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Venting/Heating Contractor or homeowner is required to **complete the applicable checklist** attached, and submit a copy to the building Official prior to the framing inspection. **Failure to comply, may result in framing rejection and construction delays.**

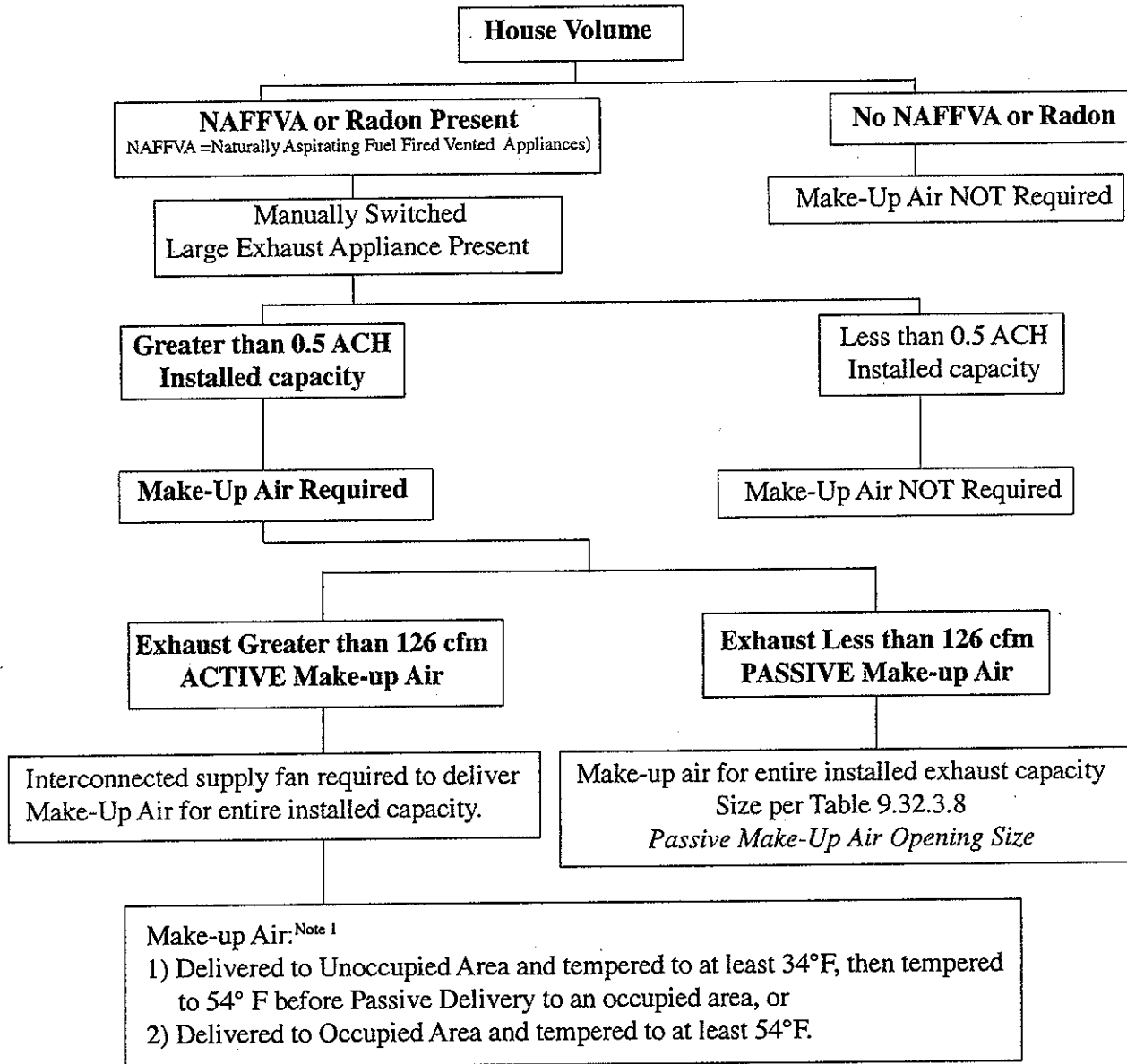


Make-Up Air For Other Exhaust Appliances

Per Code Section 9.32.4: Additional Protection Against Depressurization*

BC Building Code ERRATUM:

