

NEW Ventilation System

Excerpt from BC Building Code 2015

Energy Efficiency of Buildings (Zone 4 Alberni)

Address _____

Permit _____

9.32 Principal Ventilation system

Mechanical exhaust fan or HRV running continuously at _____ l/s during the heating season see table 9.32.3.5

Mechanical makeup air (choose one of the five below) l/s x 2.12=cfm

- passive air as per 9.32.3.(6) see 9.32.3.4.(6)
- furnace fan to run continuously during heating season with fresh supply air. see 9.32.3.4.(2)
- A fan circulating air from or to all bedrooms and to a common area with fresh supply air and to run continuously during the heating season. see 9.32.3.4.(5)
- HRV to provide supply air through dedicated ducting to/from each bedroom and floor levels without bedrooms to run continuously during the heating season. see 9.32.3.4.(4)
- Provide fresh air to and from furnace system through the HRV. The furnace and HRV to run continuously during the heating season. see 9.32.3.4.(3)

9.32.3.5. Principal Ventilation System Exhaust Fan

- 1) A principal ventilation system exhaust fan shall
 - a) run continuously, and
 - b) provide at least the air-flow rate specified in Table 9.32.3.5.

| Table 9.32.3.5. Principal Ventilation System Exhaust Fan Minimum Air-flow Rate Forming part of Sentence 9.32.3.5.(1) | | | | | |
|--|----------------------------|-----|-----|-----|----|
| Floor Area, m ² | Minimum Air-flow Rate, L/s | | | | |
| | Number of Bedrooms | | | | |
| | 0-1 | 2-3 | 4-5 | 6-7 | >7 |
| < 140 | 14 | 21 | 28 | 35 | 42 |
| 140-280 | 21 | 28 | 35 | 42 | 49 |
| 281-420 | 28 | 35 | 42 | 49 | 56 |
| 421-560 | 35 | 42 | 49 | 56 | 64 |
| 561-700 | 42 | 49 | 56 | 64 | 71 |
| >700 | 49 | 56 | 64 | 71 | 78 |

- 2) For the purposes of Sentence (1), the capacity rating of the principal ventilation system fan shall be determined, based on air-flow performance at 50 pa of external static pressure, in accordance with
 - a) HVI Publication 916, "Airflow Test Procedure," or
 - b) CAN/CSA-C260-M, "Rating the Performance of Residential Mechanical Ventilating Equipment."
- 3) The principal ventilation system exhaust fan shall be
 - a) designed to run continuously, and
 - b) controlled by a dedicated switch that
 - i) has 2 settings, on and off,
 - ii) is located where it will be accessible for the purposes of servicing the exhaust fan but not likely to be turned off inadvertently, and
 - iii) is clearly marked "PRINCIPAL VENTILATION EXHAUST FAN."
- 4) If the principal ventilation system exhaust fan is designed to run at multiple air-flow rates,
 - a) the air-flow rate of the fan shall be controlled by a switch other than the switch described in Clause (3)(b), and
 - b) the lowest air-flow rate shall not be less than the air-flow rate specified in Table 9.32.3.5.

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- 5) The sound rating of the principal ventilation system exhaust fan shall not exceed 1.0 sone when running continuously at the air-flow rate specified in [Table 9.32.3.5](#), as determined in accordance with
 - a) [HVI Publication 915, "Loudness Testing and Rating Procedure,"](#) or
 - b) [CAN/CSA-C260-M, "Rating the Performance of Residential Mechanical Ventilating Equipment."](#)

