4

Small Dwelling Unit with Non-Forced Air Heating System Sentence 9.32.3.4 (6)

For small, non-forced air heated dwellings in mild coastal and moderate interior climates where passive inlets are used to admit ventilation air.

Principal Ventilation Rate Based on Bedroom Count & Square Footage

7.5 cfm/person + 10 cfm per 1000 Sq Ft

Principal Ventilation System Exhaust Fan Minimum Air-Flow Rate

Minimum capacity sized to Table 9.32.3.5

Continuous

1 inlet per bedroom and at least one common area

Principal Fan Control

No control, fan runs continuously. Fan runs continuously.

On/Off Service switch marked "Principal Ventilation

Principal Fan type

Principal Fan External Static Pressure (ESP)

Principal Fan Sound Level

Maximum sound rating

Principal Fan Duct Sizing

Exhaust Fan

ESP @ 0.2

DD1 @ 0.2

1.0 sone

N/A

1 1/2 1

CEV

ESP @ 0.4

Ducts sized to Manufact. requirements

Air Inlets Required

Per 9.32.3.4 (6)(b)

Minimum 4 sq in free area

Location: High wall, minimum 6 ft

NOTE: Principal Exhaust Fan Sizing

The smallest fan meeting the capacity requirement is the best choice. For a 2-speed Central Exhaust Ventilator (CEV), choose fan with a low-speed continuous cfm capcity which just meets the capacity requirement in Table 9.32.3.5.

Ducts sized to Table 9.32.3.8 (3)

Kitchen & Bath Exhaust Fans

Exhaust fans required in each bathroom and kitchen, unless Princial Fan or CEV exhausts that room

extrausts that room

Minimum Exhaust Rate

Table 9.32.3.5

Duct Sizing for these Exhaust Fans

Room with no openable window

Exhaust inside air or supply outside air per 9.32.2.1 (2) at rate shown

Kitchen or Range Hood Exhaust Fan

Size to Table 9.32.3.6

@.2 ESP static pressure

@.2 ESP static pressure

Intermittent 50 CFM

Continuous 20 CFM

Size Ducts to Table 9.32.3.8 (3)

Non-Heating Season Requirement

Air Conditioned .5 ACH

Intermittent only

100 CFM

Not Air Conditioned 1.0 ACH

Bath Exhaust Fan

Size to Table 9.32.3.6

4

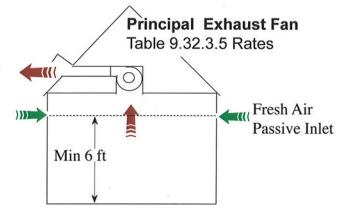
Small Dwelling Unit with Non-Forced Air Heating System Sentence 9.32.3.4 (6)

DU may be single detached, laneway, secondary suite (within a primary DU) or one DU within a MURB (multi-unit residential building)

APPLICATION

- 1) Winter Design Temp: warmer than -4°F, and
- 2) DU size 1800 sq ft or less, and
- 3) 1 Storey only, and
- 4) Non-forced air heated with no exterior chimneys

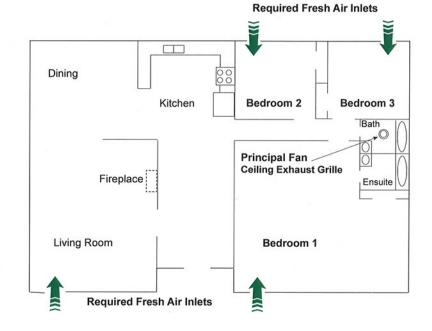
Heating is typically electric or hotwater baseboard, radiant floor or ductless split heat pump.



Inlets with minimum 4 sq in free area required in each Bedroom and at least one common area.

