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## Heating, Ventilation & Air Conditioning Requirements

Reference Minnesota State Building Code

**HVAC** includes all heating, air conditioning, ventilation and refrigeration equipment, gas piping, gas fireplaces, gas logs, factory-built wood burning fireplaces and wood burning stoves.

### REQUIREMENTS

- Provide at least six inch clearance to combustible materials from single wall gas vent. Provide at least one inch clearance to combustible materials from Class B gas vent. Use venting tables to size gas vents and connectors. Common vents must be Class B.
- Copper gas piping must be type K or L, free of defects, and installed without kinks in piping. Sleeves are required when passing through concrete or stucco. Steel and wrought iron piping run outside, exposed above ground, must be galvanized or painted. Mechanical joints cannot be concealed.
- Corrugated stainless steel tubing (CSST) shall be installed in accordance with the manufacturer's instructions. CSST shall be bonded between the point of delivery and the first downstream CSST fitting.
- Insulate exhaust ducts in *unheated* spaces. Insulate exhaust ducts in *heated* spaces at least three feet from the outlets. Supply and return ductwork in attics, garages or under porches must be insulated, minimum R-8, and have a vapor barrier.
- Bathrooms require mechanical ventilation of 50 cfm minimum where operated intermittently.
- Building framing cavities shall not be used as ducts or plenums.
- Joints in all supply and return ducts shall be sealed.
- Factory-built chimneys and fireplaces shall be installed in accordance with manufacturer's instructions, and must be inspected prior to covering. Ducted combustion air is required on all units.
- Clothes dryer vents and kitchen range vents require smooth metal ductwork.
- Underground duct must be installed in accordance with manufacturer's instructions, and must be inspected prior to covering. A drain tile system must be installed with the top of the drain tile lower than the bottom of the duct.
- Condominiums and townhomes - Exhaust ducts, furnace vents and similar roof openings are not permitted within four feet of the occupancy separation walls.

### REQUIRED INSPECTIONS

**Rough-in Inspection:** Prior to covering, after framing is complete. Supply and return openings ready, exhaust fan housings installed, exhaust ducts installed and insulated, gas vents and factory-built chimneys installed.

**Underground Duct Inspection:** Prior to covering. All joints sealed per manufacturer's instructions. Rigid insulation, minimum R-5 installed on three sides. Drain tile system complete.

**Gas Piping Inspection:** Gas line pressure tests are required on all high pressure lines, concealed lines, and threaded piping. This should be included with the rough-in inspection when possible. Air tests shall be at least 25 PSIG for ½ hour. Gauge must be of 2 psi increments or less, and a range that test pressure will be at midpoint.

**Final Inspection:** All mechanical systems are complete and operational. Electric and gas connections must be complete.

**Factory Built Fireplace: Rough-In:** Unit installed. Venting, combustion air, fire-stopping, and framing complete. **Final:** Unit operational. Wiring, piping, mantle and hearth complete.