

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	<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div>	(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		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ²	(B)
Total Interior Volume of Dwelling		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ³	Total volume includes all heated interior spaces (including crawlspace if heated).
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> 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 =

Use Table 9.32.3.8 (3) to determine duct size. in Ø

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)		Max. Equiv. Length per table	Installed Equiv. Length	Principal System CFM
				rigid	flex			

* 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)

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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.

☐ **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 9.37.3.7 (2)

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) or radon 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:

Fan Make _____ Model _____

Exhaust Appliance Actual Installed Cfm _____

Make-up Air Fan Cfm _____

Duct diameter _____ inches

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 _____ X 1.08 X (34° F – _____ °F Winter Design Temp your location) = _____ (kw)
3412 BTUH/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).

Make-up Fan _____ cfm x 1.08 x (54° 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

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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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SENTENCE 9.32.3.4 (3) & (4)

Use this checklist when a centrally ducted HRV (heat recovery ventilator) is used alone or in combination with a Forced Air Heating System to meet principal ventilation system requirements.

Civic Address _____		Permit No. _____	
Climate Zone: _____	Number of Bedrooms	<div style="border: 1px solid black; width: 100px; height: 40px; margin: 0 auto;"></div>	(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		<div style="border: 1px solid black; width: 100px; height: 40px; margin: 0 auto; display: flex; justify-content: flex-end; align-items: center; padding-right: 5px;">ft²</div>	(B)
Total Interior Volume of Dwelling		<div style="border: 1px solid black; width: 100px; height: 40px; margin: 0 auto; display: flex; justify-content: flex-end; align-items: center; padding-right: 5px;">ft³</div>	Total volume includes all heated interior spaces (including crawlspace if heated).
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<div style="border: 1px solid black; width: 100px; height: 40px; margin: 0 auto; display: flex; justify-content: flex-end; align-items: center; padding-right: 5px;">cfm</div>	(C) Exhaust appliances exceeding .5 ACH may require make-up air.

1. Use the bedroom count (Box A above) and total square footage (Box B above) to determine the minimum principal Air Flow rate required by Table 9.32.3.5

Minimum Required Rate

cfn

(D)

2. HRV Make	Model
-------------	-------

3. HRV Capacity: CFM @ 0.4 ESP. Box E must meet Box D requirement.

cfr

(E)

4. List Exhaust Grilles Locations: 1 minimum @ 6 ft or higher from floor of uppermost level.

5. Required Kitchen and Bathroom Exhaust

If HRV used to meet all or part of Kitchen/Bathroom spot exhaust requirements list below.

ROOM	REQUIRED EXHAUST RATE Table 9.32.3.6	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						HRV
		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	Principal System CFM
				Duct Dia (in Ø)				
				rigid	flex			
							TOTAL (must = Box E)	

* 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

* 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.

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6. HRV Fresh Air Distribution (Choose a or b)

a) Supply Air from HRV direct connect to Return Air of a Forced Air Heating System:

- ☐ FA system fan and HRV fan continuous operation and
☐ FA system ducted to supply air to every bedroom and each floor level without a bedroom

b) Supply Air from HRV distributed independently

- ☐ Ducted to every bedroom and each floor level without a bedroom and
☐ HRV fan continuous operation

7. If Heated Crawlspcace present, (Choose one)

- ☐ Minimum of one Forced Air System RA grille located in the crawlspace, OR
☐ No RA grille in crawlspace, choose ventilation Option 1, 2, or 3 per sentence 9.37.3.7 (2)

MAKE-UP AIR Requirements

1. NAFVFA (Naturally Aspirated Fuel Fired Vented Appliance) or radon 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:

Fan Make _____ Model _____ Exhaust Appliance Actual Installed Cfm _____
Make-up Air Fan Cfm _____
Duct diameter _____ inches
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 _____ X 1.08 X (34° F – _____ °F Winter Design Temp your location) = _____ (kw)
3412 BTUH/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).

Make-up Fan _____ cfm x 1.08 x (54° 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

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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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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	<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div>	(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	<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ²	(B)
	Total Interior Volume of Dwelling	<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ³	Total volume includes all heated interior spaces (including crawlspace if heated).
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> 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						
		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	Principal System CFM
				Duct Dia (in Ø)				
				rigid	flex			

* 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*.

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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 for **less than +5°F winter design temperature.**

Make _____ Model _____ Capacity @ _____ cfm (F)
c) Duct Size for Fresh Air intake into return air of CRV: **0.4 ESP**

- ☐ 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 9.37.3.7 (2).

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) **or radon 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 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 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).

Make-up Fan _____ cfm x 1.08 x (54° 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

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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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4

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 coastal climate areas where winter design temperature is warmer than or equal to $+14^{\circ}\text{F}$.

Civic Address _____		Permit No. _____	
Climate Zone: _____	Number of Bedrooms	<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div>	(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		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ²	(B)
Total Interior Volume of Dwelling		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> ft ³	Total volume includes all heated interior spaces (including crawlspace if heated).
.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =		<div style="border: 1px solid black; width: 60px; height: 25px; display: inline-block;"></div> 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 \geq 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)		Max. Equiv. Length per table		Installed Equiv. Length
rigid	flex							

* 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*. © March 2015 TECA All Rights Reserved Checklist 4, pg1 of 2

TOTAL
(must =
Box E)

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 9.37.3.7 (2).

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) or radon 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:

Fan Make _____ Model _____ Exhaust Appliance Actual Installed Cfm _____
Make-up Air Fan Cfm _____

Duct diameter _____ inches

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 _____ X 1.08 X (34° F – _____ °F Winter Design Temp your location) = _____ (kw)
3412 BTUH/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).

Make-up Fan _____ cfm x 1.08 x (54° 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

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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

