VENTILATION AND CONDENSATION MANAGEMENT FOR ROOF SPACES - VENT DEVICES

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This document provides information on devices used for Ventilation and Condensation Management for roofs.

When looking to meet the roof space ventilation requirements as prescribed in the National Construction Code 2022 (NCC 2022), there are multiple approaches that can be taken to suit the home design as well as environmental conditions such as bushfire rated construction. Lysaght have developed a range of best practice documents (PAB19 and PAB20) to enable compliance to be achieved with metal roofing products. Many of these compliance pathways take advantage of the inherent openings of metal roofing products such as Lysaght CUSTOM ORB®, SPANDEK®, TRIMDEK® etc., or require the use of vent device. These best practice documents can be found on the Lysaght website.

Lysaght offers a range of vent devices to meet the requirements for example

- Corex Cor-vent
- Bradford Wind master Ventilator
- Ampelite spinaway and superflow Ventilator
- Karben Ember guard
- Vent-A-Roof

This document does not cover all the vent devices in the market.
The purpose of this document is to provide information for these vent devices, to simplify integration in to metal clad roof design and act as a reference for industry

NCC COMPLIANCE STATEMENT FOR ROOF

In climate zones 6, 7 and 8, a roof must have a roof space that is ventilated to outdoor air through evenly distributed openings in accordance with DtS NCC 2022 Volume 1 Table F8D5 and Table 10.8.3 of the NCC 2022 ABCB Housing Provisions Standard.

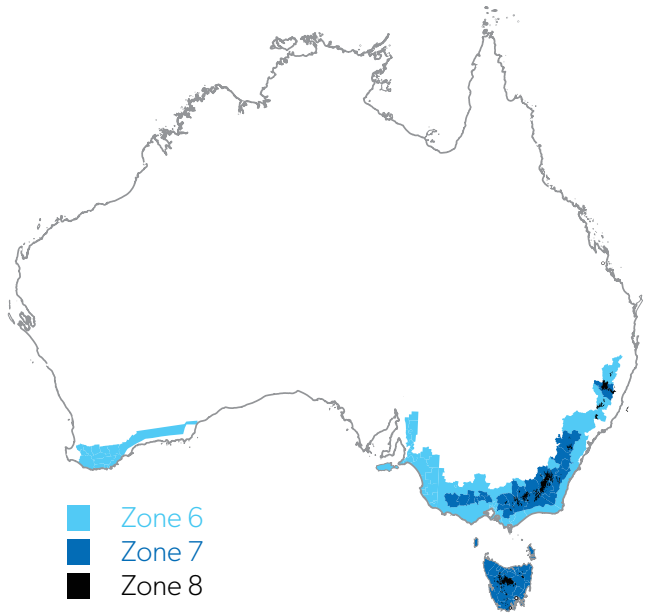


Table 10.8.3 Roof space ventilation requirements

Roof Pitch	Ventilation Openings
<10°	25,000 mm^2/m provided at each of two opposing ends
≥10° and <15°	25,000 mm^2/m provided at the eaves and 5,000 mm^2/m at high level
≥15° and <75°	7,000 mm^2/m provided at the eaves and 5,000 mm^2/m at high level plus an additional 18,000 mm^2/m at the eaves if the roof has a cathederal ceiling

Table Notes:

1. Ventilation openings are specificed as a minimum free open area per metre length of the longest horizontal dimension of the roof
2. For the purposes of this table, high level openings are openings provided at the ridge or not more than 900mm below the ridge or highest point of the roof space, measured vertically.

COREX COR-VENT®

Cor-Vent® is a passive roof ventilation device with compliance to NCC2022 ABCB Housing Provision Part 10.8.3 & Vol 1 F8D5 requirements. Designed to allow passive airflow over the fascia and under pliable membrane (sarking) or flashing to reduce the risk of moisture and condensation in the roof space. Additionally, it can be installed at a high level (e.g. ridge or apron). Cor-Vent® is made from recyclable polypropylene (PP).

