

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

**RULE 74.22 - NATURAL GAS-FIRED, FAN-TYPE CENTRAL FURNACES**

*(Adopted 11/9/93)*

A. Applicability

1. The provisions of this rule apply to any person who sells, offers for sale, or installs any natural gas-fired, fan-type central furnace in this District.
2. The provisions of this rule shall become effective on May 31, 1994.

B. Requirements

1. No person shall sell, offer for sale, or install in this District any natural gas-fired, fan-type central furnace with NO<sub>x</sub> (oxides of nitrogen) emissions in excess of 40 nanograms per joule of heat output.
2. No person shall sell, offer for sale, or install in this District any natural gas-fired, fan-type central furnace unless it is certified and identified in accordance with Section C.

C. Certification and Identification

1. The manufacturer shall have tested or shall test each appliance model in accordance with Section E.
2. The manufacturer or authorized manufacturers' representative shall submit a list of complying furnaces to the APCO with the following information:
  - a. Name and address of manufacturer.
  - b. Brand name.
  - c. Model number and heat input rating, as it appears on the furnace rating plate.
  - d. A description of the furnace and specifications for each model being certified.
  - e. A signed statement that each furnace on the list is in compliance with Section B. The statement shall include the test method used and the test results.

3. The manufacturer shall display the model number of the furnace complying with Section B on the shipping carton and rating plate.

D. Exemptions

Units installed in manufactured housing (mobile home) shall be exempt from the requirements of this rule.

E. Test Methods

1. Operation of the furnace shall be in accordance with the procedures specified in Section 3.1 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
2. Compliance with the emission requirements in Section B shall be determined using ARB Method 100, or other EPA approved method, for NO<sub>x</sub>. NO<sub>x</sub> samples shall be taken simultaneously with the CO<sub>2</sub> sample specified in Section 3.1 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
3. The following calculation shall be used to determine the nanograms of NO<sub>x</sub> per joule of heat output:

$$N = \frac{4.566 \times 10^4 \times P \times U}{H \times C \times E}$$

Where:

- 4.566 x 10<sup>4</sup> = unit conversion factor [ppm (parts per million) to nanograms and Btu to joules]
- N = nanograms of emitted oxides of nitrogen per joule of heat output
- P = concentration of NO<sub>x</sub> in flue gas in parts per million by volume
- U = dry volume percent of CO<sub>2</sub> in flue gas necessary for stoichiometric combustion.
- H = gross heating value of fuel, Btu/cu.ft. at 60°F and 30 in. Hg
- C = dry volume percent of CO<sub>2</sub> in the flue gas, assuming complete combustion and no CO present
- E = efficiency, as defined in Section 4.2.35 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N

F. Violations

Failure to comply with any provision of this rule shall constitute a violation of this rule.

G. Definitions

1. "Fan-Type Central Furnace": A self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that has a rated heat input capacity of less than 175,000 Btu per hour and, for combination heating and cooling units, a rated cooling capacity of less than 65,000 Btu per hour.
2. "Rated Heat Input Capacity": The heat input capacity specified on the nameplate of the combustion unit. Heat input is the amount of energy consumed in one hour (Btu/hr).
3. "Heat Output": The product obtained by multiplying the efficiency as defined by Section 4.2.35 of the Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N, by the input rating of a natural gas-fired central furnace.
4. "Manufactured Housing": As defined in 42 US Code Section 5402 and California Health and Safety Code Section 18007.
5. "Natural Gas": A mixture of gaseous hydrocarbons containing at least 80% methane by volume as determined by ASTM Method D1945-64.
6. "Rated Cooling Capacity": The cooling capacity specified on the nameplate of the cooling unit. Cooling capacity is the amount of heat energy the cooling system can displace in one hour (Btu/hr).
7. "Unit": Any fan-type central furnace as defined in Subsection G.1 of this rule.