49NORTH BUILDING SOLUTIONS
CONSULTING ENGINEERS & BUILDING OFFICIALS

System 7 Exhaust Only

Ventilation System Design Form for Section 9.32 (2015 National Building Code of Canada)

Information and Drawing Requirements

Design to conform to NBC 2015 Section 9.32	**LOCATION (Address):**
Builder Name:	Ventilation Contractor:
Address:	Address:

Normal Operating Exhaust Capacity (NOEC) of Principal Ventilation Fan

Number of Bedrooms	Minimum	Maximum
1	16	24
2	18	28
3	22	32
4	26	38
5	30	45
6	34	45
7	38	45

Minimum Capacity Permitted _____L/s	01	Maximum Capacity Permitted _____L/s	02

Actual Normal Operating Exhaust Capacity (NOEC) of Principal Exhaust Fan (see page 2)

Actual NOEC _____L/s	03
Confirm that Line 03 ≥ Line 01 and ≤ Line 02 Y☐ N☐	04

Two Speed Principal Exhaust Fan

Maximum Operating Exhaust Capacity = _____L/s	05
High speed of 2 speed fan (2.5 x Line 01) = _____L/s	06
Line 05 - Line 06 = _____L/s	07

Forced Air Distribution System

Circulation Fan Rate Capacity (low speed) = _____L/s	08
Minimum capacity required** = 5 x Line 03 = _____L/s	09
Confirm that Line 08 ≥ Line 09 Y☐ N☐	10
Excluding solid fuel burning appliances, are there any fuel fired space or water heating units that are not direct vented or mechanically vented? Y☐ N☐	11
Are there any solid fuel burning appliances in the building? (wood fire places or stoves, etc) Y☐ N☐	12
Has the capacity for the exhaust fans been measured at the minimum external static pressure differentials of 92 Pa (0.25" water column) principal ventilation fan with ducts on one side only? Y☐ N☐	13

Actual Number of Bedrooms _____

Note: It is recommended that the NOEC falls within range of current and future bedrooms. If more than 5 bedrooms, a kitchen supplemental exhaust fan > 50 l/s will be required. If there are more than 7 bedrooms, this form cannot be used and the ventilation system must be designed to CAN/CSA F326-M.

System Design (check one)

☐ **S7** Exhaust Only System cannot be used if:
1) Line 10 is 'N'
2) Line 11 is 'Y'
3) Line 12 is 'Y', or
4) Line 13 is 'N'

Kitchen Supplementary Exhaust Fan

Kitchen supplementary exhaust fan capacity = _____L/s
Minimum capacity for separate exhaust fan for kitchen = 50 L/s except where the principal exhaust fan draws from the kitchen only, or where it draws from the kitchen and other rooms and Line 07 ≥ 0.

Bathroom Supplementary Exhaust Fan

Bathroom supplementary exhaust fan capacity = _____L/s
Bathroom minimum exhaust fan capacity = 25 L/s per room

Controls (see the NBC for other requirements)

A switch marked VENTILATION FAN is required in the living area. If more than one fan is used for the principal exhaust system they must be interconnected and all controlled by the switch noted above.
If the kitchen exhaust is provided only by the principal exhaust fan, a switch must be located in the kitchen to activate the high exhaust rate of the principal exhaust fan. **The switch is to be labelled "Kitchen Exhaust" as per Clause 9.32.3.7(3)(b).**

** Forced Air Distribution equal to 5 times the NOEC must be provided to each bedroom, any storey without a bedroom (including basements & crawlspaces), to the principal living area if there is a bedroom on each storey, and with adjustable supply duct diffusers, or adjustable/accessible supply duct dampers that indicate damper position.

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Information and Drawing Requirements

Principal Exhaust Fan(s)				
Fan #	Sone	Location of Inlet	Normal Operating Exhaust Capacity (NOEC) (L/s)	Maximum Operating Exhaust Capacity (MOEC)(L/s)
		NOEC		
		Outdoor Air Supply (OAS) For Principal Exhaust Fan(s)		MOEC with 2 speed fans used
			Confirm OAS = NOEC Y ☐ N ☐	

All ducts (supply, exhaust, and make-up air) shall be sized according to Article 9.32.3.11 and Table 9.32.3.11.A.

Grease filters are required on all range hoods, range top fans, and all exhaust intakes located within 3m horizontally of a range.

Principal ventilation fans are required to have a maximum sone rating of 2.0.

If more than one fan is used to provide the required normal operating exhaust capacity, the switch(es) shall be inter-connected to control all fans as per Sentence 9.32.3.3.(3).

Supplemental & Mechanical Exhaust Fan(s)			
Fan #	Sone	Location of Inlet	Capacity (L/s)

Outdoor intake and exhaust openings shall comply with Article 9.32.3.13. If a fan is used in conjunction with outdoor air it must be approved by the manufacturer for untempered outdoor air and continuous operation.

Make-up air is required where there is one or more fuel burning appliances that is not direct vented or mechanically vented (exception may apply if a successful spillage test is conducted). A different design system will be required. Please refer to Design Sheets for S1 or S2, or S3, S4, S5 or S6 designs.

DECLARATION	
I declare that this system has been designed in accordance with requirements of the 2015 National Building Code of Canada Subsection 9.32	
Name:	Telephone:
Company:	Telephone:
Address:	Signature:

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