/150 RULE

The National Roofing Contractors Association recommends a minimum area of ventilation openings that is 1/150 fraction of the area of space ventilated. "Natural convection is responsible for initiating the upward flow of air through an attic. This air current can be maintained to aid in continuous circulation of air through the attic if intake vents placed low in the attic make colder air available to replace the heated air exhausted through vents placed high in the attic."

PROPER VENTILATION SAVES HOMEOWNERS UP TO $18,000 OVER A 15-YEAR MORTGAGE.

Improperly vented and overheated attics are a primary cause of premature aging of roofing materials which can be costly. The Asphalt Roofing Manufacturers Association states that **"Recent research has reinforced the theory that prolonged exposure to extreme heat accelerates the aging of asphalt roofing products. By properly ventilating the underside of the roof deck, heat buildup and its related problems can be reduced."** It's one of the main reasons why shingle manufacturers warranties are voided when proper ventilation is not present.

If shingle manufacturers require proper ventilation to uphold their warranty, why shouldn't you?

Shingles, insulation and the wood roof deck or attic beams that wear much sooner than their expected life can cost you. Poor ventilation could require a reroof 2x quicker or paying to replace insulation that's lost its effectiveness in some cases up to 80%. The cost to manage the mold and mildew build up cause by improper ventilation could get extremely pricey very quickly. Improper ventilation creates condensation and moisture, found in 58% of homes according to EnviroVent, clings to the coldest surface, forming droplets found on walls, surfaces, or windows, which over time can degrade both the interior and exterior home surfaces.

BUILDING MATERIAL COSTS

SHINGLES

$5,000

IF ROOF SHINGLES LAST 15 YEARS INSTEAD OF 30

ROOF DECK

$1,200

COST OF REPLACING DRY ROT ON A ROOF DECK

INSULATION

$5,500

COST OF THE REDUCED EFFECTIVENESS OF FIBERGLASS INSULATION

MOLD REMEDIATION

$3,000

AVERAGE COST OF A MOLD REMEDIATION CLAIM AND REPAIR

POORLY VENTILATED HOMES COULD COST HOMEOWNERS OVER $5,000 IN ENERGY BILLS.

Residential building code requires proper ventilation through soffit systems that offers more net free area (NFA) for air flow, creating the updraft required to get air to exit through the ridge vents. This continuous roof ventilation system at the rooftop and a continuous vented soffit system is recommended by the Department of Energy to provide more intake or NFA at the eave edge than what is offered at the roof vent system, creating the proper equation to move air in and out seamlessly.

If your attic feels like an oven in the summer, do you know how much it could cost you?

Roofs that have unbalanced ventilation where there's not enough intake for the rooftop ventilation system, create attic spaces that become overheated, rising to 175 degrees in the summer and baking home interior. This causes strain on the air conditioning system of the home, running for hours longer during the warmer months than homes with proper ventilated attics. Proper ventilation with a greater in-take with soffits than exhaust through roof vents can reduce the attic temperature by 50 degrees or more according to the Department of Energy.

Calculating NFA can be found below, but typically one foot soffit overhangs should have at least 11 NFA, so when used on both sides of the home will have a combined NFA of 22 to draw the air flow needed to work with an average ridge vent system.

COMPARING PUBLISHED NFA MEASUREMENTS

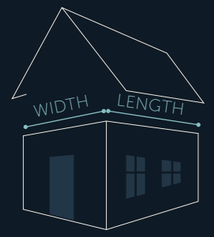
QUALITY EDGE SOFFIT	
DESCRIPTION	**NFA**
Vesta Vented Soffit	11.4
12" TruLine Full Vent Soffit	19.6
16" TruLine Full Vent Soffit	19.1
TruVent Hidden Vent	11
TruBead Soffit	10.2

ALUMINUM SOFFIT	
DESCRIPTION	**NFA**
Gentex 18" 3-Panel Soffit	5.46
PlyGem Mastic Triple 4" Soffit	13.2
Rollex 16" Lanced Soffit	12.96

VINYL SOFFIT	
DESCRIPTION	**NFA**
CertainTeed Universal Triple 4" Soffit	5.9
Royal Exterior Portfolio Triple 4" Soffit	7.7

FIBER CEMENT SOFFIT	
DESCRIPTION	**NFA**
James Hardie Soffit	5

NFA CALCULATOR



STEP 1

The starting point for any attic ventilation project is always:

What is the size of the attic space we're trying to vent?

ft. width x ft. length =
A attic sq. ft.

STEP 2

Determine the total NFA needed for the attic.

A ÷ 150 = **B**

STEP 3

Balance the system with 50% intake vents and 50% exhaust vents.

B ÷ 2 = **C** sq. ft. of intake NFA
C sq. ft. of exhaust NFA

STEP 4

Convert to square inches because that's how vents are rated by manufacturers.

C x 144 = **D** sq. in. of intake NFA
D sq. in. of exhaust NFA

STEP 5

Pick the vents for the project. The NFA rating is square inches per linear foot.

Example: 19.6 NFA is 19.6 sq. in. per linear foot

NFA Rating = **E**

STEP 6

Determine the quantity of vents needed.

D ÷ **E** = **G** linear feet of intake vent
G linear feet of exhaust vent

HOMES WITH POOR INDOOR AIR QUALITY COULD BE MAKING YOUR FAMILY SICK.

Many people experience the colds and coughs that often come when they move from the outdoors in the summer to the indoors in the fall and winter. **"Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of the home,"** according to the EPA. Each of us takes about 20,000 breaths every day, making the air we breathe critical to our overall health.

If you knew your poor indoor air quality could make you ill, would you make a change?

Asthma has increased by 28% between 2001 and 2011, costing the US over $53b in medical costs and care for both adults and children. More than 25 million people have asthma and the long-term condition impacts airways and the ability to breathe. Living in a home that hurts rather than helps asthma and other respiratory diseases led foundations like the Asthma and Allergy Foundation of America to provide multiple articles and recommendations about the products, cleaning and air quality articles. These link the management of asthma with the materials used in and on homes.

ILLNESSES ATTRIBUTED TO POOR INDOOR AIR QUALITY

MILD — SEVERE

- SKIN IRRITATION
- HEADACHES
- DIZZINESS
- FATIGUE
- RESPIRATORY DISEASE *(Including Asthma)*
- CANCER

LEARN ABOUT HOW PROPER ROOFTOP VENTS AND VENTED SOFFITS IMPACT ATTIC TEMPERATURES.

Proper ventilation moves air up and through from vented soffits to roof vents, keeping the attic temperatures cooler. Inadequate air flow creates a weather pattern that circulates inside the attic, raising the temperature and reducing the efficiency and useful life of the shingles, insulation, and roofing materials.

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