

The revolution  
in low-slope roofing



roof system

BENEFITS OF THE V2T ROOF SYSTEM:

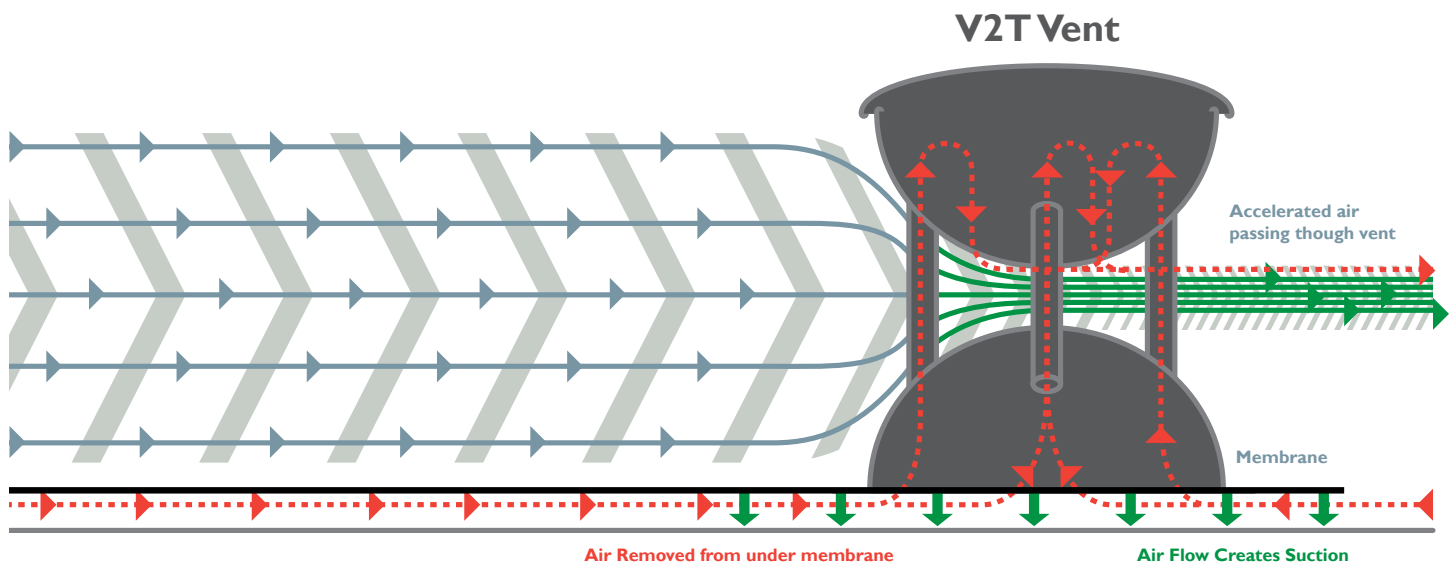
# The Drying Effect

The V2T Roof System has many valuable benefits including the price, being a 'green' technology, and offering quicker installation and in less than perfect weather. However, one often discussed benefit of the V2T vent is its ability to pull both air and moisture out from under a membrane.

## Why is the Drying Effect Important?

Moisture may penetrate into a low-slope roof assembly in a variety of ways including, surface leaks as well as from condensation created from inside the building, among others. Moisture trapped in a roof assembly can not only cause significant damages to the roof and interior spaces beneath it, but also to the building as a whole. This damp environment caused by leaks also encourages mold growth, an increasing issue in many buildings. In the United States, moisture approximately lead to a 40% overall reduction of the R-value of insulated roofing insulation (Kyle and Desjarlais 1994). The extreme degradation of the insulation's thermal resistance may increase energy loss through building roofs by 70% (Desjarlais and Byars 1998) and may increase peak electrical demand for preconditioning by 15% (Kyle and Desjarlais 1994). According to Desjarlais and Byars, moisture has been a major cause of re-roofing in the United States, which accounts for 75% roofing work, and has become a multibillion dollar problem in the roofing industry.

## How Does the Drying Effect Work?



The V2T Roof System uses the power of the wind to create suction between the roof membrane and substrate - the stronger the wind, the stronger the suction. This suction grip increases the potential for removal of moisture from the roof system.

Using the Venturi principle from fluid mechanics, V2T vents generate low pressure relative to the ambient pressure as air is smoothly compressed between two hemispherical domes. This low pressure is transferred under the roofing membrane creating suction that counteracts the uplifting force of the wind on the roof. Essentially, the vents create a vacuum effect where the air passing through the vents above the membrane actually pulls what is under the membrane up, and the membrane down. When applied to a semi-permeable sub-roof, in addition to resisting membrane detachment, the vent can act in a moisture drying capacity. Moisture is pulled from insulation and from any possible ponding locations that may be forming under the membrane.

The V2T Roof System uses a new, patented vent system developed in collaboration with researchers at Virginia Tech for application to low-sloped roofs for either replacement or new installations. It is important to note that maintenance of traditionally adhered roof systems can also use V2T vents to help pull moisture from the membrane and insulation. Just using a vent where there is a leak will help extend the life of the roof before the next re-roofing is needed.

## V2T Monitoring Technology

The V2T Roof System monitoring technology has the potential to show when moisture levels increase in a roof assembly. The more roof systems that are equipped with the sensor platform the larger our data base will become so we can accurately quantify system capabilities. Having this information not only allows you to address problems both precisely and immediately, but ultimately extends the life of your roof and lowers the cost of maintenance and ownership.

Because the V2T Roof System uses a loose laid membrane, it is the fastest, easiest, and most environmentally friendly roof system to repair.

A sensor located inside the upper hemisphere of the vent transmits readings wirelessly to a data acquisition hub housed inside the building. Data is then transmitted from the hub over the internet to Virginia Tech for analysis. V2T can provide roof owners, consultants, or a contractor with relevant moisture and pressure reports, keeping your roof in the best shape possible. The system is powered by solar cells with battery backup located on the V2T Vent. For more information please review our [V2T Monitor Overview pdf](#).

## What does this mean for me?

The V2T Roof System and monitoring technology are a great asset for any roof. Whether you are looking to re-roof, construct a new roof, or simply need a small maintenance fix for your moisture problem on a traditional roof, V2T can work with you!

## References

Desjarlais, André O, and NA Byars. 1998. Predicting moisture problems in low-slope roofing. Oak Ridge National Lab., TN (United States).

Kyle, David M, and André O Desjarlais. 1994. Assessment of technologies for constructing self-drying low-slope roofs. Oak Ridge National Lab., TN (United States).

In general we believe that the V2T Vent Technology has a significant advantage in performance, installation, monitoring, environmental stewardship and cost than any other system on the market. To date, we have millions of square feet of roof in all climates that is providing these benefits to contractors, building owners, and manufacturers across the country.

To learn more about the V2T Roof System, visit us at [www.V2TRoofSystem.com](http://www.V2TRoofSystem.com).

If you have a specific job in mind, you can complete the [Job Evaluation Request Form](#) and we'll get back to you within 48 business hours.



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V2T Technology  
13000 S. Tryon St.  
Suite F-193  
Charlotte, N.C. 28278  
[v2troofsystem.com](http://v2troofsystem.com)