Residential Mechanical Ventilation Design Summary *(For systems serving one dwelling)*

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The owner is required to have this form filled out (both pages) by the contractor to show the ventilation system has been designed in accordance with the requirements of the current edition of the **National Building Code.**

IT IS THE BUILDER'S RESPONSIBILITY TO ENSURE THAT THE ACTUAL INSTALLATION MEETS THE DESIGN.

Builder

Builder Name:

Builder Address:

Location

Jobsite Address:

Ventilation Contractor (if known)

Name:

Address:

Total Ventilation Capacity (TVC)

Required (see page 2)_____L/s /01

Principal Ventilation Capacity (PEC)

Minimum Capacity Required = TVC x 50% (or x 0.5) = _____L/s /02

Maximum Capacity Permitted = TVC x 75% (or x 0.75) =_____L/s /03
Without controlling volume

Actual Principal Exhaust Capacity (PEC) (see page 2) = _____L/s /04

Line /04 must be > line /02 and < line /03 or go to variable Flow control

If line /04 > line /03 and you do not want variable flow, it may be necessary to place a damper in the duct to lower the flow to an acceptable range

Principal Outdoor Supply Capacity (PSC)

Actual Principal Supply Capacity (PSC) (see page 2) = _____L/s /05

If supply fan is provided the principal supply capacity must match the principal exhaust capacity - Line /05 must = Line /04 and /09 must = line /08

Variable Flow Control for (PEC) or (PSC)

Reduced Minimum Capacity Required = 0.9 x (line /02) _____ L/s /06

Reduced Maximum Capacity Permitted = 1.1 x (line /02) _____ L/s /07

Reduced Actual Principal Exhaust Capacity = (line /08 must be > than line /06 and < than line /07) /08

Reduced Actual Principal Exhaust Capacity = (line /09 must = line /08) /09

Supplement Exhaust Capacity (SEC)

Minimum SEC = TVC - PEC = (line /01 - line /04) _____ L/s /10

Actual Total SEC meeting sone rating (see page 2) _____L/s /11

HRV (Balance check)

If PEC (line /04 > PSC (line /05) then PSC/PEC x 100 must be >= 90%
If PSC (line /05 > PEC (line /04) then PEC/PSC x 100 must be >= 90%

Actual HRV Balance = _____%

System Design

SHBA Design Sheet #_____

CMHC Design Option # _____

Designed to CSA-F326-M91 _____

Exhaust fans with outdoor air supply to forced air furnace return	1
Exhaust fans with outdoor air supply fan to forced air furnace return	2
HRV - supply to forced air furnace return, exhaust inlets from rooms	3
HRV - supply and exhaust ducts to forced air furnace return	4
Exhaust and supply fans to and from rooms (not connected to furnace)	5
HRV not coupled to a forced air furnace	6
CAN/CSA - F326-M91	7

Make-up Air for Exhaust Vents > 75 L/s

Appliance/Vent (Max) Capacity (Min) Capacity > 75 L/s	1

Make-up air must be provided between min. and max. capacity above
Actual Make-up air provided = _____L/s

Appliance/Vent (Max) Capacity (Min) Capacity > 75 L/s	2

Make-up air must be provided between min. and max. capacity above
Actual Make-up air provided = _____L/s

Kitchen Exhaust Inlet is not the (PEC)

Minimum capacity for separate exhaust fan for each kitchen = 50 L/s
Kitchen exhaust supplementary fan capacity = _____L/s

Bathroom Exhaust Inlet is not part of (PEC)

Minimum capacity for separate exhaust fan in each bathroom = 25L/s
Bathroom exhaust supplementary fan capacity = _____L/s

Combustion Air / CO Alarm

For all indirect vented appliances and solid fuel burning appliances
Combustion air provided? Y N n/a
CO alarm provided? Y N n/a

Certification

I certify that this ventilation system has been designed in accordance with the requirements of the 2010 National Building Code, section 9.32.3 or to CSA-F326-M91

Name:

Company:

Address:

Telephone:

Signature:

Ventilation Specification Sheet (continued from page 1)

Capacity	# of Rooms	Total Capacity Required L/s (9.32.3.3)
5 L/s		
10 L/s		
	Total (TVC)	

Note: You may wish to design the (TVC) to include capacity for future basement development.

Principal Exhaust Fan(s)

Fan #	Sone	Location of Inlet	Capacity (L/s) (Actual)	Capacity (L/s) (Min line /02)	Duct (size/type)

Total (PEC)

The duct size and type can be sized according to Table 9.32.3.11 provided -
(a) The longest total duct length from intake grille to outdoor hood does not exceed 12m but is not less that 6m, and
(b) The number of elbows does not exceed 4 but is not less that 2.
Note: See clauses 9, 10 and 11 of sentence 9.32.3.4

HRV? N ☐ Y ☐

Specify pre-heat coil for furnace if provided -

Outdoor Air Supply

Fan #	Sone	Capacity (L/s) (Actual)	Capacity (L/s) (Min line /02)	Duct (size)	Duct (type)

Total (PSC)

The duct size and type can be sized according to Table 9.32.3.6.A for supply air with no fan provided the total duct length <= 6m and # of elbows <= 2, or sized to Table 9.32.3.6.B for supply air with a fan where the total duct length <= 8m, # of elbows <= 3, and auxiliary supply fan <= 150% of line /02 supply ducts to rooms from HRV; the main trunk and branch ducts may be sized according to 9.32.3.7.B and 9.32.3.7.C where the total duct length from outside hood to register <= 21m and total number of fittings <= 8.

WARNING: The design of outdoor air does not guarantee that more air won't be drawn into the furnace causing damage to the heat exchanger. It is the builder's responsibility to do a flow test, if necessary, to ensure the installation meets the design criteria.

Supplemental Exhaust Fan(s)

Fan #	Sone	Location of Inlet	Capacity (L/s) (Actual)	Duct (size/type)	

Total (SEC)

The duct size and type can be sized according to Table 9.32.3.5 provided total duct length <= 9m and # of elbows <= 4.

Note: An intake and exhaust hood and sleeve (minimum 900mm apart) must be provided for a future dryer. If the dryer model number & size is known then a fan may be required as well.

Warning: Exhaust fans can cause a back draft down undirected vented chimneys. It is the builder's responsibility to ensure all systems are properly interconnected and to ensure the actual flows meet those submitted with the design.

Include all supplemental fans here but only add up the fans making up the (TVC). Where a supplemental exhaust fan has a capacity exceeding 75 L/s a makeup fan must be installed. Specify the makeup air fan under the "Outdoor Air Supply" table above. Where the inlet duct size varies from the discharge duct size, both must be shown.

Abbreviations: Main Header or Distribution - **MN /** Branch Line - **BR /** Smooth Duct - **SD /** Flexible Duct - **FD**