Mechanical Ventilation Checklist V

Heating System

- ☐ Non-distributed (baseboard, radiant, etc) - COMPLETE BELOW
- ☐ Distributed (forced air furnace) -BELOW or APPLICABLE HVCI CHECKLIST
- ☐ HRV System - INSTALLER TO COMPLETE CHECKLIST B-C
- ☐ "Lennox Whisper" gas furnace - INSTALLER TO COMPLETE CHECKLIST B

Exhaust Fans	Location	CFM	Sones	Duct Size	Duct Termination (ie wall , roof vent, etc)
Kitchen (min 80cfm)					
Bath (min 50cfm)					
Bath (min 50cfm)					
Bath (min 50cfm)					
Principle		*			

Principal Fan Control Type

Indicate one of

- ❑ Continuously (max 1.0 sones), or
- ❑ Intermittent Timer (max 1.5 sones)

***Note:** if make up air is required (see below), then max. 110 cfm principal exhaust fan is allowed.(9.32.3.3.(2))*

Principal Fan Duct Sizes

Bedrms	Min. CFM	Duct Smooth	Duct Flex
2	45	4"	5"
3	60	5"	6"
4+	75	5"	6"
	Btw 96-147	6"	7"

Crawlspace

- ❑ **Unheated**
  - ❑ Uniformly distributed outside air vents
- ❑ **Heated**
  - ❑ Mechanical ventilation with humidistat or timer
  - ❑ Outside air PLUS indoor transfer grill to living area (Table 9.32.3.8.)

Make-up Air Requirements —ONLY required if one of the following installed:

- ❑ Open Fireplace (Carbon Monoxide Detector required in room) or Woodstove;
- ❑ Gas-Fired Service Water Heater; or,
- ❑ Other Naturally Aspirating Fuel-Fired, Vented Appliance.

IF ABOVE MAKE UP AIR IS APPLICABLE, PLEASE SUMBIT - **MAKE UP AIR CHECKLIST M**

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Benefits of Good Ventilation

New homes are well-built and insulated to be extremely airtight to reduce energy consumption and to comply with the building code. Unfortunately, these homes can also experience higher rates of indoor air quality problems.

Common pollutants from materials used to build the home, people, activities and contents, along with excess moisture, can create an unhealthy environment. They include:

- Moisture—too much moisture can cause allergy problems and structural damage by encouraging the growth of mold, mildew, bacteria, dust mites, dry rot and insects.
- Household chemicals & pollutants—cleaning supplies, paints, pesticides, odours and formaldehyde.
- Particles—dust, dust mites, pet dander, pollen, lead and asbestos
- Tobacco smoke
- Combustion products—produced by fuel-burning, heating equipment, gas water heaters, fireplaces, wood stoves and gas ranges.
- Heat—overheating in the attic from sun exposure.

A complete ventilation checklist is provided on the last page.

Checklists shall be submitted for review prior to insulation inspection.

Ventilation Methods

Ventilation systems and components are designed to

- Remove excess moisture to keep relative humidity levels between 30% and 60%.
- Remove airborne chemicals, particles, tobacco smoke and odours.
- Help control combustion by-products; and
- Control excess moisture and heat in attics.

These factors come together to enhance the comfort and indoor air quality of the home and to help keep the occupants safe. A quality ventilation system also contributes to preserving the structural integrity of the home, reducing maintenance costs, and adding to the home's value.

1. **Local ventilation (always required)** —for bath, kitchen and other moisture, odour and contaminant producing areas.
2. **Crawl space and attic ventilation (always required)** to protect these areas.
3. **General ventilation** —to remove stale, polluted air and distribute fresh, outdoor air throughout the house. May be provided by using exhaust fans with intakes, centrally ducted continuous ventilation systems such as heat or energy recovery ventilators (HRV) or powered supply systems.

Local Ventilation System

Principle Exhaust Fan and Duct Requirements

A principle exhaust fan is required for all individual, residential heating systems (electric baseboards, ducted furnaces, except "Lennox Whisper" gas furnace).

The principle exhaust fan is no longer controlled by a de-humidistat; it must now be controlled by an intermittent timer programmed to run at least two 4-hour periods per day. The principle fan must also be quiet, with a sound rating not higher than 1.5 sones, or 1.0 sones if designed to run continuously. The fan size is now based on the number of bedrooms. The minimum requirements are as follows:

- 1 bedroom = 30CFM with 4" smooth/5" flexible duct
- 2 bedroom = 45CFM with 4" smooth/5" flexible duct
- 3 bedroom = 60CFM with 5" smooth/6" flexible duct
- 4 bedroom = 75CFM with 5" smooth/6" flexible duct

The duct size must be increased one size if it exceeds 49' in length or has more than two 90° elbows; and, the duct shall be insulated where it passes through unheated spaces.

