

The revolution
in low-slope roofing

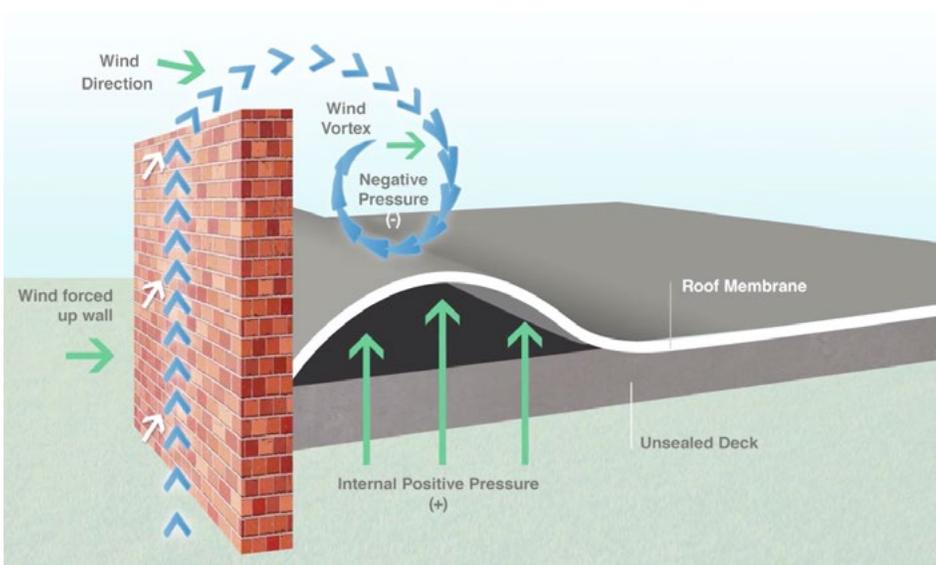


roof system

What is V2T?

Originally Authored by V2T Product Specialists for Florida Roofing Magazine

V2T is a revolutionary wind-ballasted roof system which utilizes patented vent technology to firmly hold single-ply roof systems in place, even under extreme conditions. Various scientific principles apply to forces of physics that hold the roof in place with exponentially greater force as wind speed increases.

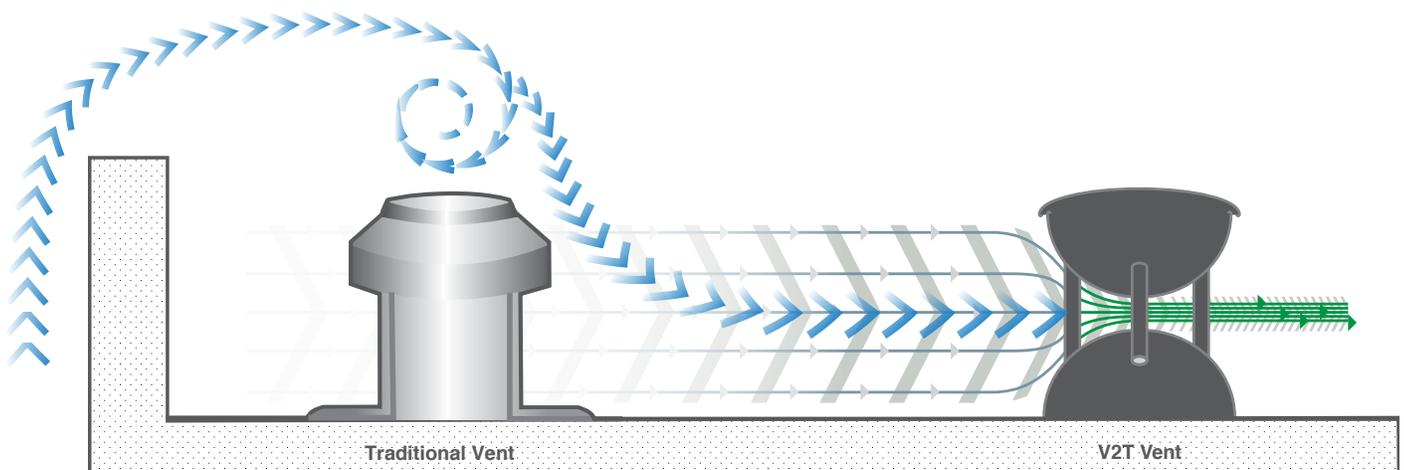


Low pressure above roofs along their perimeters is caused by naturally occurring vortices that occur when wind hits the building.

This pressure is generally what causes roofs to fail in wind events and is exactly why roofs typically fail at the perimeter first.