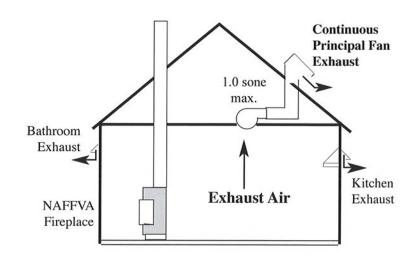
A room is considered a bedroom if it has

- 1) a window that opens to at least
 - a) 15 inches width or height and
 - b) 3.8 sq ft in area, and
- 2) a closet and
- 3) an interior door which closes



NAFFVA Appliances & Combustion Air In Addition to ventilation air inlets, combustion air is required for any installed NAFFVA appliance.

TECA strongly recommends against NAFFVA installations in Example 4 dwellings, since almost any fan that could be installed would upset safe chimney operation.





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

Use this checklist for small (≤ 1800 sqft), single level, **non-forced air** heated dwellings located in *mild* coastal & moderate interior climates where winter design temperature is warmer than -4°F.

coastat &	moaerai	te interior cilmates where	e winter	aesign	temp	erature is	warmer ind	in –4°F.
Civic Address			Permit No					
Climate Zone:	:	Number of Bedrooms	3		(A)	window (m	is a room with an openable inimum dimensions apply), a	
	Floor area of living space	;	ft²	(B)	closet and a	closet and a closing interior door.		
	erior Volume of Dwelling	Ţ,	Total volume includes al spaces (including crawlspa					
.5 ACH (air c		cfm	(C)	Exhaust appliances exceeding .5 ACH may require make-up air.				
1. Princinal Vo	entilation	n System Exhaust Fan M		m Air-1	flow R	ate		
Use the bedro		from Box (A) and Total sq					and Table 9.	32.3.5. to
determine Minim	System	System Capacity		cfm (D)				
2. Principal System Fan Choice								
		ModelSon			e Rating			
a) Exhaust Fan continuous running MakeModel Capacity								
Location:	8	at 0.2 E	\mathbf{ESP} \mathbf{cfm} (E) Must be \geq			st be \geq than Box (D)		
If CEV, capacity @0.4ESP 3. Fan Duct Size and Equivalent Length a) Installed Equivalent Length: Length of ductft + Ext. hood 30 ft + (# elbows at 10 ft each =) =ft (F b) Choose type of duct: c) Duct size required to flow Box E cfm through Box F equivalent length of duct = Use Table 9.32.3.8 (3) to determine duct size.								
		nd Bathroom Exhaust F		list bo	low if	Dringing	∟ Evhouet Eo	n maata all ar
-				-1181 00	AOW II	Timeipai	Exilaust I a	ii iiiccis aii oi
part of Kitchen/Bathroom spot Exhaust requirements.								
ROOM	REQUIRED EXHAUST	EXHAUST EQUIPMENT						
	RATE	Spot Exhaust Kitchen & Bath WALL/CEILING FANS Ex.Fan/C						
	Table 9.32.3.6	Fan Make & Model	CFM @ 0.2 ESP					Principal System CFM
			Manf. Rated	Duct Di rigid	flex	Max. Equiv. Length per table	Installed Equiv. Length	System CFM

Guidelines Appendix page 16-A, Duct Sizing for Larger Fans. © March 2015 TECA All Rights Reserved Checklist 4, pg1 of 2

* 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

TOTAL

(must =

Box E)

Removed reference to RADON in Make-up Air Requirements 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. 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) -up Air Fan required: Exhaust Appliance Actual Installed Cfm ______ Fan Make _____ Model ____ Make-up Air Fan Cfm ______ Make-up Air Fan required: 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. Make-up Fan cfm X 1.08 X (**34°** F – °F Winter Design Temp your location) = (kw)3412 BTUH/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). Make-up Fan ____cfm x 1.08 x ($\mathbf{54}^{\circ}$ F -34° F) = ____(kw) Heat from unoccupied area 3412 BTUH/kw 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). Make-up Fan cfm____ x 1.08 x (**54° F** – _____°F Winter Design Temp your location) = _____ (kw) 3412 BTUH/kw **Duct Heater** © March 2015 TECA All Rights Reserved **Installer Certification: 2012 TECA Ventilation** I hereby certify that the design and installation of the ventilation system **Certification Stamp** complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment. Phone Checklist 4, pg2 of 2