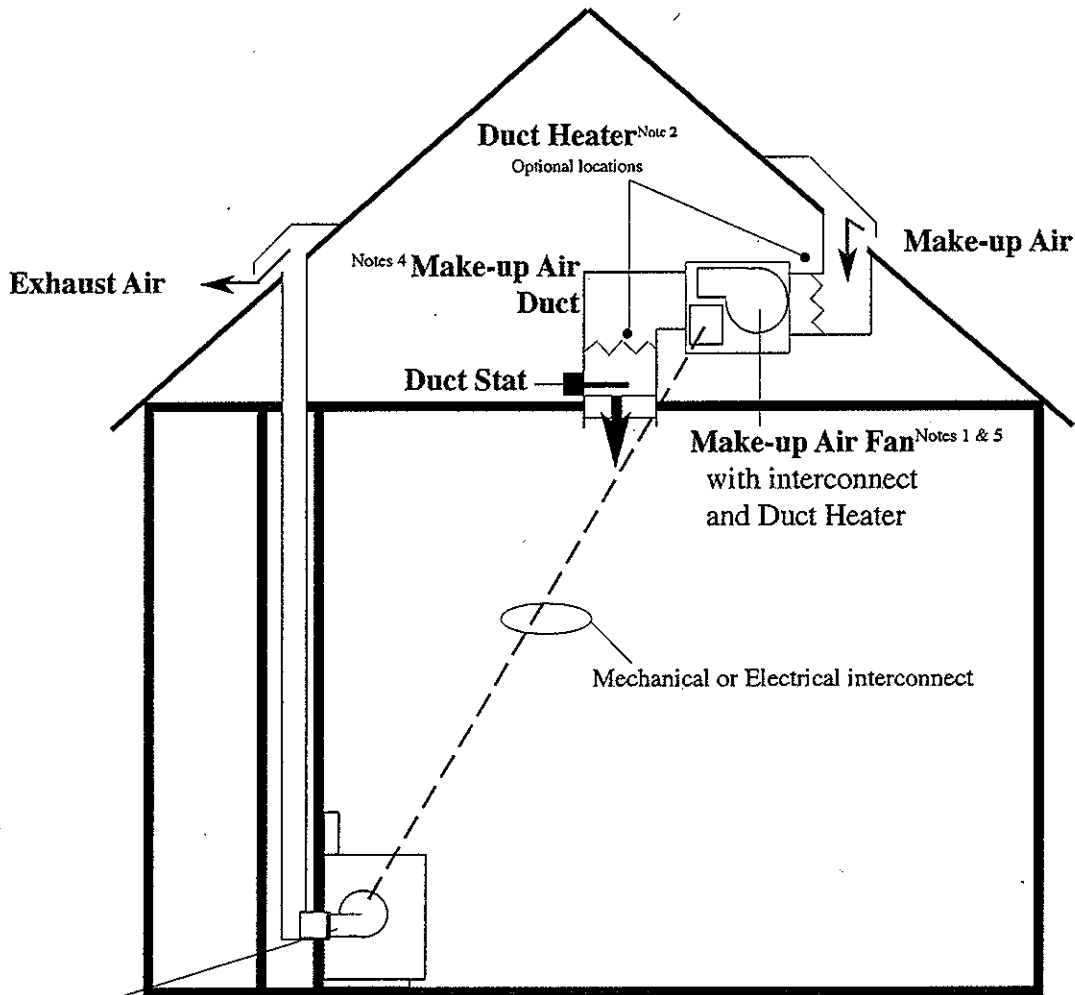
Section 9.32.4 Sentence 1 refers to a Sentence 8 exception. However, Sentence 8 has been removed from the Code. The Building Policy Branch has informed us the Sec 9.32.4 requirement for make-up air now applies to **solid fuel fired appliances**, formerly exempted from this requirement by Sentence 8.



Note 1: Tempering requirement of this air may in many coastal climate applications unnecessarily increase installation costs with little benefit to the occupants.

***9.32.4.2: Carbon Monoxide Alarms.** New requirements for CO detectors in *all* dwellings that contain a fuel burning appliance or a storage garage are also included in this section. Typically electricians will be installing this equipment, but may need contractor input. See Appendix Page 54-A for code wording.

