

Home Tips Everyone Can Use

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Seal Your Home's Envelope for Savings

An average home loses up to 30 percent of its heating and cooling energy through air leaks, with the most significant leaks occurring around windows and doors. To stop air leaks and slow down the money leaks caused by high heating and cooling bills, it's important to seal all air leaks around windows and doors.

In the past, builders and homeowners relied on air leakage, or infiltration, to provide ventilation in a home. But relying on air leakage can be costly because it can't be controlled. For example, during cold or windy weather, too much air can enter a house, causing uncomfortable conditions and high heating bills. During warm and less windy weather, not enough air may penetrate the house's envelope. And heavy air infiltration can eventually lead to moisture control problems if moldy or dusty air enters through attics or foundations. The strategy recommended today in both older homes and new construction is to reduce air leaks as much as possible and to provide controlled ventilation when needed.

First, how can you tell if a home is leaking air? Professionals can conduct a home energy audit, but sometimes a do-it-yourself examination can provide the right information, as well. A home owner can perform a simple test by holding a lit stick of incense or a piece of rope near window and door frames where drafts might be expected. Turn on your bathroom fans (and kitchen exhaust if it vents to the exterior). This will create a pressure differential inside the home and pull drafts inside where they exist. The movement of the smoke near the window and door locations will provide proof of air leakage.

Weather-stripping is an effective solution to seal moveable joints such as those found around windows and doors. Once it is determined where the weather-stripping should be applied, it is easy to calculate the approximate amount of stripping needed by measuring doors and windows and adding ten percent extra to the total to account for waste or incorrect measuring.

Weather-stripping should be applied to dry surfaces when the temperature is above 20 degrees Fahrenheit. Choose a product for each specific location. Felt and open-cell foams tend to be inexpensive, but they are susceptible to weather, visible, and inefficient at blocking airflow. However, since these foams have the advantage of being easy to install, they can be useful in low-traffic areas. Vinyl is slightly more expensive, but holds up well and resists moisture. Tubular rubber and silicone weather-stripping are relatively expensive, and can be tricky to install, but they create an excellent seal. Some types come with a flange designed to fit into pre-cut grooves in the jambs of newer doors. Metal weather-stripping using bronze, copper, stainless steel, or aluminum will last for years and is affordable. This option also may be more in keeping with the style of an older home, whereas vinyl might look out of place.

Gaps between the exterior trim and the door, or between the trim and siding, can create a wind tunnel directing cold air directly inside. These gaps can be sealed with an exterior latex caulk, which, at \$5 for a ten-ounce tube, will pay for itself many times over in utility bill savings.

