

Tips and Solutions to Solve Water Heater Venting Issues

In situations where a water heater is found to have draft spillage into the combustion zone or fails Combustion Appliance Zone (CAZ) testing, Building Performance Institute (BPI) standards require that the situation be remedied. While the replacement of the water heater with a power-vented unit is sometimes an appropriate solution, other measures must be considered and implemented as appropriate.

1. Inspect and clear the flue pipe of any blockage: Typically this can be accomplished by unscrewing and disconnecting the flue pipe from the appliance and chimney. Use of a telescoping mirror is an easy and effective method to inspect the condition of the chimney for any blockage. A second inspection from the top of the pipe may determine whether the pipe is crushed or rotted, or identify blockages such as bird nests. Removal of such blockages is often an easy repair.

2. Vent reconfiguration: If the issue has not been resolved after inspecting and clearing the flue pipe of any blockage, the contractor should examine the flue pitch and orientation of the appliance. If the pitch is incorrect, or if the flue configuration consists of more than two elbows, long runs or other elements that may cause air resistance, improvements to the flue should be considered.

At junctions where the heating system vent merges with the water heater vent, problems may be caused by pressure differences in the exhaust gasses. If the water heater vents into the chimney below the heating system, or if the water heater vents into the heating system flue at a 90-degree angle, back drafting may sometimes be the result. Adjustments to the flue arrangement or installation of a 45-degree angle junction may solve the problem.

3. Power vented heating systems: If the home has a power vented heating system with an open air intake to the basement, this may cause a decrease in CAZ pressure and the draft of the water heater may fail as a result. Extending the air intake to the outside may solve this problem. In situations where the power vented heating system shares a vent with the water heater, the power vented heating system may cause a positive pressure in the water heater vent. Adjustments may be made to the vent to ensure the water heater vent is under negative pressure when the heating system is operating.

4. Relocating the unit: Sometimes the water heater is located too far from the chimney; relocating the unit closer to the exhaust point may improve the pitch and shorten the run before exhaust.

5. Installation of a weighted damper into the CAZ: This approach creates an additional path for air to enter and may improve CAZ depressurization. This opening serves as the “path of least



resistance” for fresh air to flow into the CAZ, typically correcting a draft issue. (In some situations, however, it may not address a spillage issue.)

6. Install a chimney liner: If a chimney is not lined, lining may enhance the draft. The installation of a chimney liner is a code requirement in most areas when a water heater is orphaned. The lining must be appropriately sized. The chimney must be inspected for stability: a crumbling or deteriorated chimney is not a good candidate for chimney lining.

In evaluating the options above, age of the water heater and relative cost of measures must be taken into consideration. Keep in mind that local building codes must be followed. In some instances, specific codes related to mobile homes may also apply. Please be sure to consult with your Regional Rep/Account Manager when proposing these strategies.