

- (5) Burners must not expel liquid fuel through air openings when operating at prevailing pressure.
- (6) Burners must have a proper liquid fuel air mixture to ensure smooth ignition of the main burner.

C.7.0 Method of Test

- (1) The flue gas, venting, safety, and operating controls of the appliance must be checked by the installer to ensure their proper and safe operation.
- (2) Method of test—atmospheric, induced draft, or fan assisted types.
The appliance must be allowed to operate until the stack temperature becomes stabilized, after which a sample of the undiluted flue products must be taken from the appliance flue outlet. The sample taken must be analyzed for carbon monoxide, carbon dioxide, and oxygen. Stack temperature must be noted.

Note:

Appliance designs incorporating induced-draft assemblies may require a flue gas sample to be taken ahead of the draft regulator or induced draft fan.

- (3) Performance standards for atmospheric type must meet:
 - (a) Minimum of 75 percent efficiency as determined by flue gas analysis method at appliance flue outlet.
 - (b) Carbon monoxide concentration in flue gas not greater than 0.04 percent.
 - (c) Stack temperature not greater than 700°F (371°C), plus ambient.
 - (d) Carbon dioxide concentration between 8 percent and 13 percent.
 - (e) Oxygen concentration between 4 percent and 10 percent.
 - (f) Smoke test no higher than #2 for light oils or #4 for oils heavier than #4.
 - (g) Draft must be in accordance with the burner manufacturer's specifications.
- (4) Performance standards for induced-draft or fan-assisted types:
 - (a) Minimum of 75 percent efficiency, as determined by flue gas analysis method at appliance flue outlet.
 - (b) Carbon monoxide concentration in flue gas not greater than 0.04 percent.
 - (c) Stack temperature not greater than

- 700°F (371°C), plus ambient.
- (d) Carbon dioxide concentration between 8 percent and 13 percent.
- (e) Oxygen concentration between 4 percent and 10 percent.
- (f) Smoke test no higher than #2 for light oils, or #4 for oils heavier than #4.
- (g) Draft must be in accordance with the burner manufacturer's specifications.

Note:

Induced draft- and fan-assisted types of appliances may require a sample be taken after the induced-draft fan that may cause oxygen figures in excess of the limits stated. In such cases, safe liquid fuel combustion ratios must be maintained and be consistent with approvals and listings of the appliance.

- (5) Method of test—power type
The appliance must be allowed to operate until the stack temperature becomes stabilized; after that, a sample of the undiluted flue products must be taken from the appliance flue outlet. The sample must be analyzed for carbon monoxide, carbon dioxide, and oxygen. Stack temperature must be noted.
- (6) Performance standards for power type
 - (a) Minimum of 80 percent efficiency as determined by flue gas analysis method, at the appliance flue outlet.
 - (b) Carbon monoxide concentration in the flue gas not greater than 0.04 percent.
 - (c) Stack temperature not greater than 700°F (371°C) plus ambient.
 - (d) Carbon dioxide concentration between 8 percent and 13 percent.
 - (e) Oxygen concentration between 4 percent and 10 percent.
 - (f) Smoke test no higher than #2 for light oils or #4 for oils heavier than #4.
 - (g) Draft must be in accordance with the burner manufacturer's specifications.
- (7) After completion of the test of newly installed oil- or liquid-fuel-burner equipment as provided in this section, the installer shall file with the Authority Having Jurisdiction complete records of the test on a form approved by the Authority Having Jurisdiction. The tag stating the date of the test and the name of the installer must be attached to the appliance at the main valve.
- (8) (A) The concentration of oxygen in the