ALSYNITE

ROOF VENTILATORS

Industrial Range

GENERAL OVERVIEW

Alsynite Roof Ventilators are designed to expel hot, humid and stagnant air from commercial and industrial buildings. Powered by the wind, there are no running costs providing a cooler, more comfortable work environment.

PRODUCT CHARACTERISTICS

Alsynite Roof Ventilators are constructed from a rust resistant lightweight aluminium. The lightweight structure also assists in producing a low starting torque to initiate the ventilation function. The bearing system is a sealed prepacked double row ball bearing type. Located out of the air flow, the bearings are virtually maintenance-free and emit little noise while operating. The vertical wind vane with its wind catching lip, assists in providing a low starting torque and improves ventilation through a greater "sail" area on each vane.

Sizes

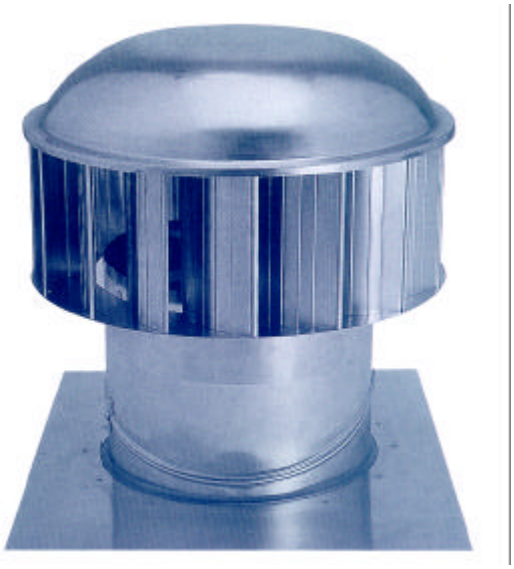
Alsynite Roof Ventilators are available in five (5) different throat sizes ranging from 150mm to 800mm. The diameter of each throat size is constant along the throat shaft. This maximises the extraction capacity for the ventilator's diameter. Other unit dimensions are detailed on the following specification page.

Colours

The standard colour is an aluminium mill finish. Powder coated colour finishes are also available, subject to special order.

Test Results

In independent laboratory trials our range of ventilators withstood the equivalent to 160 Kilometres/h winds combined with 200 millimetres/hour rain. It showed no damage or water entry.



Installation

Alsynite Roof Ventilators are ideal for both commercial and industrial buildings. Installation on new or existing roofs is a simple process, as the metal base can be shaped on site to any roof profile. Back flashing to existing non performing ridge ventilators is also possible.

Variable Pitch Base

The Alsynite Roof Ventilator can be easily installed due to it's unique Vari-Pitch base. This system allows the ventilator to be tailored to fit the roof pitch up to a 30º angle. In "cyclonic prone" areas, refer to your authorised Alsynite distributor for appropriate cyclonic installation procedures.

Note: The 150mm and 800mm roof ventilators are available as turbine heads only. Fabricated, fixed bases are available subject to special order.

Warranty

Alsynite's Industrial Ventilator range is supported by a 15 Year Performance Warranty. Details are available from the nearest Alsynite distributor.

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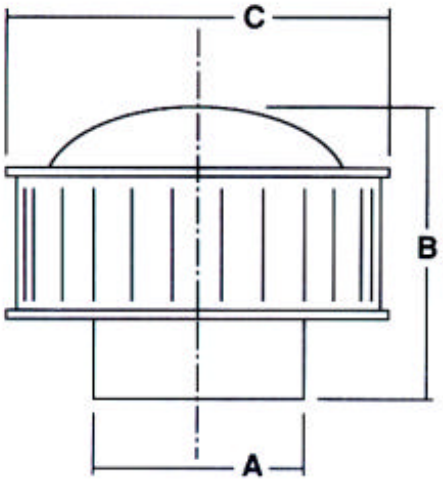
ROOF VENTILATOR DIMENSIONS

A = Nominal Throat Size

B = Turbine Head Height

C = Turbine Head O/D



Dimension A (mm)	Dimension B (mm)	Dimension C (mm)	Base Dimensions (mm)	Approx Weight
150	310	285	Not required	1.6kg
300	400	475	580 x 480	3.5kg
450	550	650	740 x 640	6.5kg
600	550	800	900 x 900	12.3kg
800	590	1000	1200 x1200	23.0kg

ROOF VENTILATOR PERFORMANCE DATA

Throat Size of Ventilator (mm)	Exhaust Capacity Litres Per Second		
	Wind 6km/h	Wind 12km/h	Wind 16km/h
150	110	210	277
300	270	480	620
450	480	790	990
600	620	1104	1420
800	1233	2131	2730

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ROOF VENTILATOR EXHAUST CALCULATIONS

1. Determine the volume of the building in cubic metres (i.e LengthxWidthxHeight) = VOL
2. Select air changes per hour from the table detailed below = A/C
3. 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 = N
4. Determine the litre per sec exhaust capacity required per ventilator for selected number of ventilators. = E

   Utilise the following equation:

