

Determining Vent Quantity: Exhaust and Air Intake

1. Calculate the volume of the enclosure / container
2. Attempt to assess the winds on location. Direction, speed, duration, does it change direction through the day, is it gusty and turbulent? Check the following link for regional winds <https://www.wunderground.com/history/>

Wind Speeds: 1-2 mph: not even noticeable and usually present
 3 mph: a slow walking speed, hardly noticeable
 4-5 mph: a slight breeze
 6-7 mph: a light wind
 8-9 mph: a good breeze
 10 -12 mph: white caps form on the water, its windy.

The following air exchange examples are based on our **360 Wall Vent** average draw rate of 3 cu. ft / min/1 mph of wind. This Exhaust vent is the primary, it powers the ventilation process, it must be subjected to as much wind as possible. These numbers do not reflect the additional gusts, turbulence, rising thermals, or the vent's max draw rate of 4 cu ft.

In average winds a 20' would need 1 Ex, 1 Intake. A 40' 2 Ex and 1 Intake. On the last example below with the 53', a second intake vent is recommended.

Example		Volume	Exhaust Vents	Average wind speed / day	Exhausted air volume / hr	Completed air exchanges / day
Example 1	20' container	1300 cu ft.	1	3 mph	540	10
	40' container	2600 cu ft.	1	3 mph	540	5
Example 2	20' container	1300 cu ft.	1	5 mph	900	17
	40' container	2600 cu ft.	1	5 mph	900	8
Example 3	40' container	2600 cu ft.	2	5 mph	1800	16
	53' High cube	3900 cu ft.	3	5 mph	2700	16

Important Note: This is to show the relevance of wind speed. If low, more vents might be required. In some locations 10 mph is common; if that is the case a 40' container might only need 1 exhaust primary @ 16 exchanges /day.

Air Intake (a passive vent that feeds the exhaust "360 Wall Vent"): Recommend 1 Intake for every 2 Exhaust Vents

If a container is almost air-tight, intake vents are required. Do not count on the small rectangular stock vents, the actual air passageway is smaller than a dime. With three exhaust vents you should consider adding a second intake vent. In the event you already have a passive vent such as the metal hooded units, they will also work.

How Many Air Exchanges? Ten air exchanges per day in the PNW might be sufficient to eliminate condensation but not necessarily in Florida.

Arizona might get by with less than 10 a day. At this point it appears the exchange range can vary from 10 -20 / day. Every climatic region is going to be a different, that is why its beneficial to have as many things in your favor as possible, such as the first few points in "8 steps to dry"

Now that you have an idea for vent requirement, installation location is important to catch the most wind as possible. Please see "**Vent Location**".