

4 Ventilation Checklist 4 - Exhaust Fan & Passive Inlets Sentence 9.32.3.4(6)

Use this checklist for small (<=1800 sq. ft.), single level, non-forced air heated dwellings located in coastal climate areas where winter design temperature is warmer than -20°C (-4°F).

Civic Address	553 Pegasus	Permit No.	
Climate Zone	4	Number of Bedrooms:	2 (A)
		Total Floor Area of Living Space:	956 Sq. Ft. (B)
		Total Interior Volume of Dwelling:	7648 Cu. Ft.
		½ ACH (air changes/hour) = Volume x 0.5 ÷ 60 =	64 CFM (C)

A bedroom is a room with an openable window (minimum dimensions apply), a closet, and a closing interior door.
Total volume includes all heated interior spaces (including crawlspace if heated).
Exhaust appliances exceeding 0.5 ACH may require make-up air.

1. Principal Ventilation System Exhaust Fan Minimum Air Flow Rate

Use the bedroom count from Box (A) and the Total Square Footage from Box (B) above and use Code Requirements or use Table 9.32.3.5 to determine capacity.

Minimum Required Principal Exhaust System Capacity **45 CFM** (D)

2. Principal System Fan Choice

Exhaust Fan Make: **Panasonic** Model: **FV0511VQ1** Sone Rating: **0.3**
(Continuously running)
Location: **Main / Bathroom** Capacity @ 0.2" ESP **62 CFM** (E)
Floor Level / Room If CEV, capacity @ 0.4" ESP Must be ≥ Box (D)

3. Fan Duct Size and Equivalent Length

- a) Installed Equivalent Length:
Length of duct (6 ft) + exh hood (30 ft) + 2 elbows (@ 10 ft ea. = 20 ft) = **56 Ft.** (F)
- b) Choose type of duct: Flex duct or Rigid (smooth) duct
- c) Duct size req'd to flow Box (E) CFM through Box (F) equiv. length of duct = **5 in. ø**
Use Table 9.32.3.8(3) to determine duct size.

4. Required Kitchen and Bathroom Exhaust Fans: Re-list below if Principal Exhaust Fan meets all or part of Kitchen / Bathroom spot exhaust requirements.

Floor / Room	Req'd Exhaust Rate See Table 9.32.3.6	EXHAUST EQUIPMENT					Ex Fan/CEV Principal System CFM	
		Spot Exhaust Kitchen & Bath Wall or Ceiling Fans						
		Fan Make & Model	CFM @0.2" ESP Manuf. Rated	* Duct Sizing per Table 9.32.3.8(3)		Max Equiv. Length per Table		Installed Equivalent Length
Rigid	Flex							
Main / Bathroom	45	Panasonic FV0511VQ1	62	5		130	56	62
Upper / Kitchen	100	Owner Supplied Exh. Fan	Unknown	6			45	
Upper / Bathroom	50	Panasonic FV0511VQ1	62	5		130	59	
Total (must = Box E)							62	✓

* For fans exceeding 175 CFM in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct. See Ventilation Guidelines Appendix page 16A, *Duct Sizing for Larger Fans*.

5. Required Inlets for passive Ventilation Air Supply

- a) High wall installation (minimum 6 ft. above floor)
- b) Located in each bedroom and at least one common area
- c) Inlet Free Area greater than or equal to 4 sq. in.

6. **Heated Crawlspace** is present, (choose one). Area of CS: N/R Tfr Grille min area: 4 sq. in.
- Transfer Grille to adjacent floor + Exhaust from crawlspace into Principal Ventilation System (CEV)
 - Two (2) Transfer Grilles to adjacent floor
 - Transfer Grille to adj. floor + Exhaust Fan (See table above). Controlled by dehumidistat or timer.

Make-Up Air Requirements

1. **NAFFVA** (Naturally Aspirated Fuel Fired Appliance) present in Dwelling Unit? (per sentence 9.32.4.1)
 - No.** Omit Steps 2 & 3.
 - Yes.** Proceed to Step 2.
2. **Exhaust Appliance present which exceeds Box (C) Air Volume** (1/2 AC per hour)
 - No such appliance.** Omit Step 3.
 - Yes.** Commit to Depressurization Test. (See Caution, TECA Ventilation Manual Page 24).
 - Yes.** Proceed to Step 3.
3. **Use Active Make-Up Air for Exhaust Appliance.** (Choose (a) or (b) below.

