

Why bathroom fans don't work

Most homes have a bathroom fan. Its purpose is to remove humidity and odors from the bathroom. For a bathroom fan to work properly, it must be sized and installed correctly.

A bathroom fan's performance is determined by: 1) the cubic feet per minute airflow of the fan; 2) its installation location; 3) the size of the ductwork exhausting the air from the bathroom; 4) the length of the ductwork run; 5) how the ductwork is run; 6) the amount of fan run-time and 7) cleanliness of the grill and fan blades.

Just because you can hear the fan running does not mean it is working properly. Condensation on the bathroom mirrors during showers or baths while the bathroom fan is running is an indication that the bathroom fan is not performing properly.

The majority of bathroom fans are: undersized, installed incorrectly and not allowed enough run time. A bathroom fan should be sized for 1 cubic foot per minute of square foot of bathroom space. This is equal to eight air exchanges per hour. It should be installed close to the source of moisture and vented to the outside.

Many times exhaust fans are vented directly into the attic without any ductwork. When moisture is vented into the attic and not to the outside, the insulation becomes wet and may create other problems such as mold and mildew. In addition wet insulation loses its insulating properties and may cause structural problems in the ceiling.

Even if the fan is properly located and sized, airflow can be restricted by not properly sizing or installing the ductwork. The ductwork is usually insulated flex tubing. It should be a minimum of 4 inches in diameter and placed in a straight line to the soffit or vent. 4-inch diameter ducting allows for longer runs with no airflow restriction. Any bends in the ductwork will restrict airflow. If it is draped over trusses, moisture will collect in the low hanging areas of the ductwork and block airflow.

A properly sized bathroom fan should run a minimum of 10 minutes after showers or baths. Ten minutes allows for a complete exchange of air in the bathroom. Many of the newer bathroom exhaust fans have built-in humidity sensors that can be set for a specific humidity level. These fans automatically turn on and off to maintain the preset humidity level. They also are very quiet. Bathroom exhaust fans grill and blades should be cleaned monthly. An indication of a dirty grill and fan blades is a noisier fan.



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