9.32.3.4. Principal Ventilation System Supply Air

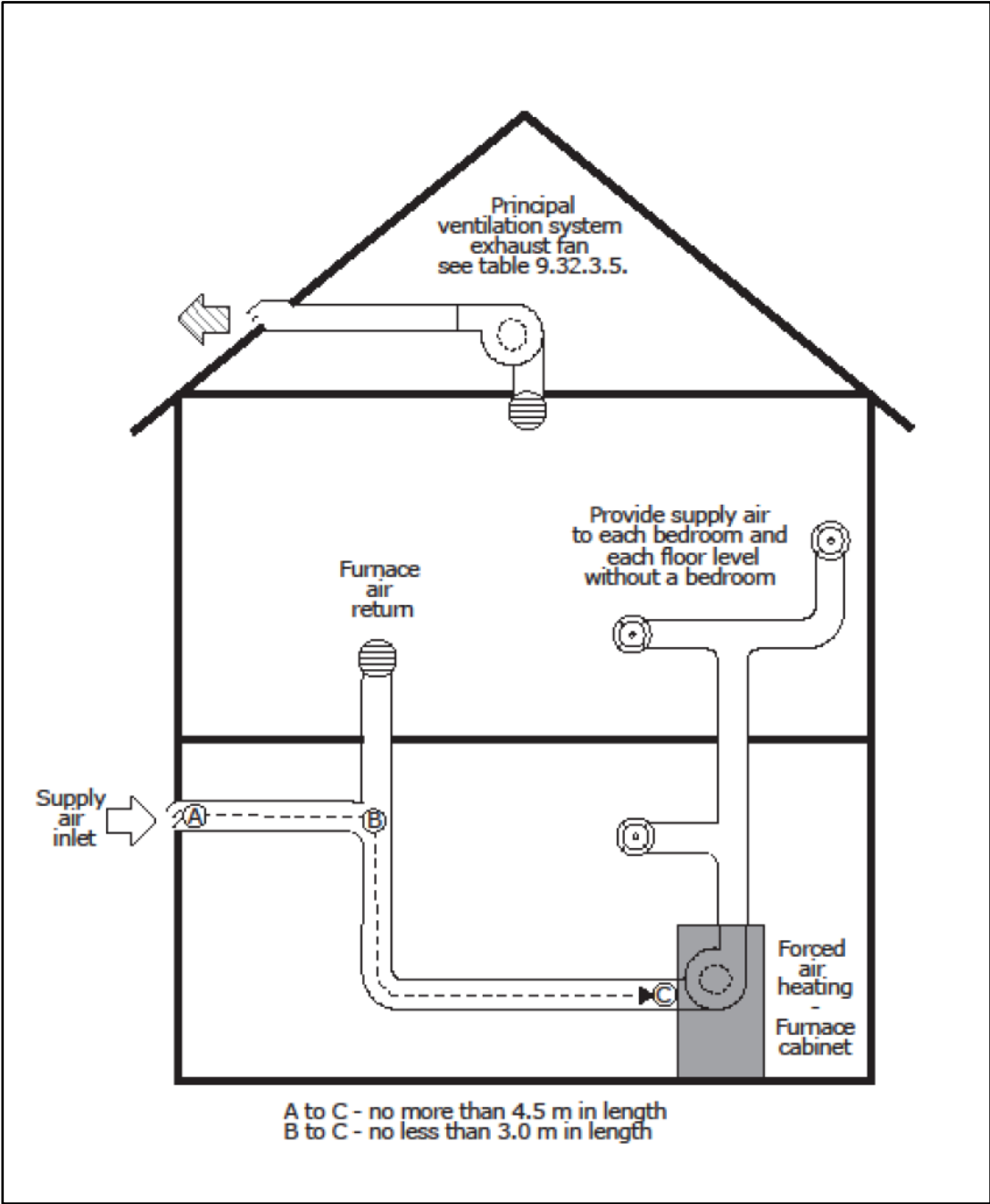
(See Appendix A.)

