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_____ Permit No._____

Climate Zone: ____ Number of Bedrooms [ ] (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 [ ] ft^2 (B)

Total Interior Volume of Dwelling [ ] ft^3 — Total volume includes all heated interior spaces (including crawlspace if heated).

.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 = [ ] cfm (C) — Exhaust appliances exceeding .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 Total square footage from Box (B) above and Table 9.32.3.5. to determine

Minimum Required Prinicpal Exhaust System Capacity [ ] cfm (D)

2. Principal System Fan Choice

a) Exhaust Fan continuous running Make_____Model_____ Sone Rating ____

Location: _____ **Capacity at 0.2 ESP** [ ] cfm (E) Must be ≥ than Box (D)

If CEV, capacity @0.4ESP

3. Fan Duct Size and Equivalent Length

a) Installed Equivalent Length:

Length of duct _____ft **+** Ext. hood **30 ft +** (____# elbows at 10 ft each =_____) = [ ] ft (F)

b) Choose type of duct: Flex duct ☐ or Rigid (smooth) duct ☐

c) Duct size required to flow Box E cfm through Box F equivalent length of duct = [ ] 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.

ROOM	Required Exhaust Rate **Table 9.32.3.6**	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						Ex.Fan/CEV
		Fan Make & Model	CFM @ 0.2 ESP Manf. Rated	*Duct Sizing per Table 9.32.3.8.(3)				Principal System CFM
				Duct Dia (in Ø) rigid	Duct Dia (in Ø) flex	Max. Equiv. Length per table	Installed Equiv. Length	

* For fan capacities **exceeding** 175cfm 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 16-A, *Duct Sizing for Larger Fans*.

TOTAL (must = Box E) [ ]

Removed reference to RADON in Make-up Air Requirements

5. CRV Fresh Air Intake & Mixing Fan (Choose a or b)

☐ a) Box G CFM is minimum 2 times Box E cfm for **+5°F and warmer winter design temperature**.

☐ b) Box G CFM is minimum 3 times Box E for **less than +5°F winter design temperature.**

Make_____ Model_____ **Capacity @ 0.4 ESP** _____ cfm (G)

c) Duct Size for Fresh Air intake into return air of CRV:

☐ Min 4"Ø rigid duct, must be insulated & vapour barriered for full length, OR

☐ Min 5"Ø, flex duct, must be insulated & 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. If Heated Crawlspace present

☐ Choose ventilation option 1, 2, or 3 per sentence 9.32.3.7 (2).

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented 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 0.5 ACH:

☐ **No such appliance**. Omit Step 3

☐ **Yes,** Commit to Depressurization Test (See CAUTION, TECA Vent Manual pg 24)

☐ **Yes,** Proceed to Step 3

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

Make-up Air Fan required: **Exhaust Appliance Actual Installed Cfm** _____

Fan Make _____ Model _____ **Make-up Air Fan Cfm** _____

Duct diameter _____inches Fan Location _____

☐ ***Fan interconnected with exhaust appliance fan***. 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.

$$\frac{\text{Make-up Fan cfm} \_\_\_\_ \times 1.08 \times (\mathbf{34°\ F} - \_\_\_\_\ °\text{F Winter Design Temp your location})}{3412\ \text{BTUH/kw}} = \_\_\_\_\ \text{(kw) Duct Heater}$$

ii) Transfer Grill Required: Size 1 sq in of gross area per 2 cfm: Transfer grill size ____sq. in. Location _____

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

$$\frac{\text{Make-up Fan} \_\_\_\_\text{cfm} \times 1.08 \times (\mathbf{54°\ F} - 34°\text{F})}{3412\ \text{BTUH/kw}} = \_\_\_\_\text{(kw) Heat from unoccupied area required to raise temp by 20°F}$$

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).

$$\frac{\text{Make-up Fan cfm} \_\_\_\_\ \times 1.08 \times (\mathbf{54°\ F} - \_\_\_\_\ °\text{F Winter Design Temp your location})}{3412\ \text{BTUH/kw}} = \_\_\_\_\ \text{(kw) Duct Heater}$$

Installer Certification:

I hereby certify that the design and installation of the ventilation system complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment.

2012 TECA Ventilation Certification Stamp

Date _____

Print Name_____

Signature_____

Company_____

Phone _____

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