Make-Up Air Fan required: Installed Exhaust Appliance CFM _____
 Fan Make: _____ Model: _____ Make-Up Air Fan CFM _____
 Duct size: _____ inches MUA is electrically interconnected with large volume exhaust fan: Yes
 Fan location: _____ Fan ducted to: _____

a) Active Make-Up Air delivered to an Unoccupied Area first (not directly to room containing the appliance)

i) **Tempering Required per 9.32.4.1(4)(a):**
 Show calculation how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (34^\circ\text{F} - (24.8^\circ\text{F}) \text{ Winter Design Temp this area}}{3412 \text{ BtuH/kW}} = \text{Duct Heater}$$

ii) **Transfer Grille Required.** Size 1 sq. in. gross area per 2 CFM.
 Transfer Grille size: _____ sq. inches Location: 0

iii) **Additional tempering required per 9.32.4.1(4)(b) before air transferred to occupied area.**
 Show calculation and **describe how make-up air will further be tempered** to at least 54°F (12°C).

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (54^\circ\text{F} - 34^\circ\text{F})}{3412 \text{ BtuH/kW}} = \text{Heat from Unoccupied area required to raise temp by } 20^\circ\text{F}$$

Tempered by: _____

or b) Active Make-Up Air delivered to an Occupied Area. Tempering Required.

Show calculation how make-up air will be tempered to at least 54°F (12°C).

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (54^\circ\text{F} - (24.8^\circ\text{F}) \text{ Winter Design Temp this area}}{3412 \text{ BtuH/kW}} = \text{Duct Heater}$$

NOTES: _____

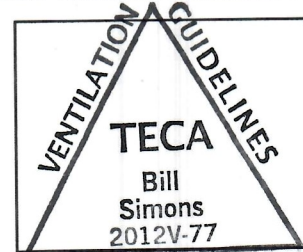
 Kitchen exhaust fan is supplied by owner. At this time, this contractor does not have details of fan.
 If capacity exceeds CFM in Box C, a separately installed make-up air system may be required.
 Contractor has not included any make-up air provision; only the exhaust ductwork listed on this form.

Installer Certification:

I hereby certify that the design and installation of the ventilation system complies with the 2012 BC Building Code, Section 9.32, 2014 & 2015 Amendments

Date September 30, 2021
 Print Name Bill Simons
 Signature _____
 Company B.R. Ventilation Ltd.
 Phone 250-812-8314

2012 TECA Ventilation Certification Stamp



1 Ventilation Checklist 1 - Forced Air Systems

Sentence 9.32.3.4(2)

Use this Checklist where forced air heating system ducts intake and distribute ventilation air

Civic Address	553 Pegasus	Permit No.	
Climate Zone	4	Number of Bedrooms:	5 (A)
		Total Floor Area of Living Space:	5287 Sq. Ft. (B)
		Total Interior Volume of Dwelling:	51908 Cu. Ft.
		½ ACH (air changes/hour) = Volume x 0.5 ÷ 60 =	433 CFM (C)
		A bedroom is a room with an openable window (minimum dimensions apply), a closet, and a closing interior door. Total volume includes all heated interior spaces (including crawlspace if heated). Exhaust appliances exceeding 0.5 ACH may require make-up air.	

1. Principal Ventilation System Exhaust Fan Minimum Air Flow Rate

Use the bedroom count from Box (A) and the Total Square Footage from Box (B) above and Table 9.32.3.5 to determine capacity.

Minimum Required Principal Exhaust System Capacity **105** CFM (D)

2. Principal System Fan Choice

Exhaust Fan Make: Panasonic Model: FV0511VQ1 Sone Rating: 0.8
 (Continuously running)
 Location: Upper / Bathroom Capacity @ 0.2" ESP **110** CFM (E)
Floor Level / Room If CEV, capacity @ 0.4" ESP Must be ≥ Box (D)

3. Fan Duct Size and Equivalent Length

- a) Installed Equivalent Length:
 Length of duct (5 ft) + exh hood (30 ft) + 1 elbows (@ 10 ft ea. = 10 ft) = **45** Ft. (F)
- b) Choose type of duct: Flex duct or Rigid (smooth) duct
- c) Duct size req'd to flow Box (E) CFM through Box (F) equiv. length of duct = **5 in.ø**
 Use Table 9.32.3.8(3) to determine duct size.

4. Required Kitchen and Bathroom Exhaust Fans: Re-list below if Principal Exhaust Fan meets all or part of Kitchen / Bathroom spot exhaust requirements.