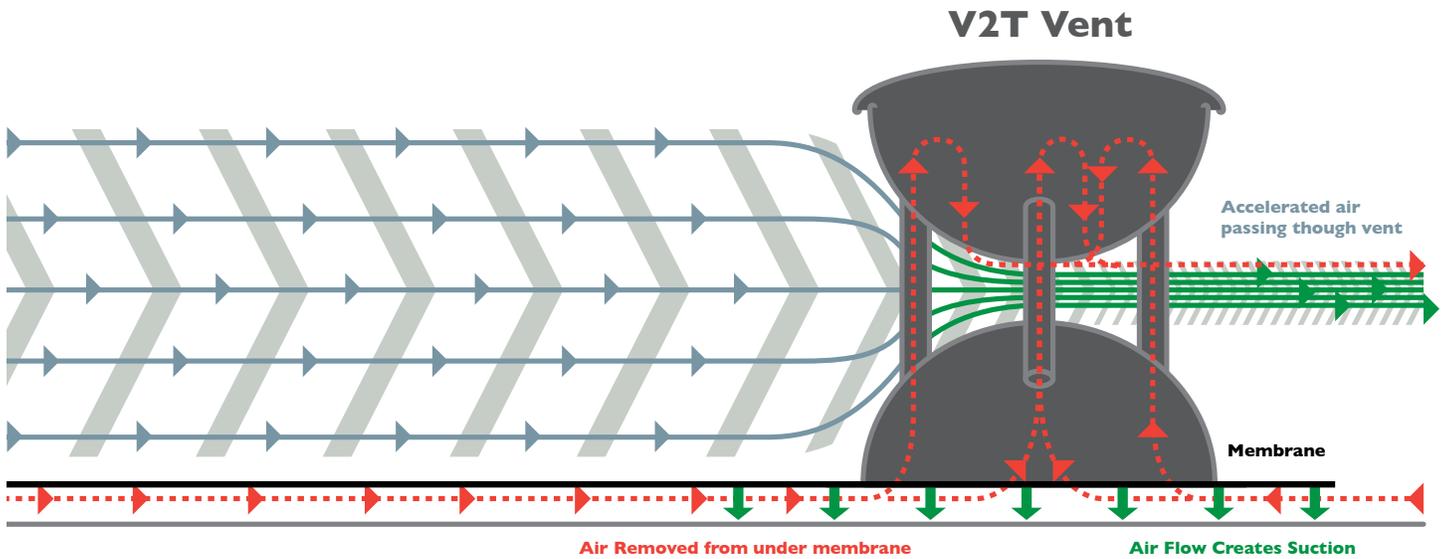
Most other wind-ballasted roof systems commonly seen in the market use one-way vents to channel these naturally occurring pressures under the membrane.

The vents are strategically placed near the perimeter, which allows them to equalize the pressure above and below the roof surface. Since there is no differential in pressure, there is no uplift created by the natural vortex. These systems have been in place for many years and, when proper air seals are maintained, are extremely effective. What makes V2T different is the vent design and a little help from physics, specifically the Bernoulli principle and the Venturi effect. These principles are related to one another and are as tested and proven as gravity. There are numerous resources for researching these principles on your own, or you can always contact V2T if you want a more in-depth physics lesson as it applies to commercial roofing.



The bottom line is that because of their unique shape, the V2T vents speed up the wind (Venturi effect) and create a vacuum (Bernoulli's equation) every time wind or air moves through them. Because of the nature of the physical forces involved, this pressure increases exponentially as the velocity of the air (which acts as a fluid in this scenario) increases. In simple terms, V2T vents use physics to flip the script and use natural forces against themselves. Essentially, the vents create greater pressure differentials by accelerating the wind.

The vacuum created in this pressure differential pulls air out of the roof system, and since the system is installed with air seals this creates a lower pressure below the membrane than above. By utilizing the Venturi effect, we accelerate the wind through the vent. Therefore, at a given ambient wind speed, the negative pressure produced by the vent comes from the higher wind speed surrounding the vent because of natural acceleration as air passes through the Venturi shape.



Because we lower the pressure within the roof system, those same forces that typically pull up on the edge of a roof (see picture) are now pushing down. The V2T roof system does not equalize pressure in order to eliminate the effects of uplift, we essentially create downward pressure, meaning that the area of low pressure created at a roof's edge is actually higher than the pressure within our roof system due to the Venturi effect of the vents. Now, gravity is stronger than the "low pressure" area at the roof's edge, so it exerts its full force across the low-pressure area to firmly hold anything beneath the surface in place.

