

# 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 _____		Permit No. _____	
Climate Zone: _____	Number of Bedrooms	<input style="width: 50px; height: 20px;" type="text"/>	(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	<input style="width: 50px; height: 20px;" type="text"/> ft <sup>2</sup>	(B)
	Total Interior Volume of Dwelling	<input style="width: 50px; height: 20px;" type="text"/> ft <sup>3</sup>	Total volume includes all heated interior spaces (including crawlspace if heated).
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<input style="width: 50px; height: 20px;" type="text"/> 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 Principal 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						Principal System CFM
		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)		Max. Equiv. Length per table	Installed Equiv. Length	
		rigid	flex					
* For fan capacities <b>exceeding</b> 175cfm in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct. See <i>Ventilation Guidelines</i> Appendix page 16-A, <i>Duct Sizing for Larger Fans</i> .							TOTAL (must = Box E)	

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**Removed reference to RADON in Make-up Air Requirements**

**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 15ft, nor less than 10ft 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 & vapour barriered for full length.
- c) **Furnace fan continuous operation.**

**6. Forced Air Heating System is ducted to supply air to every bedroom and any level without a bedroom.**

**7. If Heated Crawlspace present, (Choose one)**

- Minimum of one RA grille located in the crawlspace, OR
- No RA grille in crawlspace, 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.

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

- 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).

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

**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).

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

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**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.

Date \_\_\_\_\_

Print Name \_\_\_\_\_

Signature \_\_\_\_\_

Company \_\_\_\_\_

Phone \_\_\_\_\_

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**2012 TECA Ventilation Certification Stamp**