Floor / Room	Req'd Exhaust Rate See Table 9.32.3.6	EXHAUST EQUIPMENT						Ex Fan/CEV Principal System CFM
		Spot Exhaust Kitchen & Bath Wall or Ceiling Fans						
		Fan Make & Model	CFM @0.2" ESP Manuf. Rated	* Duct Sizing per Table 9.32.3.8(3)		Max Equiv. Length per Table	Installed Equivalent Length	
Rigid	Flex							
Upper / Bathroom	105	Panasonic FV0511VQ1	110	5		59	45	110
Main / Bathroom	50	Panasonic FV0511VQ1	62	5		130	67	
Main / Kitchen	100	Ancona AN-1313	575	8		x	> Maximum	
Main / Ensuite	50	Panasonic FV0511VQ1	62	5		130	54	
Upper / Ensuite	50	Panasonic FV0511VQ1	62	5		130	45	
Lower / Bathroom	50	Panasonic FV0511VQ1	62	5		130	60	
							Total (must = Box E)	110 ✓

* For fans exceeding 175 CFM in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct. See Ventilation Guidelines Appendix page 16A, Duct Sizing for Larger Fans.

5. Fresh Air must be ducted from Outside to return Air of Forced Air Heating for distribution.

- a) Ventilation air duct is connected not more than 15 ft., nor less than 10 ft. upstream of the heating appliance, unless a flow control device is used.
- b) Duct size for Fresh Air intake to RA. Choose one:
 - Rigid Duct. 4"Ø minimum. Must be insulated & vapour barriered for full length, or
 - Flex Duct. 5"Ø minimum. Must be insulated and vapour barriered for full length.

6. Forced air heating system fan is set to run continuously.

Forced air heating system is ducted to supply air to every bedroom and any level without a bedroom.

- 7. Heated Crawlspace** is present, (choose one). Area of CS: N/R Tfr Grille min. area: N/R
- Minimum of one (1) RA grille located in the crawlspace, connected to F/A heating appliance
 - Transfer Grille to adjacent floor + S/A outlet in crawlspace (from heating appliance).
 - Transfer Grille to adjacent floor + Exhaust from crawlspace into Principal Ventilation System (CEV)
 - Two (2) Transfer Grilles to adjacent floor
 - Transfer Grille to adj. floor + Exhaust Fan (See table above). Controlled by dehumidistat or timer.

Make-Up Air Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Appliance) present in Dwelling Unit? (per sentence 9.32.4.1)

- No. Omit Steps 2 & 3.
- Yes. Proceed to Step 2.

2. Exhaust Appliance present which exceeds Box (C) Air Volume (1/2 AC per hour)

- No such appliance. Omit Step 3.
- Yes. Commit to Depressurization Test. (See Caution, TECA Ventilation Manual Page 24).
- Yes. Proceed to Step 3.

3. Use Active Make-Up Air for Exhaust Appliance. (Choose (a) or (b) below.

Make-Up Air Fan required:

Installed Exhaust Appliance CFM _____
 Fan Make: _____ Model: _____ Make-Up Air Fan CFM _____
 Duct size: _____ inches MUA is electrically interconnected with large volume exhaust fan: _____
 Fan location: _____ Fan ducted to: _____

a) Active Make-Up Air delivered to an Unoccupied Area first (not directly to room containing the appliance)

i) Tempering Required per 9.32.4.1(4)(a):

Show calculation how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (34^\circ\text{F} - (24.8^\circ\text{F}) \text{ Winter Design Temp this area}}{3412 \text{ BtuH/kW}} = \text{Duct Heater}$$

ii) Transfer Grille Required. Size 1 sq. in. gross area per 2 CFM.

Transfer Grille size: _____ sq. inches Location: _____

iii) Additional tempering required per 9.32.4.1(4)(b) before air transferred to occupied area.

Show calculation and describe how make-up air will further be tempered to at least 54°F (12°C).

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (54^\circ\text{F} - 34^\circ\text{F})}{3412 \text{ BtuH/kW}} = \text{Heat from Unoccupied area required to raise temp by } 20^\circ\text{F}$$

Tempered by: _____

or b) Active Make-Up Air delivered to an Occupied Area. Tempering Required.

Show calculation how make-up air will be tempered to at least 54°F (12°C).

$$\frac{\text{Make-up Fan CFM (0)} \times 1.08 \times (54^\circ\text{F} - (24.8^\circ\text{F}) \text{ Winter Design Temp this area}}{3412 \text{ BtuH/kW}} = \text{Duct Heater}$$

NOTES: Kitchen Hood Fan vented to manufacturer's specs.

Installer Certification:

I hereby certify that the design and installation of the ventilation system complies with the 2012 BC Building Code, Section 9.32, 2014 & 2015 Amendments

Date September 30, 2021
 Print Name Bill Simons
 Signature _____
 Company B.R. Ventilation Ltd.
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