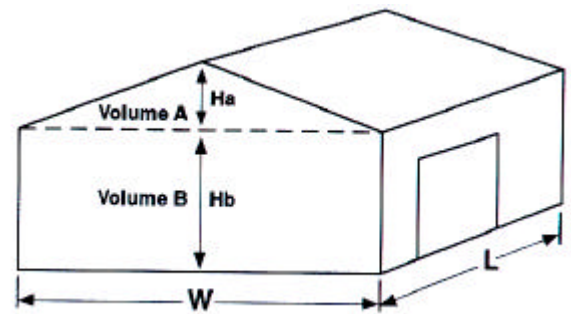


ROOF VENTILATOR EXHAUST CALCULATIONS

- Determine the volume of the building in cubic metres (i.e LengthxWidthxHeight) =
- Select air changes per hour from the table detailed below =
- Calculate the number of vents required for either side of the ridge by using a typical centre distance of 5m. Wider industrial buildings may require one or more Ventilators per bay =
- Determine the litre per sec exhaust capacity required per ventilator for selected number of ventilators. =

Total Volume
= Volume of A + Volume of B



Utilise the following equation:

$$N = \frac{VOL \times A/C \times 0.278}{E}$$

- Select wind speed required from the Roof Ventilator Performance Data Table.
- Select the Ventilator Throat size which will provide the exhaust rate nearest to, but not less than, the calculated figure.

Note: 0.278 converts M³/hr to Litres/second

TABLE OF RECOMMENDED AIR CHANGES PER HOUR:

Factories & workshops	5 to 10
Warehouses	5 to 8
Gyms & Squash Courts	5 to 10
Assembly Halls	10 to 15
Garages	10 to 15
Toilets	12 to 15
Laundries	12 to 20

Air change rate must perform to the local health department's code covering the type of installation.

For stables, piggeries & poultry houses, the air change rate is dependent upon the number of confined animals, however can range between 10 - 50.

EXAMPLE

- Building 45m(L) x 20m(W) x 5m(H)
= 4500m³
- Air Changes per hour required, Estimated = 5
- Number of Vents selected, = 8
- Exhaust Capacity required per Ventilator
 $\frac{4500 \times 5 \times 0.278}{8} = 781 \text{ L/s per vent}$
- Average Sydney wind velocity of 12km/h selected.
- From the Roof Ventilator Performance Data Table select 8 off 450 Industrial Roof Ventilators.