# 3 Ventilation Checklist 3 - Distributed CRV Systems

Sentence 9.32.3.4(5)

Use this Checklist when a ducted Central Recirculating Ventilator (CRV) is used to meet the fresh air intake and distribution requirements and a Principal Exhaust fan meets the exhaust requirements.

Civic Address: **154 Sticks** Permit No. _____

Climate Zone: **4** Number of Bedrooms: **3** (A)

A bedroom is a room with an openable window (minimum dimensions apply), a closet, and a closing interior door.

Total Floor Area of Living Space: **1478** Sq. Ft. (B)

Total Interior Volume of Dwelling: **16380** Cu. Ft.

Total volume includes all heated interior spaces (including crawlspace if heated).

½ ACH (air changes/hour) = Volume x 0.5 ÷ 60 = **137** CFM (C)

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: **FV-0511VQ1** Sone Rating: **0.3**

(Continuously running)

Location: **Main / Powder Rm** (Floor Level / Room)

Capacity @ 0.2" ESP **45** CFM (E)

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) + 0 elbows (@ 10 ft ea. = 0 ft) = **35 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 = **4 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: 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) Duct Dia (in.) Rigid | Flex | Max Equiv. Length per Table | Installed Equivalent Length | Ex Fan/CEV Principal System CFM |
|---|---|---|---|---|---|---|---|---|
| Main / Powder Rm | 45 | Panasonic FV-0511VQ1 | 45 | 4 | | 105 | 35 | 45 |
| | | | | | | | | |
| Main / Bathroom | 50 | Panasonic FV-0511VQ1 | 60 | 4 | | 50 | 36 | |
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* 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.*

Total (must = Box E) **45** ✓

5. **CRV Fresh Air Intake & Mixing Fan.** (Choose a or b)
   - ☑ a) Box F CFM is minimum 2 times Box E CFM for **+5°F and warmer winter design temperature.**
   - ☐ b) Box F CFM is minimum 3 times Box E CFM for **less than +5°F winter design temperature.**

   Fan Details: Make: Panasonic Model: FV10NLF Capacity @ 0.4" ESP: 100 CFM (F)

   Duct size for Fresh Air intake to Return Air of CRV
   - ☑ 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. **CRV Fresh Air Circulation.** (Choose a or b)
   - ☑ a) Draw air from bedrooms and Supply air to common area.
   - ☐ b) Draw air from common area and Supply air to bedrooms.

7. ☑ **Heated Crawlspace** is present, (choose one). Area of CS: 450 sq ft Tfr Grille min. area: 6 sq. in.
   - ☑ Transfer Grille to adjacent floor + S/A outlet in crawlspace (from CRV system).
   - ☐ Transfer Grille to adjacent floor + Exhaust from crawlspace into Ventilation System (CRV or 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.

   Make-up Fan CFM (0) x 1.08 x (34°F- (15°F) Winter Design Temp this area = Duct Heater
   3412 BtuH/kW

   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).

   Make-up Fan CFM (0) x 1.08 x (54°F - 34°F) = Heat from Unoccupied area required to raise temp by 20°F
   3412 BtuH/kW

   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).

   Make-up Fan CFM (0) x 1.08 x (54°F - (15°F) Winter Design Temp this area = Duct Heater
   3412 BtuH/kW

**NOTES:** Checklist is for the new addition, existing house is not included.

## 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 February 17, 2022

Print Name Bill Simons

Signature _____

Company B.R. Ventilation Ltd.

Phone 250-812-8314

2012 TECA Ventilation Certification Stamp