

# Vent on Venting

**Research Report - 0411**

Rev. November-2004

by Joseph Lstiburek

---

Abstract:

*Just about everyone in the building industry can be guilty of using building terms loosely, and a prime example is with attics, roof assemblies. Just so that we are all on the same page.*

---



## Building Science Corporation

Architecture and Building Science

70 Main Street  
Westford, MA 01886

P: 978.589.5100  
F: 978.589.5103

[www.buildingscience.com](http://www.buildingscience.com)

A little “venting” on venting:

Just about everyone in the building industry can be guilty of using building terms loosely, and a prime example is with attics, roof assemblies. Just so that we are all on the same page:

You can vent single components, you can vent assemblies, and you can vent spaces. But doing one is not the same as doing the others.

- Venting or (“back venting”) roof cladding – when we do this, we allow air exchange behind the cladding and subsequently allow venting of moisture and some heat from underneath the cladding. Corrugated roof claddings (tile, metal, fiberglass sheets) are inherently vented because of their profile or shape. Other claddings (wood shingles and shakes, standing seam metal) are vented when installed on furring strips or mesh spacers.
- Venting roof sloped decks – If vent chutes or spacers are installed between framing on the underside of the structural roof deck (“cold” roof), then air (“flushing” heat and moisture) can circulate underneath the roof deck from a vented soffit to a vented ridge. This is a common building practice with cathedral ceilings in cold climates. An air barrier under the insulation system is necessary to separate the conditioned space from the vented space.
- Venting attics – Codes define an attic to be “the space between the ceiling beams of the top story and the roof rafters” [The BOCA Basic National Building Code]. So an attic is just a *space*. A *vented attic* must mean a sloped roof where the drainage plane occurs at the roof assembly and the thermal barrier and pressure boundary (air barrier) occur at the ceiling assembly. This means that we can take advantage of this large volume of air and move it (exchange it) for moisture control. An *unvented attic* dictates that all three functions—drainage plane, thermal barrier and pressure boundary (air barrier)—take place somewhere within the roof assembly. Since we no longer have this large volume of exchanged air to handle moisture, our pressure boundary performance becomes more critical. And of course, a cathedral ceiling means you don’t have an attic space and dictates that the roof assembly contains all three functions or components as well. So, an unvented attic means the same thing as a sealed attic, or a conditioned (or at least semi-conditioned) attic, based on where those four components have all ended up.

February 2003

Rev. November 2004

BSC\_Primary/Documents/Unvted\_roofs\_Feb03/Vent\_on\_vent.doc

## About the Author

**Joseph Lstiburek**, Ph.D., P.Eng., is a principal of Building Science Corporation in Westford, Massachusetts. He has twenty-five years of experience in design, construction, investigation, and building science research. Joe is an ASHRAE Fellow and an internationally recognized authority on indoor air quality, moisture, and condensation in buildings. More information about Joseph Lstiburek can be found at [www.buildingscienceconsulting.com](http://www.buildingscienceconsulting.com)

Direct all correspondence to: Building Science Corporation, 30 Forest Street, Somerville, 02143.

## Limits of Liability and Disclaimer of Warranty:

Building Science documents are intended for professionals. The author and the publisher of this article have used their best efforts to provide accurate and authoritative information in regard to the subject matter covered. The author and publisher make no warranty of any kind, expressed or implied, with regard to the information contained in this article.

The information presented in this article must be used with care by professionals who understand the implications of what they are doing. If professional advice or other expert assistance is required, the services of a competent professional shall be sought. The author and publisher shall not be liable in the event of incidental or consequential damages in connection with, or arising from, the use of the information contained within this Building Science document.