- 1) Except as provided in [Sentence \(6\)](#), a principal ventilation system shall mechanically provide supply air in accordance with [Sentence \(2\), \(3\), \(4\) or \(5\)](#).
- 2) Where the principal ventilation system is a ducted forced-air heating system, the ducted forced-air heating system shall
 - a) provide supply air through the ducting to
 - iv) each bedroom, and
 - v) each floor level without a bedroom,
 - b) draw supply air from an outdoor inlet that is connected to the furnace cabinet by ducting
 - i) that is no more than 4.5 m in length, and
 - ii) unless a flow control device is used, that intersects the return air plenum at a point from which the ducting to the furnace cabinet is no less than 3 m in length,
 - c) draw supply air through ducting that is
 - i) rigid ducting with an equivalent diameter of at least 100 mm, or
 - ii) flexible ducting with an equivalent diameter of at least 125 mm, and
 - d) have a furnace air circulating fan set to run continuously.
- 3) Where the principal ventilation system is a ducted forced-air heating system used in combination with a heat-recovery ventilator,
 - a) the ducted forced-air heating system shall conform to [Sentence \(2\)](#),
 - b) the heat-recovery ventilator shall draw supply air from an outdoor inlet into the return air plenum of the ducted forced-air heating system, and
 - c) the heat-recovery ventilator shall draw exhaust air, through dedicated ducting,
 - i) from one or more indoor inlets, at least one of which is located at least 2 m above the floor of the uppermost floor level, and
 - ii) at the capacity rating of the heat-recovery ventilator, which shall be no less than the air-flow rate specified in [Table 9.32.3.5](#).
- 4) Where the principal ventilation system is a heat-recovery ventilator, the heat-recovery ventilator shall
 - a) provide supply air through dedicated ducting to
 - i) each bedroom, and
 - ii) each floor level without a bedroom, and
 - b) draw exhaust air, through dedicated ducting,
 - i) from one or more indoor inlets, at least one of which is located at least 2 m above the floor of the uppermost floor level, and
 - ii) at the capacity rating of the heat-recovery ventilator, which shall be no less than the air-flow rate specified in [Table 9.32.3.5](#).
- 5) Where the principal ventilation system is a ducted central-recirculation ventilation system, the ducted central-recirculation ventilation system shall
 - a) draw supply air from an outdoor inlet connected upstream of the fan, and
 - b) draw air from
 - i) each bedroom and deliver it to a common area, or
 - ii) a common area and deliver it to each bedroom.
- 6) A principal ventilation system need not conform to [Sentence \(1\)](#) if the principal ventilation system
 - a) services a dwelling unit that
 - i) is located where the January design temperature, on a 2.5% basis determined in conformance with Article 1.1.3.1., is greater than -10°C ,
 - ii) has only 1 storey and a floor area within the building envelope of less than 168 m² (see Appendix A), and
 - iii) does not have a ducted forced-air heating system, and

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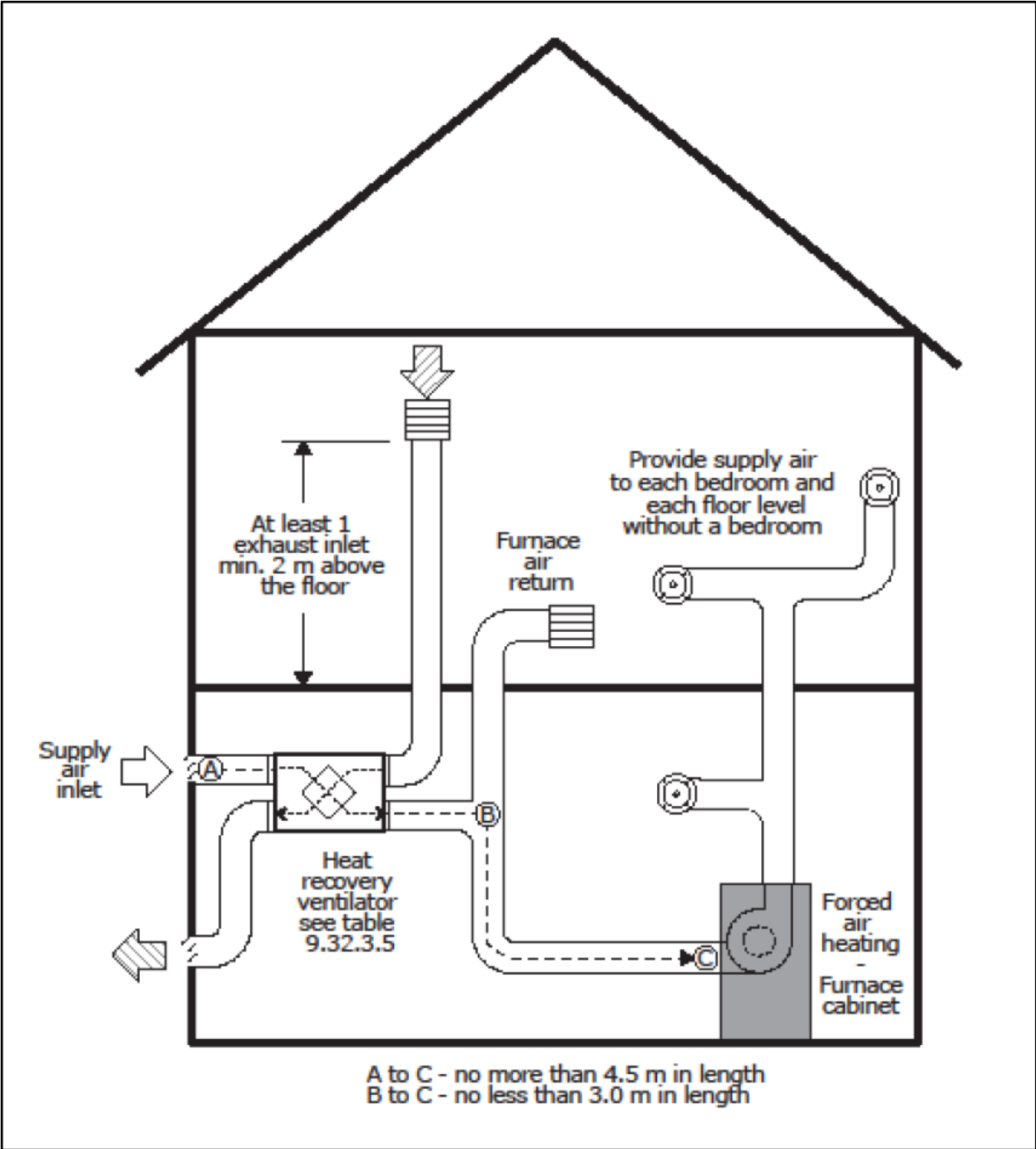
- b) provides supply air passively from outdoors through dedicated inlets that
 - i) are located in each bedroom and at least one common area,
 - ii) are located at least 1 800 mm above the floor, and
 - iii) have an unobstructed vent area of not less than 100 mm².