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

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

Note: 0.278 converts M^3/hr to Litres/second

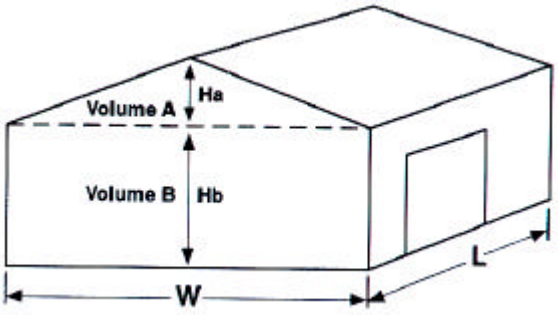
TABLE OF RECOMMENDED AIR CHANGES PER HOUR:

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.

Total Volume
= Volume of A + Volume of B



EXAMPLE

1. Building 45m(L) x 20m(W) x 5m(H) = 4500m^3 VOL
2. Air Changes per hour required, Estimated = 5 A/C
3. Number of Vents selected, = 8 N
4. Exhaust Capacity required per Ventilator
   $\frac{4500 \times 5 \times 0.278}{8}$ = 781 L/s per vent E
5. Average Sydney wind velocity of 12km/h selected.
6. From the Roof Ventilator Performance Data Table select 8 off 450 Industrial Roof Ventilators.

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LOCATING ROOF VENTILATORS

To ensure that the ventilators are correctly positioned, it is important to understand the pattern of the wind as it blows across a building. This understanding, will allow the ventilator to be located in the most ideal position, in order to take full advantage of the prevailing winds.

There are no specific formulas on ventilator locations, however the following points provide a range of recommendations:

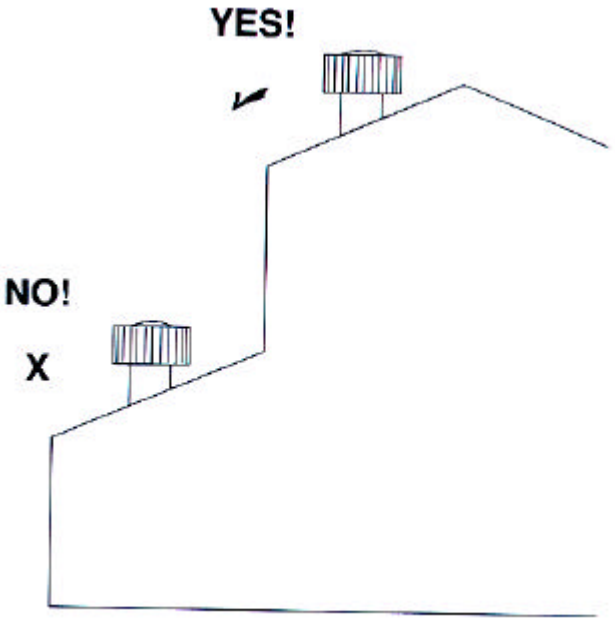
1. Attempt to locate the ventilator in a position of undisturbed air flow from all directions. This is not always possible, however, there will be some positions which are better than others.

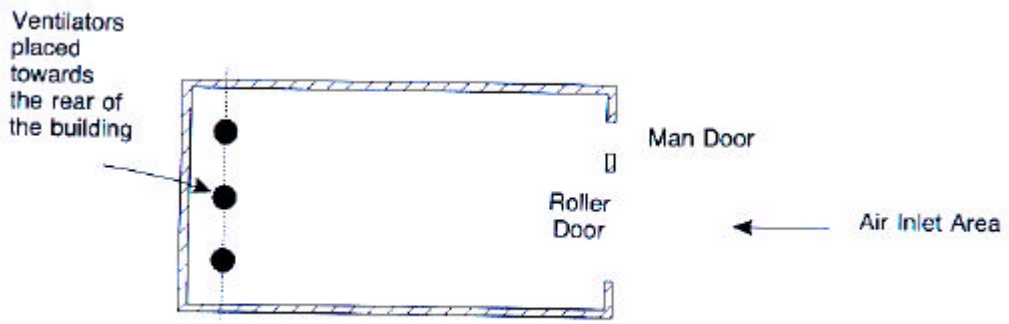
2. Do not install a ventilator on a low roof adjacent to a vertical wall. This area will experience higher turbulence in most winds. If the lower area must be ventilated, we recommend a fabricated extension stack to get above the high roof.

3. Do not install a ventilator below a parapet. Always elevate the unit to catch the direct wind.

4. Do not install a ventilator on a chimney below ridge height.

5. The ideal location of a ventilator is as far away from the air inlet area as possible. This allows the ventilator to extract air from a wider catchment area.





