



## **New and Replacement Heating Equipment: Single-Family Residential Requirements in the 2009 Energy Code (January 2011)**

### **1. Minimum Heating Equipment Efficiency (new dwelling units, additions > 750 ft<sup>2</sup>)**

New dwelling units, and additions 750 ft<sup>2</sup> and greater, must achieve one credit (two credits if over 5,000 ft<sup>2</sup>) from Table 9-1 (Section 901). **If the building permit application specifies Options 1a, 1b, 1c, or 2, then the minimum efficiencies for heating equipment are:**

**Option 1a:** Gas, propane or oil-fired furnace or boiler with minimum AFUE of 92%, or air-source heat pump with minimum HSPF of 8.5 (HSPF maximum is 65,000 Btu/h).

**Option 1b:** Closed-loop ground source heat pump with a minimum COP of 3.3.

**Option 1c:** Ductless split system heat pumps with zonal control.

**Option 2:** All heating system components installed inside the conditioned space; all combustion equipment to be direct vent or sealed combustion.

### **2. Heating Equipment Sizing (new and replacement heating equipment)**

Heating and/or cooling design load calculations shall be submitted (Section 503.2.2). An equipment sizing form is available at City Hall. In the 2009 Energy Code, there are exemptions from the sizing limit for single-family for:

(a) natural gas- or oil-fired space heating equipment whose total rated space heating output in any one dwelling unit is 40,000 Btu/h or less, and (b) electric resistance heaters under 2 kW. **The previous exemption for equipment with an AFUE of 90% or greater has been deleted.**

### **3. Duct Testing for Air Leakage (new and replacement heating equipment)**

Whenever new (Section 503.10.2) or replacement (Section 101.3.2.6) heating equipment is installed, **air leakage testing of the ductwork is required REGARDLESS of whether the ductwork is being altered** (unless there is < 40 feet of total duct runs in unconditioned space).

New ductwork shall comply with the maximum air leakage rates (Section 503.10.3).

Existing ductwork shall be tested, but no maximum duct leakage rate is specified.

**The duct leakage test report shall be provided to the Building inspector by final inspection.**

### **4. Permanent Certificate (new and replacement heating equipment)**

The type and efficiency of heating (and cooling) equipment, and the tested duct leakage rates shall be written on the permanent Energy Code certificate at the building site (Section 105.4). If a permanent certificate does not exist at the site, then the contractor shall post a permanent certificate containing this information within three feet of the electrical panel.

**The completed certificate shall be posted prior to final inspection by the Building inspector.**

### **5. Other**

The work shall comply with other applicable requirements such as: controls (Section 503.8), duct insulation (Section 503.9 & Table 5-11), pipe insulation (Section 503.11 & Table 5-12), etc.