Example: Active Make-up Air System



Exhaust Air Fan^{Note 3} with Fan Switch, PD (Pressure Differential) Switch, or Current Sensing Switch

1. Select Make-up Air Fan so when installed it will equal the exhaust appliance's actual installed exhaust rate, per 9.32.4.2.(b). Interconnect with supply fan, per 9.32.4.3.
See *Appendix: Duct Sizing for Larger Fans* for make-up air system design considerations.
2. Deliver supply make-up air to an unoccupied area of dwelling and temper to required minimum of 34°F with further tempering to 54°F before passive delivery to occupied area, or deliver directly to occupied area and temper to required minimum of 54°F, per 9.32.4.4.(a) & (b).
See *Appendix: Duct Heater Sizing*
3. Applies to conventional overhead range hoods, down-draft cook tops and any other exhaust appliance (dryer, exhausting vacuum system, etc.) with an installed capacity exceeding 0.5 ACH when make-up air required due to Radon Gas or NAFFVA appliance present).
4. See *Appendix: Duct Sizing for Larger Fans* to size ducts for Make-up Air Fans.
5. Per BCBC Section 2.5 Equivalent, Sentence 2.5.1.2 (1) states: "Any person desirous of providing an equivalent to satisfy one or more of the requirements of this Code shall submit sufficient evidence to demonstrate that the proposed equivalent will provide the level of performance required by this Code." See *Appendix: Depressurization Test for Larger Fans*

A

Mechanical Ventilation Checklist A—Non-Distributed

Use this checklist with **Non-Distributed Systems** such as those usually found in dwellings with **electric or hot water radiant or baseboard heating systems** or where duct systems do not distribute ventilation air.

Civic Address _____		Permit No. _____	
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 Interior Volume of Dwelling	<input style="width: 50px; height: 20px;" type="text"/> ft ³		Total volume includes heated interior joist spaces and heated crawlspaces.
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<input style="width: 50px; height: 20px;" type="text"/>	(B) cfm
			Exhaust appliances exceeding .5 ACH may require make-up air.

1. Principal Fan

a) **Exhaust Rate:** Use the bedroom count from Box (A) above and Table 9.32.3.3.A. to determine Minimum Rate. Maximum Rate of 110 cfm if NAFFVA/Radon present.

The Principal Exhaust Fan will be controlled automatically with an interval timer OR run continuously.

Minimum required rate: **Interval Timer**

cfm (C)

Continuous

cfm (D)

b) Principal Fan CFM & Sone Rating:

Make _____ Model _____

cfm (E)

Sones: Interval _____ Continuous _____
 Maximum rating: Interval Timer 1.5 Sones Continuous 1 Sone

Box E Maximum allowed is 110 cfm if Make-up Air Required in Step 4.

Fan Location: _____

c) Principal Fan Duct Size:

 Use actual fan cfm in Box E above and Table 9.32.3.9.

Fan Duct size: _____ inches. Duct type: ___Smooth ___Flex

2. Required Kitchen and Bathroom Exhaust Fans:

Room	Fan Make & Model	Fan CFM		Duct Diameter (in) Table 9.32.3.9*	
		Code Req'd Min @ 2"W.C. per Table 9.32.3.3.B	actual Fan CFM @ 2"W.C. per Manuf. Rating	Smooth	Flex

* For fan capacities exceeding Table 9.32.3.9, follow manufacturer's installation instructions or use good engineering practice to size duct. See *Ventilation Guidelines* Appendix page 24-A.

3. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) and/or Radon Gas present in dwelling unit?

Yes, Proceed to Step 4 & 5

No, Omit Steps 4 to 7.

4. Passive Make-Up Air Duct for Principal Fan: Use the Box E installed cfm and Table 9.32.3.8.

Make-up air duct diameter _____ inches. Location _____

5. Exhaust Appliance present which exceeds Box B 0.5 ACH:

Yes, Proceed to Step 6.

No such appliance. Omit Steps 6 to 7.

6. Use Passive Make-up Air for Exhaust Appliance with actual installed exhaust rate of 126 cfm or less:

Appliance Cfm _____ Passive Make-up Air Duct Sized to Table 9.32.3.8: _____ inches

7. Use Active Make-up Air for Exhaust Appliance with actual installed exhaust rate of more than 126 cfm.

Make-up Air Fan required:

*Exhaust Appliance Cfm _____

Fan Make _____ Model _____

Fan Cfm _____

Duct diameter _____ inches

*Must equal actual installed exhaust rate of appliance.