Exhaust Fan and Duct Requirements

Every bathroom and every kitchen is now required to be equipped with an exhaust fan. Minimum rates/size are:

- bath = 50CFM (usually with 5" smooth/6" flexible duct)
- kitchen = 80CFM (usually with 6" smooth/7" flexible duct)

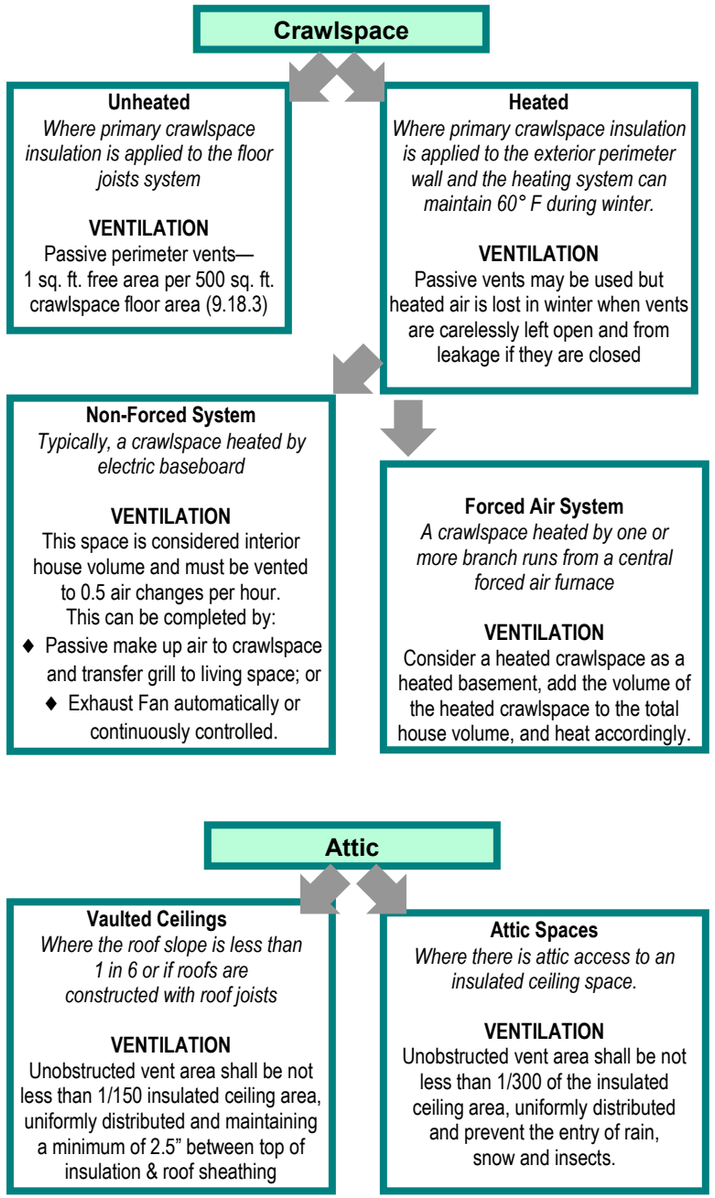
Make Up Air Requirements

Make up air would ONLY be required for your home if you have a naturally-aspirating fuel fired vented appliance such as:

- an open wood-burning fireplace or woodstove,
- "Lennox Whisper" furnace; or,
- a gas-fired service water heater.

Make up air would be required for the principal exhaust fan as well as for any single appliance that discharges air to the exterior at a rate exceeding 0.5 air changes per hour. Further information on these requirements is available from the Building Department.

Crawlspace and Attic Ventilation



General Ventilation System

Forced Air Heating/Venting

Although a forced air heating system circulates the air within a home, there is still a requirement for a principle fan, kitchen and bathroom fans as indicated in the *Local Ventilation* section.

If the forced air heating system is a "Lennox Whisper" furnace, which is a natural aspirating fuel fired appliance, the installer is then required to complete HVCI Checklist B.

Other home ventilation systems may be designed by a professional and shall comply with Part 6 of the British Columbia Building Code. Design information shall be forwarded to the building inspection office for review. If a basic system with a principle fan is being utilized, Mechanical Ventilation Checklist V shall be completed.

Heat Recovery Ventilators

Heat and energy recovery ventilators(HRV) bring in fresh air from the outside while exhausting stale air from the inside. They transfer energy between the two airstreams and distribute it to the home's living areas.

Mechanically, the HRV is a combination of fans, controls and heat recovery elements complete with filters that minimize the entry of pollen, dust and insects. HRV's are available as stand-alone units with independent ductwork, or they may be connected to existing forced air heating systems.

In order to confirm that the HRV system and ducts are providing adequate principle exhaust as well as the necessary exhaust for the kitchen and bath area, the installer will be required to complete HVCI Checklist B-C and submit to the building inspection office prior to insulation inspection.

This pamphlet is intended for general guidance only. Please consult the British Columbia Building code and referenced standards for detailed requirements.

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