

§ 3280.711

any motor-driven air intake discharging into habitable areas.

(e) The area in which cooking appliances are located shall be ventilated by a metal duct which may be single wall, not less than 12.5 square inches in cross-sectional area (minimum dimension shall be two inches) located above the appliance(s) and terminating outside the manufactured home, or by listed mechanical ventilating equipment discharging outside the home, that is installed in accordance with the terms of listing and the manufacturer's instructions. Gravity or mechanical ventilation shall be installed within a horizontal distance of not more than ten feet from the vertical front of the appliance(s).

(f) Mechanical ventilation which exhausts directly to the outside atmosphere from the living space of a home shall be equipped with an automatic or manual damper. Operating controls shall be provided such that mechanical ventilation can be separately operated without directly energizing other energy consuming devices.

[49 FR 32012, Aug. 9, 1984, as amended at 58 FR 55018, Oct. 25, 1993]

§ 3280.711 Instructions.

Operating instructions shall be provided with each appliance. These instructions shall include directions and information covering the proper use and efficient operation of the appliance and its proper maintenance.

§ 3280.712 Marking.

(a) Information on clearances, input rating, lighting and shutdown shall be attached to the appliances with the same permanence as the nameplate, and so located that it is easily readable when the appliance is properly installed or shutdown for transporting of manufactured home.

(b) Each fuel-burning appliance shall bear permanent marking designating the type(s) of fuel for which it is listed.

§ 3280.713 Accessibility.

Every appliance shall be accessible for inspection, service, repair, and replacement without removing permanent construction. For those purposes, inlet piping supplying the appliance shall not be considered permanent con-

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struction. Sufficient room shall be available to enable the operator to observe the burner, control, and ignition means while starting the appliance.

[58 FR 55018, Oct. 25, 1993]

§ 3280.714 Appliances, cooling.

(a) Every air conditioning unit or a combination air conditioning and heating unit shall be listed or certified by a nationally recognized testing agency for the application for which the unit is intended and installed in accordance with the terms of its listing.

(1) Mechanical air conditioners shall be rated in accordance with the ARI Standard 210/240-89 Unitary Air Conditioning and Air Source Unitary Heat Pump Equipment and certified by ARI or other nationally recognized testing agency capable of providing follow-up service.

(i) Electric motor-driven unitary cooling systems with rated capacity less than 65,000 BTU/Hr when rated at ARI Standard rating conditions in ARI Standard 210/240-89 Unitary Air-Conditioning and Air-Source Heat Pump Equipment, shall show energy efficiency (EER) values not less than 7.2.

(ii) Heat pumps shall be certified to comply with all the requirements of the ARI Standard 210/240-89 Unitary Air Conditioning and Air Source Unitary Heat Pump Equipment. Electric motor-driven vapor compression heat pumps with supplemental electrical resistance heat shall be sized to provide by compression at least 60 percent of the calculated annual heating requirements for the manufactured home being served. A control shall be provided and set to prevent operation of supplemental electrical resistance heat at outdoor temperatures above 40 F, except for defrost operation.

(iii) Electric motor-driven vapor compression heat pumps with supplemental electric resistance heat conforming to ARI Standard 210/240-89 Unitary Air-Conditioning and Air-Source Heat Pump Equipment shall show coefficient of performance ratios not less than shown below:

COP	
Temperature degrees fahrenheit	Coefficient of performance
47	2.5
17	1.7
0	1.0

(2) Gas fired absorption air conditioners must be listed or certified in accordance with ANSI Z21.40.1-1996, Gas Fired, Heat Activated, Air Conditioning and Heat Pump Appliances, and certified by a nationally recognized testing agency capable of providing follow-up service.

(3) Direct refrigerating systems serving any air conditioning or comfort-cooling system installed in a manufactured home shall employ a type of refrigerant that ranks no lower than Group 5 in the Underwriters' Laboratories, Inc. "Classification of Comparative Life Hazard of Various Chemicals."

(4) When a cooling or heat pump coil and air conditioner blower are installed with a furnace or heating appliance, they shall be tested and listed in combination for heating and safety performance by a nationally recognized testing agency.

(5) Cooling or heat pump indoor coils and outdoor sections shall be certified, listed and rated in combination for capacity and efficiency by a nationally recognized testing agency(ies). Rating procedures shall be based on U.S. Department of Energy test procedures.

(b) *Installation and instructions.* (1) The installation of each appliance shall conform to the terms of its listing as specified on the appliance and in the manufacturer's instructions. The installer shall include the manufacturer's installation instructions in the manufactured home. Appliances shall be secured in place to avoid displacement and movement from vibration and road shock.

(2) Operating instructions shall be provided with the appliance.

(c) Fuel-burning air conditioners shall also comply with § 280.707.

(d) The appliance rating plate shall be so located that it is easily readable when the appliance is properly installed.

(e) Every installed appliance shall be accessible for inspection, service, re-

pair and replacement without removing permanent construction.

[40 FR 58752, Dec. 18, 1975. Redesignated at 44 FR 20679, Apr. 6, 1979, as amended at 58 FR 55018, Oct. 25, 1993; 70 FR 72051, Nov. 30, 2005]

§ 3280.715 Circulating air systems.

(a) *Supply system.* (1) Supply ducts and any dampers contained therein shall be made from galvanized steel, tin-plated steel, or aluminum, or shall be listed Class 0, Class 1, or Class 2 air ducts. Class 2 air ducts shall be located at least 3 feet from the furnace bonnet or plenum. A duct system integral with the structure shall be of durable construction that can be demonstrated to be equally resistant to fire and deterioration. Ducts constructed from sheet metal shall be in accordance with the following table:

MINIMUM METAL THICKNESS FOR DUCTS ¹

Duct type	Diameter 14 in. or less	Width over 14 in.
Round	0.013	0.016
Enclosed rectangular013	.016
Exposed rectangular016	.019

¹When "nominal" thicknesses are specified, 0.003 in. shall be added to these "minimum" metal thicknesses.

(2) *Sizing of ducts for heating.* (i) Ducts shall be so designed that when a labeled forced-air furnace is installed and operated continuously at its normal heating air circulating rate in the manufactured home, with all registers in the full open position, the static pressure measured in the casing shall not exceed 90% of that shown on the label of the appliance. For upflow furnaces the static pressure shall be taken in the duct plenum. For external heating or combination heating/cooling appliances the static pressure shall be taken at the point used by the agency listing or certifying the appliance.

(ii) When an evaporator-coil specifically designed for the particular furnace is installed between the furnace and the duct plenum, the total static pressure shall be measured downstream of the coil in accordance with the appliance label and shall not exceed 90 percent of that shown on the label of the appliance.

(iii) When any other listed air-cooler coil is installed between the furnace and the duct plenum, the total static