



Planning & Development Services

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To whom it may concern:

There are several changes coming with the adoption of the **2012 *International Residential Code (IRC)*** and **2012 *International Energy Conservation Code (IECC)***. Some changes will affect the installation of Heating/Ventilating/Air Conditioning (HVAC) systems in new single-family and multi-family dwellings. The changes are aimed at increasing energy efficiency while maintaining healthy air within the home. The following is effective for HVAC installations within the City of Boise and Garden City as of **January 1, 2015**:

- **Mechanical Ventilation.** Mechanical ventilation shall be required when the dwelling unit has less than 5 air changes per hour (see 2012 IRC section R303.4 as amended by the City of Boise). Data has been collected on homes constructed in Boise over the last few years showing that the average air change rates for single family homes at 3.6 air changes per hour (ACH).
- **Ducting of Outdoor Air.** A fresh air duct is an acceptable method to meet ventilation requirements. Provisions are outlined in IDAPA rules. Outdoor air shall be ducted predominantly horizontally to avoid chimney effect and the outdoor air shall not enter the building from the roof. The outside air duct shall terminate in close proximity to the furnace within the plenum and upstream of the filter. The outdoor air duct shall be insulated to minimum of R-6. Outdoor air ducts will contain an accessible back draft damper and be designed to have an open cross section of twenty square inches per one thousand square feet of conditioned space.
- **Sizing of Air Ducts.** The sizing of the outside air duct is calculated as follows:
 - 20 sq. in. duct size for 1,000 sq. ft. of conditioned space gives us factor of .02(20/1,000).
 - A 6" diameter OA duct will serve up to a 1,400 sq. ft. home (1,400 sq. ft. x .02= 28 sq.in.)
 - An 8" diameter OA duct will serve up to 2,500 sq. ft. Home (2,500 sq. ft. x .02= 50 sq.in.)
 - 6" duct is 28.26 sq. in. (3x3x3.14)
 - 8" duct is 50.24 sq. in. (4x4x3.14)
- **Manual J Reports.** The Manual J reports submitted for new construction are required to show the construction quality as semi-tight and the mechanical ventilation will also be required to be shown. The duct sealing will be required to be shown as notable.

- **Duct Tightness Tests.** All single family and multi-family dwellings shall be required to perform a duct tightness test at 4 cfm per 100 square feet of conditioned floor area and tested at 25 pascals. Exception: This test is not required if all ducts and air handlers are within the building thermal envelope.
- **Air handlers** shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.
- **Other Issues.**
 - Filter boxes shall be sealed.
 - Building framing cavities shall not be used as ducts or plenums.
 - Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance, and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.
 - Dryer ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct.

These changes will increase the comfort of residents in their home while safeguarding their health.

If you have questions you may reach me at 208-794-9372 or bvandegrift@cityofboise.org.

Sincerely,

Bill VanDeGrift
Mechanical/Plumbing Supervisor
City of Boise, Planning & Development Services