

STATE OF UTAH

WEATHERIZATION ASSISTANCE PROGRAM

Water Heater

WATER HEATER

INITIAL PREP & SAFETY CHECKS

1. Check for gas leaks (Tif88 or equivalent) If major leaks are found **STOP!** Move yourself and all occupants to the outside of the residence, call Questar gas and your supervisor. **DO NOT** operate any electrical switches inside the residence. Repair any minor leaks as needed.
2. Check gas shut off at water heater; it must be accessible and easily turned off by hand, if not replace. Check for a flexible gas connector. If kinked or damaged, replace it and record.
3. Check venting system for clearances and damage. Repair as needed and record.
4. Check for and record the source and amount of combustion air; if combustion air is not adequate correct as needed and record. adequate volume/ confined space = 50 CU.FT per 1000 BTU
outside air 2 openings vertical or direct =1 SQ. IN per 4000 BTU outside air 2 openings horizontal = 1 SQ. IN per 2000 BTU
outside air 1 opening = 1 SQ. IN. per 3000 BTU
direct vent appliance
5. Check for and record any other safety and code concerns; i.e.: flame rollout indicators, excessive rust in burner area, draft hood spillage indicators, water leaks.
6. Record the hot water temperature.

Hot water temperature = _____

7. Record the water heater location.

Location = _____

8. Mark the water heater temperature dial at its present setting.

Current temperature setting. _____

WATER HEATER TEST

9. Drill a test hole in the draft hood. Combustion analysis should be taken before the draft hood; this hole will allow you to insert your probe down into the flue gases before dilution air is added through the draft hood.
10. If the hot water tank shares combustion air or venting with other appliances, turn on those appliances. It is required that they stay on throughout this test.
11. Turn up the water heater thermostat dial to the highest setting. It may be necessary to run the hot water in order to keep the water heater on for a full five minutes.
12. Start your watch for a five-minute test.

13. Inspect the flames for any white or lazy signs. Record in the comments. Be sure to replace all burner cover doors when through inspecting.

14. Water heater should have run for at least 5 minutes before taking the following readings. Check combustion analysis; combustion readings should fall within the following range: Oxygen = 6 to 9% Carbon dioxide = 6 to 9% Excess air 35 to 65%. CO levels in exhaust must be below 100 PPM and preferably below 25 PPM; if CO levels cannot be maintained at or below 100 PPM water heater replacement should be considered.

Combustion analysis tape in client file:

- Yes No = WHY NOT _____

CO = _____ PPM

15. Draft measurements should be taken in the exhaust vent above the draft hood and conform to the following:
 • If outside temperature is <30°, draft must be -.02" wc. or greater. **-5 pa or stronger if using digital gauge** • If outside temperature is >30° & <80°, draft must be .01" wc. or greater. **-2.5 pa or stronger if using digital gauge** • If outside temperature is >80°, draft must be -.005" wc. or greater.

-1.25 pa or stronger if using digital gauge

Draft = _____ Outside temp. = _____

Spillage: Yes No

16. Turn the thermostat back to client's original setting.

WRAP UP

17. Install a bolt or vent button in the exhaust vent and draft hood hole.

18. WITH THE CLIENT'S APPROVAL, turn down the water heater thermostat to 120°.

Thermostat set to 120° Yes No

19. Insulate the first 3' of hot and cold water pipe, maintaining at least 6" clearance from the draft hood and single wall vent pipe.

20. If the water heater is not a foam insulated tank (R-7), install a water heater jacket on the body of the tank. (Do not install a jacket if there is a manufacturer's warning label advising against it). Make sure that the jacket is secured with straps, is not near a heat source or P&T, and has no fiberglass exposed.

COMMENTS: _____

