



2.12

STORAGE HEATER TEMPERATURE LIMITS

If this test is being conducted in conjunction with the temperature limit test, the relief valve should be plugged or routed to a drain prior to the test. Additionally, any adapter needed to conduct the electromotive force test, 2.13.4 should be inserted at this time.

Procedure:

1. Verify the dip tube length in the test model agrees with the length specified by the manufacturer. If the design incorporates a tolerance on the dip tube, the longest possible dip tube shall be inserted in the heater for this test.
2. Fill heater with 65 ± 5 F water. Install shutoff valve on outlet water connection. 
3. Install flow-restricting device to restrict flow to 3 gpm.
4. Install a thermocouple in the outlet water line after the flow restriction device.
5. Install a thermocouple probe in the tank at the thermostat level 
6. Operate heater at normal rate and inlet test pressure with the thermostat adjusted to its maximum setting.
7. Operate the heater until thermostat shuts off gas supply, ensuring that the temperature of the water at the thermostat level is as follows. Slight adjustments to the thermostat are acceptable to achieve the proper shutoff point.
 - a. 155F+5F for heaters intended to deliver water not in excess of 160 F. (Section 2.12.1)
 - b. 175F+5F for heaters intended to deliver water in excess of 160F (Section 2.12.2)
8. Immediately draw water at specified draw rate until thermostat functions to initiate gas flow. Stop water draw. Record outlet water temperature measured at the outlet thermocouple location.
9. Continue cycling until outlet water temperature stabilizes as evidenced by three consecutive readings that are stable or decreasing.
10. Compare outlet water temperature to the initial tank temperature. Outlet water temperature cannot increase by more than following:
 - a. 30 F for heaters with max thermostat setting of 160 F (Section 2.12.1)
 - b. 20 F for heaters with max thermostat setting above 160 F. (Section 2.12.2)
11. Outlet water temperature cannot be above following:
 - a. 190 F for heater with 160 F thermostat settings. (Section 2.12.1)
 - b. 200 F for heater with thermostat settings above 160 F (Section 2.12.2)