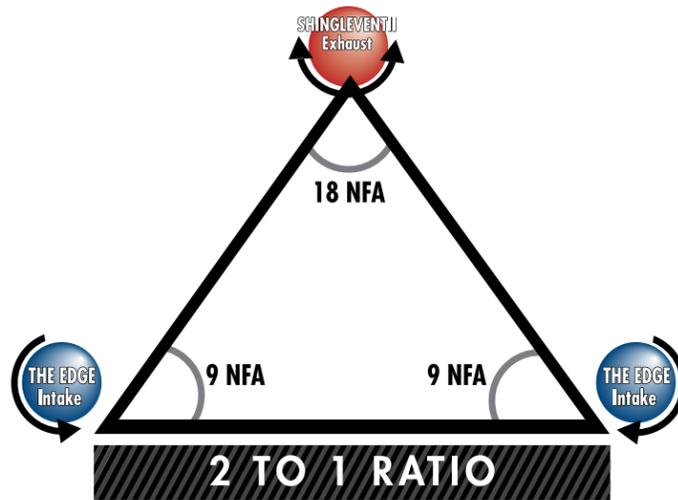


Designing *The Balanced System*® for Attic Ventilation

Balanced Attic Ventilation Can Help Save Energy and Money

Significant Savings Captured in Case Study Using Thermo-Graphic Photos & Kilowatt Readings

Research has shown that the best way to ventilate an attic is with a system that provides continuous airflow along the entire underside of the roof sheathing. Achieving this desired airflow requires a balanced system of *intake ventilation* low at the roof's edge or in the soffit/eaves and *exhaust ventilation* at the ridge. A balanced system can help fight excess heat and moisture before they become serious problems.



Air Vent is a leading manufacturer of high-quality residential attic ventilation products including ShingleVent® II ridge vent, electric and solar power fans, whole-house fans and a complete offering of intake vents including our shingle-over, roof-top installed The Edge™ Vent.

Shinglevent® II **TheEDGEvent™** SHINGLE-OVER INTAKE VENT **PowerCool™** **SolarCool™**



A GIBRALTAR INDUSTRIES COMPANY

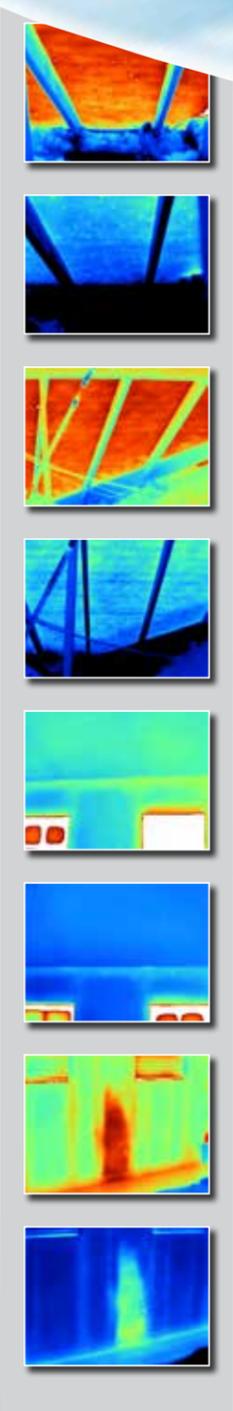
4117 Pinnacle Point Drive, Suite 400, Dallas, TX 75211

800-AIR-VENT (247-8368)

www.airvent.com • ventilation@gibraltar1.com

©2015 Air Vent, Inc.

AVI002 - 1/15



What impact does an attic ventilation system have on the comfort level inside your house?

Can it help reduce your cooling bill?

What kind of savings are we talking about?