9.32.3.4.(2)

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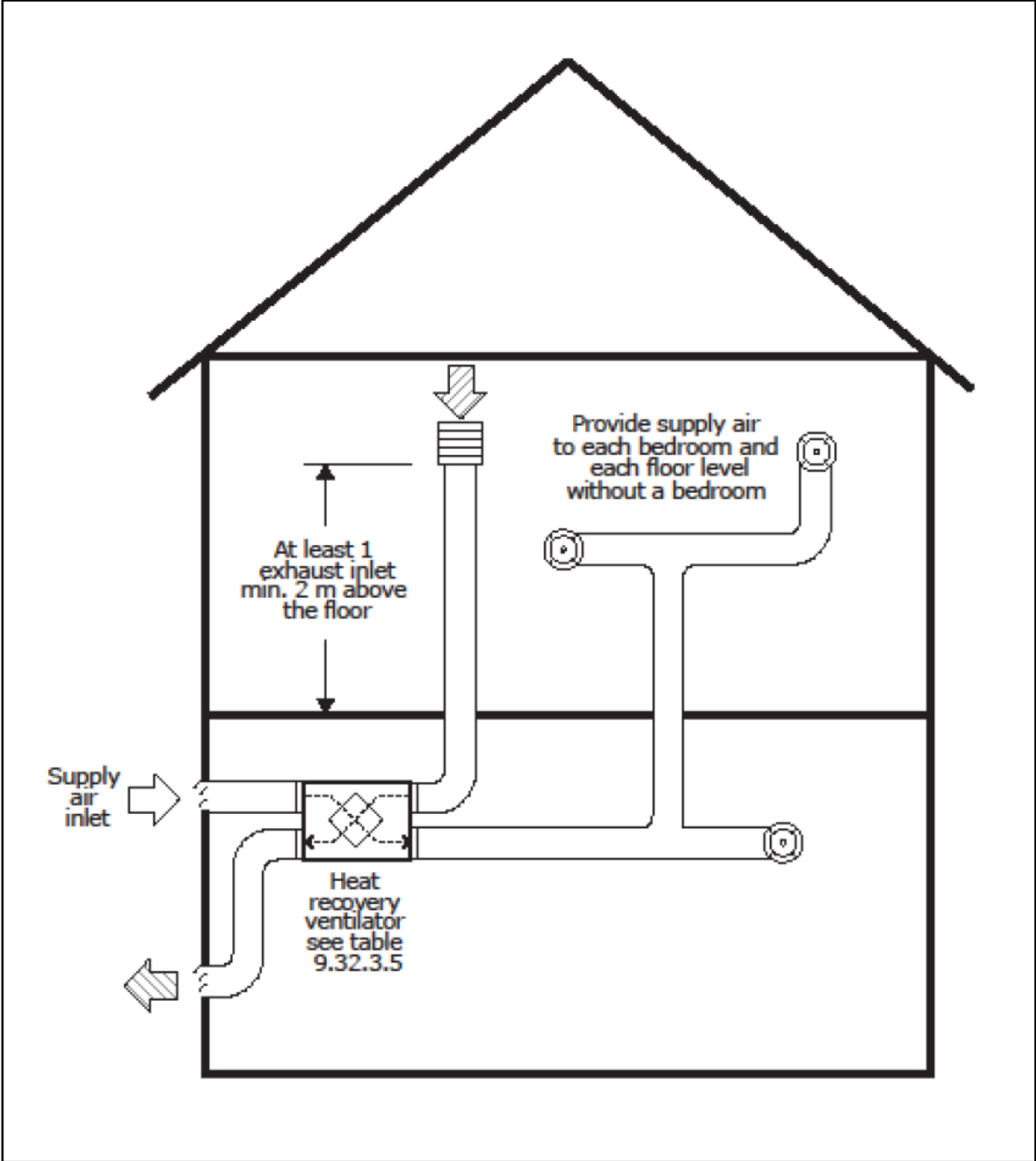
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9.32.3.4.(3)