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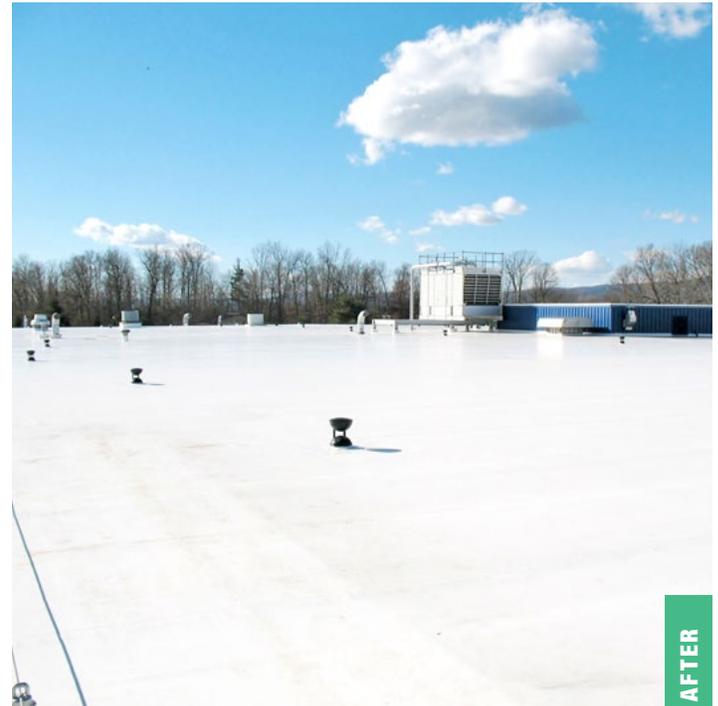
7  Bucket of Adhesive OR 1000  Screws OR 24,000 lbs  Ballast OR 4  FOAM Kits

Besides not having to handle thousands of pounds of ballast, there is another advantage to all wind-ballasted roof systems. Because they are loose-laid and not physically attached all over the roof area, the effects of uplift are spread over the entire roof area.

Typically, wind comes from one direction at a time and therefore the forces created are stronger where the wind initially comes in contact with the building. Wind-ballasted systems redistribute those forces evenly across the roof, reducing strain and pressure on some roofing components more than others.

A key difference between V2T and other vented/wind-ballasted roof systems is that we work exclusively with some of the most respected and largest roof system manufacturers in the US. These manufacturers offer the V2T system as part of their lineup. You cannot buy a V2T roof independently; you must buy a roof from a participating manufacturer (Carlisle, Versico, Flex).

These manufacturers provide the same warranties on a V2T wind-ballasted system as they do for any other roof system they sell (up to 20-year, total system, and no-dollar-limit warranties are available). We believe that top roofing system manufacturers are good at what they do. Having their full support for our system by including it within their own product offerings is a testament to what the V2T system represents to the roofing industry.



The V2T system removes virtually all air and moisture from beneath membrane surfaces with patented vents that create a vacuum effect as air passes over the roof surface.

Now you know what V2T is... but why does it matter to you, and why would you want a V2T roof for your next project?

One of the easiest ways to sell a roof is typically by reducing cost. If you can provide a roof with the same performance at a lower price than your competition, it gives you a clear opportunity. V2T excels in this area, especially with concrete, gypsum, or tectum decks. If you are working with one of these deck types, mechanical attachments are difficult and labor intensive, and quality roofing adhesives are expensive. V2T takes advantage of these sealed deck applications by requiring very few enhancements for proper installation. Without sacrificing any performance, hours and hours of labor are saved by loose laying the entire roof system.

Another common application is in reroofing, especially in cases where mechanical attachments are not practical or desired. Some examples would be where there are food prep areas or clean rooms that cannot be disturbed while in operation and shutting down facilities to install new roofs is not something building owners typically want to pursue.

Any time you are looking at installing a new roof over an existing roof and there is a compelling reason not to install thousands of fasteners through the roof deck, V2T is almost always going to provide some cost savings vs. adhering the insulation and membrane. The existing roof system will act as an air barrier creating a sealed condition over any deck type.

You can also leverage the cost savings provided by using V2T to upgrade the roof system. Better or thicker membranes, more insulation, and incorporating high-performance coverboards are just some ways to maximize the dollars spent on roofing projects.

Another common advantage is convenience. By utilizing V2T when roofing an occupied building, you will greatly reduce the noise generated by installing a new roof. You will also eliminate nearly all odors from adhesives and solvents because there are very few adhesives needed. Using V2T will also shorten the duration of installation, meaning business in an occupied space can get back to normal much faster. All these factors work to minimize the impact to whomever occupies the building. From hotels and retail facilities, to office parks and schools, minimizing disruptions to the existing occupants should be an important factor when deciding which roof system to install.

Consider the following types of installations in which this benefit is of strong importance:

- Food prep or manufacturing facilities that must avoid penetration of the deck and limit the use of adhesives.
- Hospitals, schools, child care facilities, doctors' offices, or anywhere else that the smell of adhesives may cause alarm.
- Properties near residential areas in which homeowners might complain about adhesive odors and or noisy construction occurring next door.

Above all, the greatest benefit that the V2T system provides is the peace of mind that comes with knowing this revolutionary vent system has been proven to deliver reliable results in rain, snow, heat, cold, and even hurricane conditions. Remember, the harder the wind blows, the stronger the V2T system works to protect the roof.

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.

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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