

# Ventilation Checklist

## for Additions & Renovations to Existing Residential Buildings

### OVERVIEW

Where an Energy Advisor is not involved in creating a whole energy approach to heating, ventilation and air conditioning, complete this checklist and submit it with your building permit application for an addition or renovation.

Make a selection from the list below for the ventilation system that will be installed:

- DUCTED FORCED AIR HEATING – BC BUILDING CODE (BCBC) 9.32.3.4.(2)**

The furnace fan must run continuously. If the furnace fan has variable speeds, it can be set no lower than the required CFM rating of the principal exhaust fan. A 75 CFM principal exhaust fan will work for up to 5 bedrooms (up to 3,000 ft<sup>2</sup> of living space) and must run continuously at a maximum 1.0 sone rating.
- HEAT RECOVERY VENTILATOR SYSTEM (HRV) – BCBC 9.32.3.4.(3) & (4)**

HRV installations must conform to the CSA-F326 standard or to the referenced guidelines in the 2024 BC Building Code. Note that HRVs can be used either independently or in conjunction with forced warm air heating systems.
- CENTRAL RECIRCULATION VENTILATOR SYSTEM – BCBC 9.32.3.4.(5)**

4" ducting is provided to all bedrooms and an inline "Y" is installed to pull in outside air. Air can either be supplied or exhausted to the bedrooms. If supplied to the bedrooms, the inline supply fan must also pull air from the outside and a common living area. If exhausted from the bedrooms, the inline fan must pull in outside air and exhaust into a common living area. The inline fan must have at least the same CFM rating as the principal exhaust fan. A 75 CFM principal exhaust fan will work for up to 5 bedrooms (up to 3,000 ft<sup>2</sup> of living space) and must run continuously at a maximum 1.0 sone rating. 9.32.3.5.(1)
- PASSIVE SYSTEM – BCBC 9.32.3.4.(6)**

Passive systems are permitted in buildings of one storey, less than 168 m<sup>2</sup> (1,800 ft<sup>2</sup>) in floor area, and where non-forced air heat is being used throughout. Passive inlets are required in all bedrooms and one in a common living area. They must be a minimum of 1.8 m (6') above the floor and have an unobstructed vent area of 25 cm<sup>2</sup> (4 in<sup>2</sup>). A 75 CFM principal exhaust fan will work for up to 5 bedrooms and must run continuously at a maximum 1.0 sone rating. No supply air fan required. This system can also be used in secondary suites where recirculation of air is not permitted between dwelling units.

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## APPLIANCES

EQUIPMENT TYPE	SIZE	PERFORMANCE REQUIREMENT
<b>Space Heating Equipment (BCBC Table 9.36.3.10.)</b>		
Gas-fired furnace	≤ 220,000 BTU/Hr (66 kW)	Annual Fuel Use Efficiency (AFUE) ≥ 95%
Gas-fired boiler	≤ 300,000 BTU/Hr (88 kW)	Annual Fuel Use Efficiency (AFUE) ≥ 90%
Air-cooled unitary air conditioners and heat pumps – Split system	≤ 65,000 BTU/Hr (19 kW)	Seasonal Energy Efficiency Rating (SEER) ≥ 14.5; or Energy Efficiency Rating (EER) ≥ 11.5; or Heating Season Performance Factor (HSPF V) ≥ 7.1
Air-cooled unitary air conditioners and heat pumps – Single-package system	≤ 65,000 BTU/Hr (19 kW)	Seasonal Energy Efficiency Rating (SEER) ≥ 14; or Energy Efficiency Rating (EER) ≥ 11; or Heating Season Performance Factor (HSPF V) ≥ 7.0
<b>Service Water Heating Equipment (BCBC Table 9.36.4.2.)</b>		
Electric storage	> 13 gal but ≤ 71 gal (> 50 L but ≤ 270 L)	Top Inlet: $SL \leq 35 + 0.20V$ Bottom Inlet: $SL \leq 40 + 0.20V$
	> 71 gal but ≤ 120 gal (> 270 L but ≤ 454 L)	Top Inlet: $SL \leq 0.472V - 38.5$ Bottom Inlet: $SL \leq 0.472V - 33.5$  Where SL = standby loss (in watts) V = tank volume (in litres)
Heat pump storage	≤ 24 A and ≤ 250 V	Energy Factor (EF) ≥ 2.1
Gas-fired storage	≤ 75,000 BTU/Hr (22 kW), and first-hour rating ≥ 18 gal (68 L) but < 51 gal (193 L)	Uniform Energy Factor (UEF) ≥ 0.5982- 0.0005V  Where V = tank volume (in litres)
Gas-fired tankless	< 200,000 BTU/Hr (58.56 kW), and max. flow rate ≥ 1.69 gpm (6.4 L/min)	Uniform Energy Factor (UEF) ≥ 0.87

*If you have any questions or require clarification, please contact Building Inspections at 250-755-4429.  
This guide should not be used as a substitute for existing building codes and other regulations.  
The building owner is responsible for compliance with all codes, bylaws, and other regulations.*