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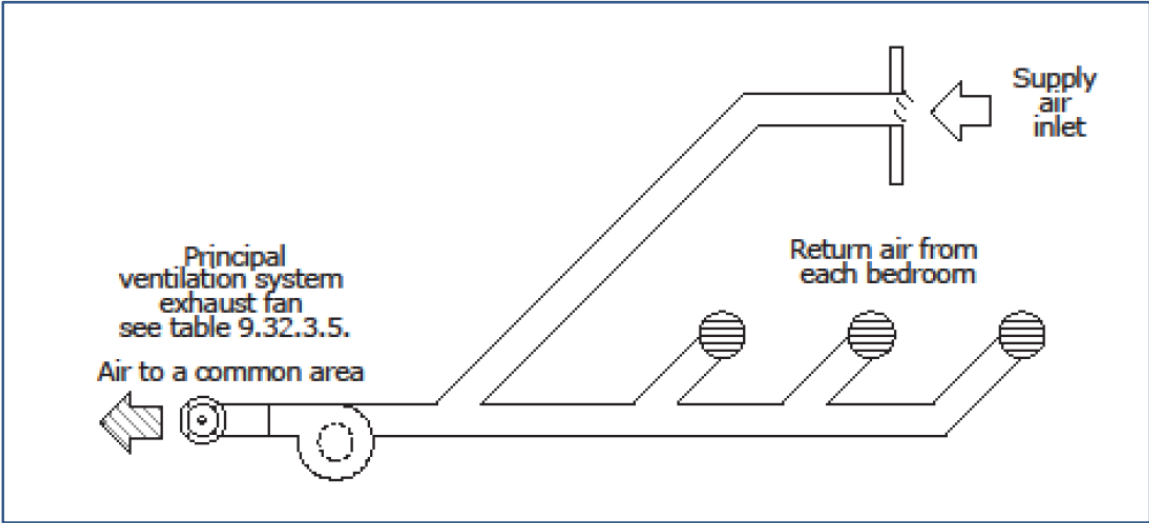
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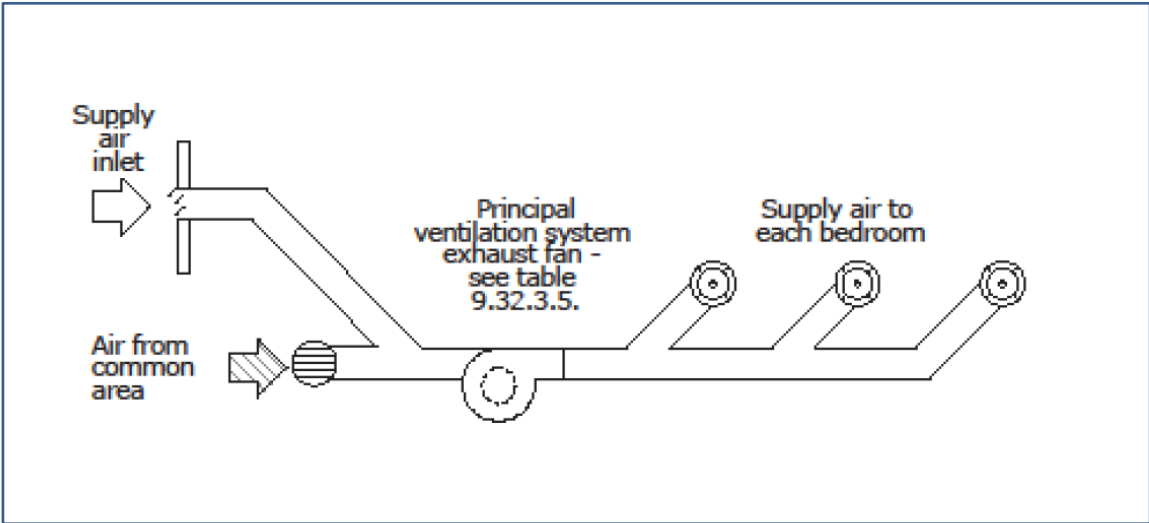
9.32.3.4.(4)