Fan Location _____ Fan ducted to _____

A) Active Make-up Air delivered to an Unoccupied Area (not directly to room containing the appliance).

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

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

Transfer Grill Required: Size to Table 9.32.3.8 (or 1 sq in of gross area per 2 cfm):

Transfer grill size _____ sq. in. Location _____

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).

B) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

Installer Certification:

Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2006 B.C. Building Code.

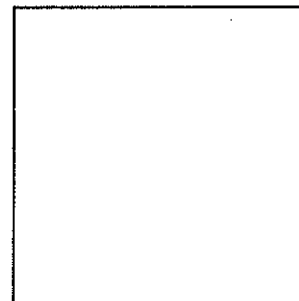
Print Name _____

2006 TECA Ventilation Certification Stamp

Signature _____

Company _____

Phone _____



Checklist A2

B

Mechanical Ventilation Checklist B—Distributed

Previously Checklist C (per former 1998 BCBC)

This Checklist is for use with **forced air heating systems** where the heating duct system distributes ventilation air.

Civic Address _____		Permit No. _____	
Number of Bedrooms	<input type="text"/>	(A)	A bedroom is a room with an openable window (minimum dimensions apply), a closet and a closing interior door.
Total Interior Volume of Dwelling	<input type="text"/> ft ³		Total volume includes heated interior joist spaces and heated crawlspaces.
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<input type="text"/> cfm	(B)

1. Principal Fan

a) **Exhaust Rate:** Use the bedroom count from Box (A) above and Table 9.32.3.3.A. to determine Minimum Rate. (Maximum Rate of 110 cfm if NAFFVA/Radon present.)

Minimum required rate: **Interval Timer**

Continuous

cfm (C)

cfm (D)

b) **Principal Fan CFM & Sone Rating:**

Make _____ Model _____

cfm (E)

Sones: Interval _____ Continuous _____
 Maximum allowed: Interval timer 1.5 sones Continuous 1 sone

Box E Maximum allowed is 110 cfm if Make-up Air Required in Step 4.

Fan Location: _____

c) **Principal Fan Duct Size:** Use actual fan cfm in Box E above and Table 9.32.3.9 for Duct.

Fan Duct size: _____ inches. Duct type: ___Smooth___Flex

2. Required Kitchen and Bathroom Exhaust Fans:

Room	Fan Make & Model	Fan CFM		Duct Diameter (in)	
		Code Req'd Min. @ 2"W.C. per Table 9.32.3.3.B	actual Fan CFM @ 2"W.C. per Manf. Rating	Table 9.32.3.9*	
				Smooth	Flex

* For fan capacities exceeding Table 9.32.3.9, follow manufacturer's installation instructions or use good engineering practice to size duct. See *Ventilation Guidelines* Appendix page 24-A.

Checklist B1

3. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) and/or Radon Gas present in dwelling unit?

Yes, Proceed to Step 4 & 5 No, Omit Steps 4 to 7.

4. Active Make-Up Air Duct for Principal Fan: Per Sec 9.32.3.8. (2) (b) (ii & iii) Install a 4"Ø outdoor air duct into the furnace return air plenum not more than 15ft (unless a flow control device is used) or less than 10ft from the furnace cabinet. In locations with winter design temperature less than -10° C, this duct must have a motorized damper interconnected with principal ventilation air fan. **Interconnect in place:** Principal Fan & Furnace Blower Yes
Damper make _____ Voltage _____ & Damper (if present) Yes

5. Exhaust Appliance present which exceeds Box B 0.5 ACH:

Yes, Proceed to Step 6. No such appliance. Omit Steps 6 to 7.

6. Use Passive Make-up Air for Exhaust Appliance with actual installed exhaust rate of 126 cfm or less:

Appliance Cfm _____ Passive Make-up Air Duct Sized to Table 9.32.3.8: _____ inches

7. Use Active Make-up Air for Exhaust Appliance with actual installed exhaust rate of more than 126 cfm.

Make-up Air Fan required:

Fan Make _____ Model _____ *Exhaust Appliance Cfm _____
Duct diameter _____ inches Fan Cfm _____
Fan Location _____ Fan ducted to _____
*must equal actual installed exhaust rate of appliance.

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

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

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

ii) Transfer Grill Required: Size to Table 9.32.3.8 (or 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).

