

# Make-up Air Checklist: Large Exhaust

SENTENCE 9.32.4.1

Use this checklist as a supplement to checklists 1-4 where the checklists indicate there is a make-up air requirement, **OR** when completing a renovation such as a kitchen which requires a large exhaust fan.

Civic Address: _____	Permit No. _____
Total floor area of living space	[ ] ft <sup>2</sup> (B)
Total interior Volume of dwelling	[ ] ft <sup>3</sup>
Total volume includes all heated interior spaces (including crawlspace if heated).	
0.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 =	[ ] cfm (C)
Exhaust appliances exceeding .5 ACH may require make-up air.	

ROOM	REQ. EXHAUST RATE (9.32.3.6)	SINGLE EXHAUST FAN WITH LARGEST CAPACITY					
		FAN MAKE & MODEL	CFM <sup>2</sup> @ 0.2 ESP	Duct Sizing <sup>1</sup>			
				Duct Dia (in Ø)		Max. Equiv. Length	Installed Equiv. Length
		rigid	flex				

<sup>1</sup> See table 9.32.3.8(3); Fan capacities **exceeding** 175cfm, follow manufacturer's installation instructions or good engineering practice to size duct. Refer to *Ventilation Guidelines Appendix page 16-A, Duct Sizing for Larger Fans*

<sup>2</sup> Where no manufacturer's rating (fan curve or performance table) is available for the kitchen exhaust appliance, assume that as stated in 9.32.4.1.(1), it "discharges air to the exterior at an installed rate" of 60% of the free air or claimed rating.

**1. Make-Up air requirements:** Naturally Aspirated Fuel Fired Vented Appliance (NAFFVA) present? (9.32.4.1)

No, MUA not required for exhaust fan       Yes, Proceed to Step 2

**2. Exhaust appliance present exceeds Box C 0.5 ACH:**

No       Yes, Continue with steps 3 – 5\*

\*An Authorities having Jurisdiction (AHJ) may accept proof of safe building pressurization by following the steps for a de-pressurization test outlined on the next page, thereby not requiring an MUA fan. Confirm with AHJ prior to proceeding with this alternate compliance method.

**3. Make-up air fan required:**

**Make-up air fan:**      Make: \_\_\_\_\_      Model: \_\_\_\_\_      Sone Rating: \_\_\_\_\_

Location: \_\_\_\_\_      Capacity @ 0.4"wc ESP: [ ] CFM (E)

Fan is required to be interconnected with exhaust appliance      Must be ≥ exhaust CFM

**4. Fan duct size and equivalent length:**

Length of duct \_\_\_\_\_ ft      Using: eL (F) & volume (E), determine duct size according to table 9.32.3.8 (3)      [ ] in. Ø

Hood intake \_\_\_\_\_ + 30 ft

Elbows x 10 ft. each \_\_\_\_\_ ft      → Total equivalent length (eL) [ ] ft. (F)      [ ] FLEX      [ ] RIGID

**5. Supply air tempering:**

Area make-up air delivered to:       Occupied area      Required supply temp. 54°F (12°C)       Unoccupied area\*\*      Required supply temp. 34°F (1°C)

Heating load for tempering:      MUA CFM      X 1.08 X ( \_\_\_\_\_ °F - \_\_\_\_\_ °F) = \_\_\_\_\_ BTUH

Req. SA Temp.      2.5% Design Temp

[ ] ÷ 3412 = [ ] kW

**\*\*If make-up air is delivered to normally unoccupied area, complete this area to indicate method for transfer into occupied space:**

\_\_\_\_\_ CFM      X 1.08 X \_\_\_\_\_ °F      = \_\_\_\_\_ BTUH      ÷ 3412 = \_\_\_\_\_ kW

Typ. ΔT (54°F - 34°F)

Additional heating & air path provided by: \_\_\_\_\_

## Depressurization Test Procedure:

Rational of Requirement:

- The safe operation of NAFFVA equipment relies on the thermal buoyancy of its vent products. The operation of a high-volume exhaust fan in a small or tightly constructed dwelling can draw the venting flue gasses back into the dwelling, causing harm.
- This test will determine if the safe threshold of  $-5 \text{ Pa}$  ( $-0.02'' \text{ WC}$ ) is exceeded with the fan running.

Consider this procedure only if the authority having jurisdiction (AHJ) **has agreed in advance to the acceptability of this alternative method** (equivalency) as proof that chimney safety to 9.32.4.1 is maintained.

**This test must be carried out exactly as outlined in the steps below. The repeated measurements in Steps 3 - 5 are required for accuracy when measuring very low pressures with a manometer.**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

AHJ has approved this procedure as an equivalent method to proving chimney safety (9.32.4.1)

Renovation contractor accepts risk of retrofitting a make-up air system if dwelling fails this test

1. Close ALL exterior doors, windows, hatches, & fireplace dampers etc. Open combustion / make-up air ducts.

2. Zero the manometer

3. Measure indoor air pressure with all exhaust equipment off:

in. w.c. (A)

4. Measure indoor air pressure with large exhaust appliance on:

in. w.c. (B)

5. Measure pressure with all exhaust equipment off:

in. w.c. (C)

6. Averaged indoor air pressure with exhaust equipment off:

$$= \frac{A + C}{2}$$

in. w.c. (D)

7. Net indoor air pressure with large exhaust appliance on:

$$= B - D$$

in. w.c. (E)

8. Box E is:   $\leq 0.02$  in w.c. (5 Pa) – make-up air for this exhaust appliance is not required

$> 0.02$  in w.c. (5 Pa) – make-up air is required – complete steps 3-5 on previous page

### Installer Certification:

I hereby certify that the design and installation of the ventilation system complies with the 2024 B.C. Building Code.



**TECA Ventilation Certification Stamp**  
2012 or newer is current

Date \_\_\_\_\_

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

Signature \_\_\_\_\_

Company \_\_\_\_\_

Phone \_\_\_\_\_