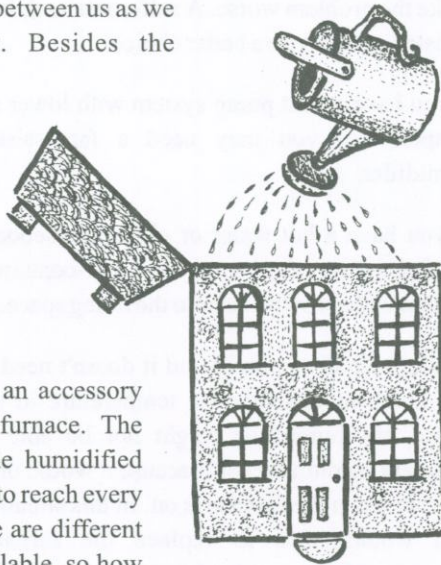


Editorial

The thirsty house: How to choose a humidifier

In last winter's issue of *An Engineer's Opinion*, we talked about the effects of excess moisture, and in particular, we looked at the effects of high levels of humidity on your health. But too little humidity also causes problems. We can all remember the drafty houses of our youth and the sparks between us as we walked along carpets. Besides the nuisance of static electricity, chronically dry indoor air can cause chapped lips, itchy skin, headaches, and nosebleeds. Fortunately, the advent of forced-air heating systems allowed the development of the whole-house humidifier, an accessory that is installed in the furnace. The furnace fan circulates the humidified air through the duct work to reach every area of your home. There are different styles of humidifiers available, so how do you select the one that's right for you? In this special issue of *An Engineer's Opinion* we provide answers to a number of commonly asked questions about humidifiers. We hope this will help you choose the right humidifier *and* the right contractor to solve your problems with dry indoor air.



from dry indoor air. These include extensive interior wood finishing, pianos, antiques, and artwork.

What types of humidifiers are available?

Whole-house humidifiers are available in two forms: drum and flow-through style. The drum type is the most commonly used today. It is relatively inexpensive and easy to install. However, we now know that it has one important drawback: its source of moisture is a pan of standing water. If the humidifier is not regularly maintained, this water pan easily becomes a breeding ground for algae, molds, and bacteria. The air humidified with this germ-laden water then circulates into every room in the house. Because very few drum-style humidifiers are well maintained, they are no longer recommended.

Growing in popularity is the flow-through style humidifier. In this type of humidifier, water continuously flows through the humidifier. Any water that does not evaporate into the air stream goes to the drain. There is no standing water left in the humidifier to promote the growth of germs. It is also easy to maintain and relatively inexpensive.

In addition to the drum and flow-through styles of whole-house humidifiers, there are also self-contained flow-through style humidifiers which have their own fan to blow water vapour into the air stream.

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An Engineer's Opinion

An Engineer's Opinion is published to assist homeowners in creating the healthiest, most comfortable environment in their homes at the most reasonable cost. If you have questions, criticism, or input, we want to hear them. Please write or call me personally.

Roger Grochmal, P.Eng.,
President

How do I know if I need a humidifier?

Not every home needs a humidifier. The signs of low humidity include those mentioned above, as well as cracks in floors and furniture, and dry sore throats and nasal passages. Additionally, many homes have special features which particularly need protection

**What is
the ideal
humidity level
in my home?**

The relative humidity inside your home should be between 30 and 50%. Higher levels not only promote the growth of germs, molds, and dust-mites, but they also increase the off-gassing of chemicals such as formaldehyde. Lower humidity levels aggravate respiratory problems and encourage the growth of some bacteria and viruses.

These are particularly useful where airflow restrictions exist. They are also used in homes that do not have duct work. Finally, steam humidifiers are available for special situations that require large volumes of humidity and accurate control, such as a home containing antiques or artwork.

Which humidifier should I get for my home?

When you shop for a humidifier you need to consider factors such as drain accessibility, airflow restrictions, the heating system type, and the furnace size. The following are general guidelines for a few common situations.

- ◆ If there is no access to a floor drain, wash tub, or plumbing drain then the drum-style humidifier may be the only option available since it does not require a drain.
- ◆ If the airflow in the duct system is restricted, the installation of a bypass-style humidifier may make the problem worse. A self-contained, fan-assisted unit may be a better choice.
- ◆ If you have a heat pump system with lower air temperatures you may need a fan-assisted humidifier.
- ◆ If you have a hot water or electric baseboard heating system, then you need a self-contained system with its own duct into the living space.
- ◆ If a furnace is oversized and it doesn't need to run much to maintain the temperature in the house, the humidifier might not be able to maintain humidity levels because it would only operate when the furnace is on. In this situation you would need to replace the furnace. However, since oversized furnaces are usually

older, less efficient models anyway, you'll be able to maintain proper humidity levels, save energy, and save operating costs by upgrading to a newer furnace.

- ◆ If you need a condensate pump to get the water to a drain make sure it goes to an inside location and not outside to prevent a frozen drain pipe in the winter.

How can I ensure a reliable installation?

To ensure a reliable humidifier installation, shop for the contractor first and then the unit. For example, some humidifiers are manufactured with cheaper components which do not hold up in the long run. Since field experience is the only way to know which units are the most reliable, you should speak with a licensed HVAC contractor who has experience servicing humidifiers. A contractor who knows what he is doing will install a proper water shutoff valve in the water supply pipe and not the piercing valve that comes with the humidifier. A piercing valve eventually fails, resulting in the unpleasant mess of a flooded basement.

What do I have to do to look after my humidifier?

Like any other piece of mechanical equipment, a humidifier needs to be maintained regularly. You need to clean a drum-type humidifier every month to prevent a potential health hazard. Clean the pan to remove scale and sludge and replace the foam pad. Flow-through style humidifiers only need annual maintenance: clean out the drain pan, flush the drain line, and change the water panel. Be sure to investigate the cost of replacement water panels as they can vary significantly in price from model to model.



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