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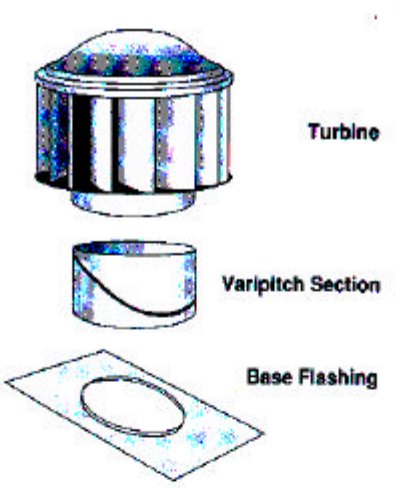
ASSEMBLY INSTALLATION DETAIL

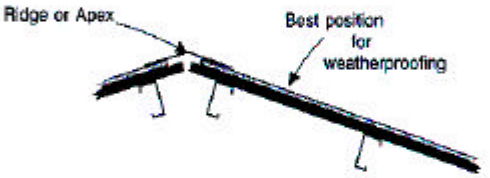
The Alsynite Roof Ventilator system consists of the following components: Turbine, Varipitch Section & Base Flashing.

Note: The 150mm and 800mm roof vents are available as Turbine Head only. Fabricated, fixed bases are available subject to special order.



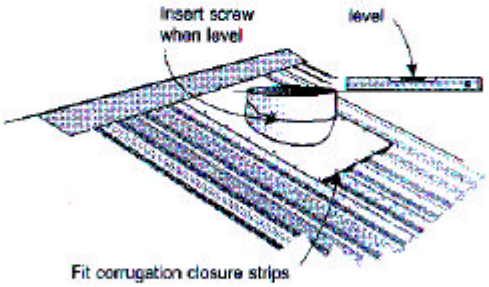
Step 1

Select the position on the roof. Lay the base flashing in place and mark the position of the opening. Always consider the method of weatherproofing the opening; installing close to the ridge or apex is the easiest to weatherproof. Cut the hole. If the roof cladding is metal "Turn Up" the corrugations or pans.



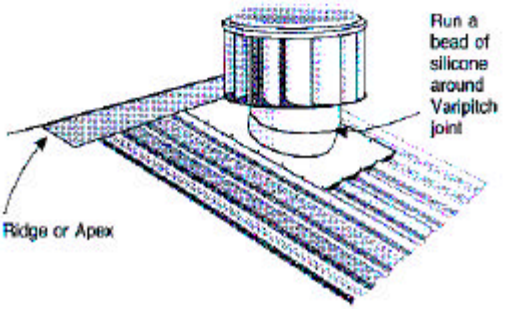
Step 2

Sit the varipitch section on the roof and rotate the top half until the throat is horizontal. It is best to use a level for this purpose. When satisfied, secure the two halves of the varipitch section together to prevent further rotation. This is done by drilling through the existing lugs and inserting a screw or rivet.



Step 3

Place the varipitch section on the base and recheck for level. Fix the varipitch section to the base flange with at least four fasteners. Slide the base flashing into its final position, apply an unbroken bead of silicone or other sealant to all lap areas, and fasten the base flashing securely to the roof cladding. Fit corrugation closure strips to all open corrugations on the low side of the base flashing.



Step 4

Fit the turbine to the varipitch section. Check that it is level and adjust by tilting the turbine as necessary. Fasten the turbine to the top of the varipitch section with at least four fasteners. Coat all exposed fasteners with silicone and apply an unbroken bead of silicone around the slip joint of the varipitch section.

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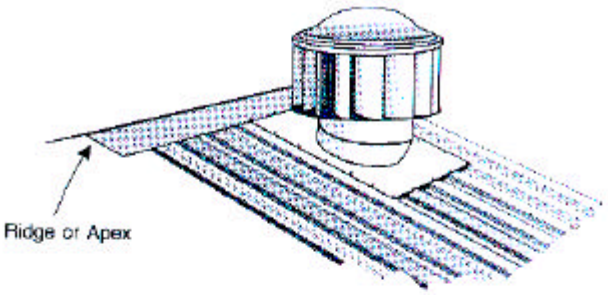
SPECIFIC INSTALLATION SITUATIONS

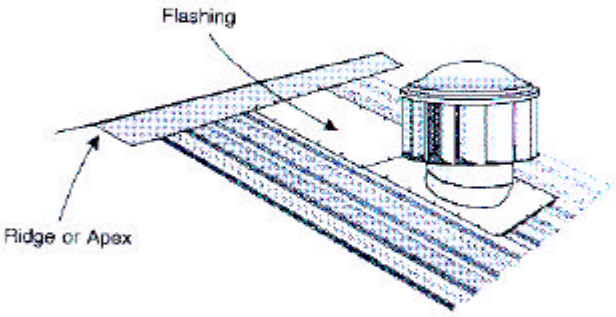
Situation 1

On a metal sheeting roof, the best method of avoiding a leak is to install the ventilator at the peak of the roof where the volume of water on the roof is minimal.



Situation 2

If the ventialor must be installed further down the slope, it is wise to provide a flat flashing to extend back to the ridge or apex.



Situation 3

If the ventilator must be installed at the gutter line or just above, it is wise to provide a tray beneath the sheeting as shown.

Situation 4

A simple and safe method of weatherproofing is to run a series of flashings back to the ridge.