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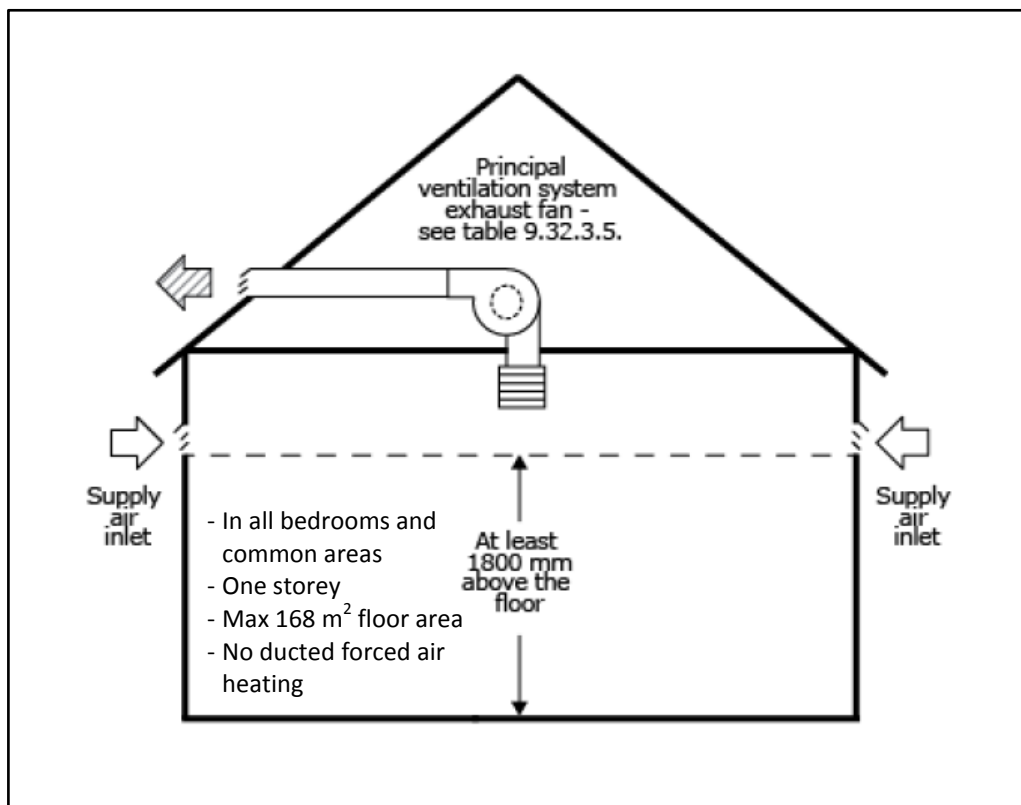
9.32.3.4.(5)(i)



9.32.3.4.(5)(ii)

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9.32.3.4.(6)