

## Bathroom Ventilation

The following are guidelines for ventilating both large and smaller bathrooms using intermittent or continuous ventilation.

### Small rooms:

For bathrooms up to 100 square feet in area, HVI recommends that an exhaust fan provide 1 CFM per square foot (approximately eight air changes per hour) to properly ventilate the bathroom.

### **Example:**

**Bathroom is 8'x5' (with 8' ceilings). Multiply 8 x 5 = 40ft.**

**Bathroom area is 40ft.**

**At 1 cfm per square foot the minimum recommendation is a fan rated at 40 cfm.**

### Larger rooms:

For bathrooms above 100 square feet in area, HVI recommends a ventilation rate based on the number and type of fixtures present, according to the following table:

<i>Toilet</i>	<i>50 CFM</i>
<i>Shower</i>	<i>50 CFM</i>
<i>Bath Tub</i>	<i>50 CFM</i>
<i>Jetted Tub</i>	<i>100 CFM</i>

Note: Enclosed toilet rooms must have an operable window or a fan for ventilation.

### **Example:**

**The bathroom is 20'x12'. There is a tub (without jets), a shower enclosure and an enclosed toilet.**

**Each fixture requires 50 cfm:**

<b>Tub</b>	<b>50 cfm</b>
<b>Shower</b>	<b>50 cfm</b>
<b>Toilet</b>	<b><u>50 cfm</u></b>
<b>Total</b>	<b>150 cfm</b>

**You have 2 options:**

- 1. Install a 50cfm fan over the tub, one in the shower and in the water closet. This method is very effective and will provide ventilation where you need it, when it's needed.**
- 2. Another option is to install one 150 cfm fan. The air will then be pulled through the entire room and exhausted at a central location.**

### Location of exhaust points:

Typically the exhaust points shall be located over or near the shower or tub and in an enclosed water closet.

With windows closed, exhausted air will be replaced by makeup air from adjacent rooms or forced air system registers. HVI recommends that the exhaust points are located away from the supply, thereby pulling the supply air through the room. Bathroom doors need to be undercut to allow makeup air to enter the room.

*Duration of ventilation:*

HVI recommends that the fan be left on for 20 minutes after use of the bathroom. A timer is a good solution, allowing the fan to turn off automatically at the proper time.

For steam showers it is best to have a separate fan in the steam room that can be turned on after use.

*Continuous ventilation:*

Alternatively, ventilation may also be provided on a continuous basis at other rates. This may complement the use of fans to provide the HVI recommended rates.