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

Installer Certification:

Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2006 B.C. Building Code.

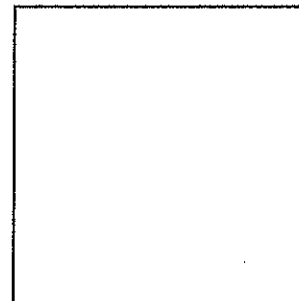
Print Name _____

2006 TECA Ventilation Certification Stamp

Signature _____

Company _____

Phone _____



Checklist B2

5. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) and/or Radon Gas present in dwelling unit?

Yes, Proceed to Step 6 if CEV or Step 7 if HRV. No, Omit Steps 6 to 9.

6. CEV only—Make-Up Air Duct for Principal Fan: Choose (a) or (b) and proceed to Step 7.

a) Non-Distributed system—Passive make-up air duct: Use Box E or F installed cfm and Table 9.32.3.8.

Make-up air duct diameter _____ inches. Location _____

b) Distributed system—Active Make-Up Air Duct for Principal Fan: Per Sec 9.32.3.8. (2) (b) (ii & iii)

Install a 4"Ø outdoor air duct into the furnace return air plenum not more than 15ft (unless a flow control device is used) or less than 10ft from the furnace cabinet. In locations with winter design temperature less than -10° C, this duct must have a motorized damper interconnected with principal ventilation air fan.

Interconnect in place: Principal Fan & Furnace Blower Yes
& Damper (if present) Yes
Damper make _____ Voltage _____

7. Exhaust Appliance present which exceeds Box B —0.5 ACH:

Yes, Proceed to Step 8. No such appliance. Omit Steps 8 to 9.

8. Use Passive Make-up Air for Exhaust Appliance with actual installed exhaust rate of 126 cfm or less:

Appliance Cfm _____ Passive Make-up Air Duct Sized to Table 9.32.3.8: _____ inches

9. Use Active Make-up Air for Exhaust Appliance with actual installed exhaust rate of more than 126 cfm.

Make-up Air Fan required:

Fan Make _____ Model _____

*Exhaust Appliance Cfm _____

Fan Cfm _____

Duct diameter _____ inches

*must equal actual installed exhaust rate of appliance.

Fan Location _____ Fan ducted to _____

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

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

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

ii) Transfer Grill Required: Size to Table 9.32.3.8 (or 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).

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

Installer Certification:

Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2006 B.C. Building Code.

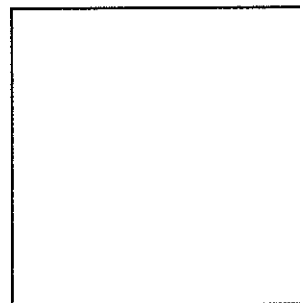
Print Name _____

2006 TECA Ventilation Certification Stamp

Signature _____

Company _____

Phone _____



Checklist C2

Sizing Tables

Table 9.32.3.3.A

Principal-Exhaust Fan Ventilation Rate*

Number of Bedrooms	Minimum Ventilation Rate CFM
1	30
2	45
3	60
4 or more	75

* Maximum Ventilation Rate of 110 cfm applies if NAFFVA or Radon present, i.e. if Make-up Air Required for the Principal Fan
All rates at 0.2" w.c. static pressure

Table 9.32.3.9

Minimum Exhaust Duct Size for Wall or Ceiling Exhaust Fan		
Max. Exhaust Fan Ventilation Rate Cfm	Min. Exhaust Duct Diameter Inches Ø	
	Smooth Duct	Flex Duct
21	3	4
53	4	5
95	5	6
147	6	7

Table 9.32.3.8.

Passive Make-up Air Opening Size		
Max. Ventilation Rate Controlled Automatically or Provided Continuously Cfm	Min. Make-Up Air Duct	
	Vent Area In ²	Vent Diameter inches Ø
17	7	3
25	10	4
32	13	4
36	15	5
42	18	5
53	22	5
63	26	6
74	31	7
84	35	7
95	39	7
105	44	8
116	48	8
126	52	9

Table 9.32.3.3.B

Bathroom/Kitchen Exhaust Ventilation Rate

Room	Exhaust Rate* CFM	
	Intermittent	Continuous
Kitchen	80	N/A
Bathroom	50	20

*Minimum Required Rates @ 0.2" w.c. static pressure