

# Five things property owners should know about boiler maintenance



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When your building uses a boiler as a source of heat, you're operating a potentially dangerous piece of equipment that could cause an explosion, a fire, carbon monoxide leaks or fuel leaks. Even a less extreme malfunction could cause freezing pipes or other damage to your property. The responsibilities of operating a boiler are serious enough that many states and cities require annual inspections of certain boilers. Here's what you need to know:

## 1. Know the boiler inspection laws in your jurisdiction.

Many states and jurisdictions within states (the two may differ in terms of regulations) require annual boiler inspections for certain types of pressure vessels. Those that do usually collect a certificate fee and impose penalties for noncompliance. Check the National Board Synopsis of Pressure Vessel Laws (<http://www.nationalboard.org/viewallsynopses.aspx>) to see what's required in your jurisdiction.

## 2. Respect the potential dangers of operating a boiler.

In a sealed pressure cooker such as your boiler, the boiling point of water increases as the pressure rises, resulting in superheated water. At a pressure of ~15 psi (pounds per square inch) above the existing atmospheric pressure, water in a pressure cooker can reach a temperature of up to 250 degrees Fahrenheit, depending on altitude. Another basic law of physics to consider with boilers is that when water flashes, or boils violently, to steam, it will always attempt to increase to 1700 times its original volume.

## 3. Learn the basics of boiler maintenance, and perform your own inspections between professional service visits.

Check your boiler room regularly and walk around the boiler checking the water level, any water leakage, signs of overheating or evidence of soot or flue gas leaks. Keep the boiler room free of debris and don't use it as a general storage area. Boiler manufacturers have made many improvements over the years and developed many automatic devices for safety and easier maintenance. However, you should still understand the boiler's basic operation and regularly check key components, such as:

- The Pressure Relief Device (PRD). The PRD is the primary safety device installed on low-pressure boilers to protect against boiler over-pressurization. Test it regularly according to manufacturer's instructions.
- Pressure and temperature gauges. Check these regularly to ensure they are within safe ranges.
- Flame failure scanner. Verify that some type of flame-sensing device is in use to ensure that flame conditions are safe on the boiler burner. It should stop the boiler fuel supply and sound an alarm if there is flame failure during operation. You should check the burner operation and flame pattern weekly and listen for unusual noises, smells or fuel leakage.

#### 4. Annual servicing and maintenance not only keeps you in compliance, it protects your investment.

Be sure to use an experienced, licensed inspector and be aware of what items they should be observing, namely:

- ✓ Low water fuel cutoff operation
- ✓ Safety/relief valve condition and testing
- ✓ Adequacy of combustion and draft air
- ✓ High temperature control and limits
- ✓ Boiler safety valve operation
- ✓ Safety relief valve leakage
- ✓ Remote shut-off switches
- ✓ Pressure and temperature gauges
- ✓ Boiler room housekeeping
- ✓ Identify combustibles in boiler room
- ✓ Burner control system tests

#### 5. Take advantage of your property insurance company's boiler inspection service if they offer it.

If your insurance company has the experience and expertise to perform boiler inspections and is licensed to do so in your jurisdiction, there's no reason to pay another boiler inspector for this service. The cost of the inspection may be included in your premium and most likely the insurer will need to inspect the boiler for underwriting purposes anyway.



**Keeping up with boiler maintenance will help you keep your tenants happy, reduce your chances of a potentially serious situation and help you stay in compliance with local laws.**

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