Seeing is Believing

Goal

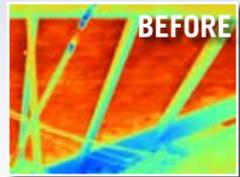
The goal of the case study was to compare an unbalanced attic ventilation system (which is an attic with unequal distribution of intake vents and exhaust vents) to a balanced attic ventilation system (which is an attic with an equal or close to equal amount of intake vents and exhaust vents) in terms of **heat buildup** and **kilowatt hours**.

Air Vent partnered with Risk Management & Engineering (Garland, TX) to study a house in Mansfield, TX (a suburb of the Dallas-Fort

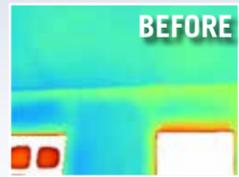
Worth Metroplex) analyzing temperature readings in 30 different attic and living space locations. On both the “before” test day (the unbalanced attic ventilation system) and the “after” test day (the balanced attic ventilation system) thermo-graphic photo and temperature readings were taken during 12-hour periods. Both test days had similar maximum outdoor temperatures (approximately 98°F) and solar insolation (the radiant heat energy from the sun that heats the roof deck).

A selection of the “before” and “after” thermo-graphic photos side-by-side.

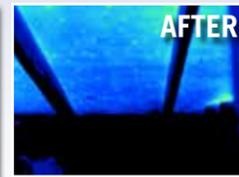
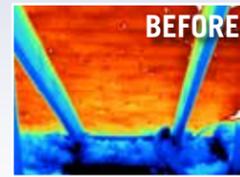
East Attic North Deck



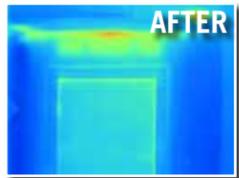
Family Room



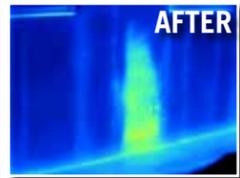
West Attic at Roof Edge



East Attic Door



Exercise Room



Note: Please visit www.airvent.com to view more “before” and “after” thermo-graphic photos and to read the third-party independent Executive Summary.

Attic Specs

The case study house in Mansfield has three attics.

East Attic: 2,136 square feet

West Attic: 813 square feet

Garage Attic: 140 square feet

The unbalanced attic consisted of a mix of **ridge vents** and electric **power fans without intake ventilation**. Mixing more than one type of exhaust vent on the same house is not recommended because it could short-circuit the ventilation system and possibly allow weather infiltration into one of the exhaust vents. Furthermore, without intake vents, the attic is not being properly ventilated.

When the Mansfield house was re-roofed due to hailstorm damage, a balanced attic ventilation system was installed which consisted of electric **power fans** repositioned for maximum efficiency and Air Vent’s **Edge™ Vent** — a shingle-over, roof-top installed intake vent. *Note: Although ridge vents are generally the best way to exhaust vent an attic, power fans are a good “Plan B” when the roof is not a suitable candidate for horizontally installed ridge vents at the roof peak. Another option is diagonally installed Hip Ridge Vent.*

Impressive Savings

Highlights of the temperature and energy savings:

Maximum roof deck temperatures **dropped 22.5°F** (from 146.5°F to 124°F).

Maximum attic temperatures **dropped 9.3°F** (from 123.2°F to 113.9°F).

Maximum interior surface temperatures **dropped 6.4°F** (from 83.1°F to 76.7°F).

Kilowatt Hours **dropped 20%** (from 130 to 104).

Assuming 20 cents per Kilowatt hour, as the homeowner was paying in Mansfield, the case study yielded approximately **\$52 savings** over 10 days or **\$312 savings** over 60 days with an average outdoor temperature of 86°F.

the roof deck materials was reduced; the temperature of the building materials inside the house was also reduced,” says David Weeks, P.E., CIH, senior engineer at Risk Management & Engineering. “The results of our testing clearly showed that the Air Vent balanced attic ventilation system resulted in demonstrated energy savings.”

“The results of our testing clearly showed that not only was the temperature of the air inside the attic reduced, the temperature of

