

Brickley Plumbing & Electric, Inc.

Home Comfort News Fall 2024



Who Is at Risk of Radon Exposure? Radon is an odorless, invisible radioactive gas that is naturally released from rocks, soil, and water. **It is the leading environmental cause of any cancer** and the second leading cause of lung cancer, after smoking. Radon is responsible for approximately 21,000 deaths per year. Everyone is exposed to radon, but some populations are at higher risk of exposure than others.



Many factors influence the risk of radon-related lung cancer: such as age during exposure, duration of exposure, the concentration of the radon, and if you smoke or don't smoke ciga-

rettes, the time spent and the concentration of the radon in different areas of your home or office, the climate and the time of the year.

Did you know, due to the size differences and shape of **children's lungs they have a higher chance of estimated radiation exposure** than adults do. Children also have breathing rates faster than those of adults. The risk of lung cancer in children resulting from exposure to radon may be almost twice as high as the risk to adults exposed to the same amount of radon. It is estimated that approximately 6 million homes in the United States have radon levels above 4 picocuries per liter (pCi/L), which is the remediation level EPA recommends.

Everyone is at risk to radon exposure, and the health risk increases daily, so have your home tested today.

FALL—HVAC Preventive Maintenance :

Regular HVAC service and maintenance are key to extending the lifespan of your unit and helping your system to maintain energy.

Routine HVAC maintenance checks can help keep your system running smooth year round and help prevent costly future repairs.

Packages include checking and cleaning components and changing the air filter.

With an HVAC Customer Care Package you will receive priority scheduling and discounts on all HVAC services to make staying on top of your HVAC maintenance easier.

Understanding The New HVAC R-454B Refrigerant

The HVAC industry is constantly changing, especially in relation to new technology, safety, and environmentally minded advances.

The Environmental Protection Agency is requiring HVAC manufacturers to stop producing products with R-410A starting Jan. 1, 2025.

Indeed, this is a critical move on numerous levels, from production and costs to best practices and environmental implications. And, as always, with change comes questions and concerns. As the industry adopts greener alternatives, you should understand the what, how and why.

R-454B – WHAT IT IS AND WHY?

R-454B is a blend of hydrofluoroolefins (HFO) and hydrofluorocarbons (HFCs).

Perhaps the biggest reason that R-454B is an improvement over the 410 variant is Mother Earth.

For example, R-454B has a lower Global Warming Potential (GWP) and will have less environmental impact. In fact, R-454B's GWP is just 466, roughly 75% lower than R-410A's GWP of 2,088. In short, this transition is a big step forward in the fight against greenhouse gas emissions, ensuring a healthier future for everyone.

In addition to environmental benefits, R-454B proves itself a worthy replacement for 410A in terms of safety. New systems using R-454B refrigerant are more energy efficient, reducing greenhouse gas (GHG) emissions from the use of electricity, and the refrigerant itself has low-

er GWP. It's more energy efficient.

Although you may have never heard of it until today, the R-454B refrigerant has already demonstrated exceptional performance during American Standard's field trials in the U.S. Department of Energy's (DOE) Cold Climate Heat Pump Challenge.

R-454B refrigerant is quickly becoming the HVAC industry standard for use in air conditioners and heat pumps and you can expect to see it increasingly used in newly manufactured units.

Estimates suggest R454B could be **over three times more expensive than R410A**. The prices can vary depending on the manufacturer.

While the difference in the COPs of R-410A and R-454B are negligible, the same can't be said for their capacities. This means that while operating costs are largely similar, R-454B is not able to provide like-for-like thermal performance for the same operating costs as R-410A. For example, if an R-410A unit was designed to condition a space to 70F, an R-454B unit would need to use more electricity to meet that requirement. This means that – in most cases – **R-454B is not a direct drop-in replacement for R-410A**. Only looking at COP may indicate otherwise, but capacity must also be considered.

Even with the new regulations regarding refrigerants, you will still be able to get HVAC service on your AC unit that uses an older refrigerant and HVAC technician will have still access to supplies.

Gas or Electric Tankless Water Heaters

What's the difference? Well, the most significant difference between gas and electric tankless water heaters is their source of energy to heat water. Gas tankless water heaters use natural gas or propane to heat water, whereas electric models rely solely on electricity.

Will they save me any money? Yes, despite having different energy sources, electric and natural gas tankless water heaters are still more efficient than conventional water heaters. Tankless water heaters heat water only when needed in a home, differing from traditional water heaters that keep water in a storage tank heated at all times, requiring more energy consumption.

Here's a short breakdown of how gas and electric water heaters heat water differently from each other.

- **Electric tankless water heaters:** When water first enters any tankless water heater, it activates a flow sensor, which kickstarts the heating elements. An electric water heater has heating elements made out of metal that heat up when an electric current passes through. This heat is then transferred to the incoming water and becomes available as hot water at a fixture.
- **Gas tankless water heaters:** Like electric tankless water heaters, gas-powered tankless units have a flow sensor that starts the combustion process. A gas valve opens and allows the gas to enter the chamber, where a spark

ignites it and produces a flame. The flame heats the exchanger, transferring the heat to create hot water.

Electric and gas tankless water heaters can provide homeowners with hundreds of dollars in energy savings. Nonetheless, these savings can be affected by the operational costs due to electricity and gas rates. If your area has high electricity rates, for example, you may have an increased electricity bill each month.

Electricity is considered more environmentally friendly than gas because it produces fewer greenhouse emissions. Gas tankless water heaters release these greenhouse gases as a byproduct of their combustion process to heat water. In addition to having different energy efficiency ratings, gas and electric tankless water heaters have different water flow rates.

Electric tankless water heaters tend to have lower GPMs due to limitations on their heating elements, whereas gas tankless water heaters have higher heating capacities. Gas is able to provide a quick heating source, allowing gas tankless water heaters to provide hot water faster and at a higher flow rate.

Luckily for homeowners, technicians can help find the right tankless water heater, whether gas or electric, that best meets a home's hot water needs.



Board Approves AFCI Requirement:

Alabama homes will be required to meet standards to prevent fires caused by arcing circuits.

An arc-fault circuit interrupter (AFCI) or arc-fault detection device (AFDD)^[1] is a circuit breaker that breaks the circuit when it detects the electric arcs that are a signature of loose connections in home wiring. Loose connections, which can develop over time, can sometimes become hot enough to ignite house fires. An AFCI selectively distinguishes between a harmless arc (incidental to normal operation of switches, plugs, and brushed motors), and a potentially dangerous arc (that can occur, for example, in a lamp cord which has a broken conductor).

These AFCI's will now be required in bedrooms and family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreation rooms, closets, hallways and similar rooms or areas through out residential homes.

The Alabama Energy and Residential Codes Board (AERC) approved the publication of several amendments for the Residential Building Code and the most important being the inclusion of the arc fault circuit interrupter (AFCI) requirement.

The amendment requires AFCIs to be installed in all homes, but the ruling still leaves it up to the city or county to decide how many should be installed in each home.

Scottsboro, AL 35768

203 East Willow Street

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