Cor-Vent® 8K applied at low level or eave does not require fascia height alteration. Angle cut edge allows to maintain airflow when installed under membranes. Cor-Vent® can be temporarily screwed or bonded to battens or rafter during the installation process

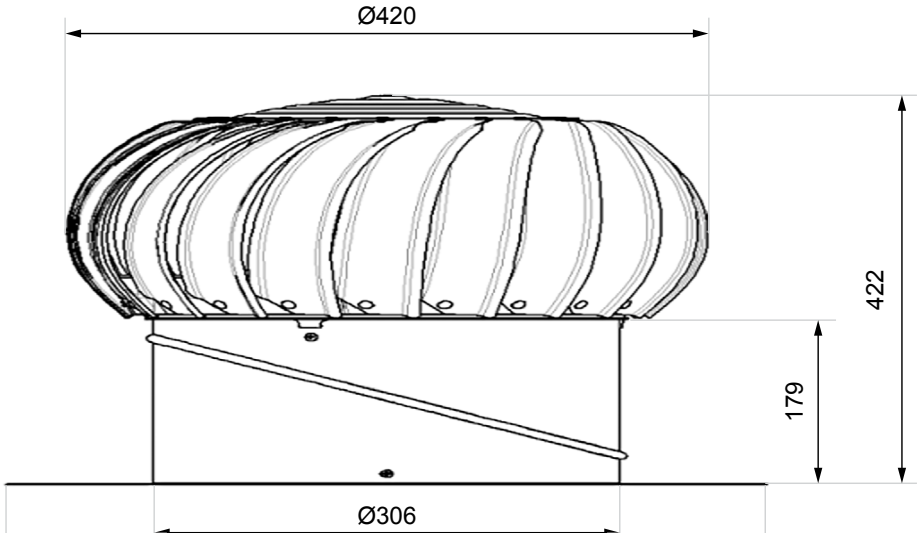
Cor-Vent® 8K BAL FR is a BAL rated fire-retardant solution which is compliant to AS 3959. It is provided with a durable coated aluminum ember mesh with less than 2mm apertures. Additional 10mm Corflute packer can be added to Cor-Vent 25K to make up overall batten height of 40mm.

Product	Application	Length (mm)	Width (mm)	Thk (mm)	Ventilation minimum free open area (mm^2)
Cor-Vent® 8K 200	Low Level Ventilation (15 to 75 degrees)	2500	200	10	8050
Cor-Vent® 8K FR BAL 200	Low Level Ventilation (15 to 75 degrees) BAL 12.5 – BAL 29	2500	200	10	8050
Cor-Vent® 5K	High Level Ventilation (15 to 75 degrees)	2500	100	6	5050
Cor-Vent® 25K 100	High and/or Low Level Ventilation (0 to 15 degrees)	2500	100	31	25000
Cor-Vent® 25K FR BAL 100	High and/or Low Level Ventilation (0 to 15 degrees)BAL 12.5- BAL 29	2500	100	31	25000

Note:

1. For more technical details refer to the manufacturer's website www.corex.com.au/product/cor-vent/

BRADFORD WINDMASTER NATURAL ROOF VENTILATOR



A wind-driven roof ventilator designed to exhaust heat & moisture from the roof space, without the use of electrical energy. It is suitable for metal and most roof colours and for residential buildings. Windmaster helps reduce the load on air conditioning by reducing the roof space temperature. It reduces the risk of moisture-related damage. Reducing the heat in summer and managing moisture in winter helps to create a better living environment.
Bradford Windmaster Natural roof Ventilator meets NCC2022 DtS solution requirements.

This product has not been tested for use in cyclonic wind regions C and D
This product is not suitable for bush fire BAL-12.5 to BAL 40 or FZ rated areas.

Product	**Application**	**Throat area mm²**
Windmaster roof Ventilator	High Level Ventilation (Metal sheet roofs)	62,500

Products	**WindMaster Roof Ventilator Requirement**
Roof Pitch	
<10°	
≥10° and <15°	1 WindMaster for every 12.5m of the longest horizontal roof length
≥15° and <75°	1 WindMaster for every 12.5m of the longest horizontal roof length
≥15° and <75° Cathedral	1 WindMaster for every 12.5m of the longest horizontal roof length

Note:

1. For more technical details refer to the manufacturer's website www.bradfordventilation.com.au/home-ventilation/roof-space/windmaster

AMPELITE SPINAWAY AND SUPERFLOW ROOF VENTILATORS

The Ampelite Spinaway and Superflow ventilators are natural wind-driven solutions, factory assembled and meet the requirements of BAL 12.5 to BAL 40 for Class 1 and 10a residential applications with the use of the Ampelair vent mesh. These ventilators efficiently expel heat and moisture from roof spaces, relying solely on natural airflow and without the need for electrical energy

This product complies with NCC 2022 Volume 1 F8D5 and ABCB Housing standard 2022 10.8.3 as a DtS solution for Condensation and Management in NCC climate zones 6,7,8

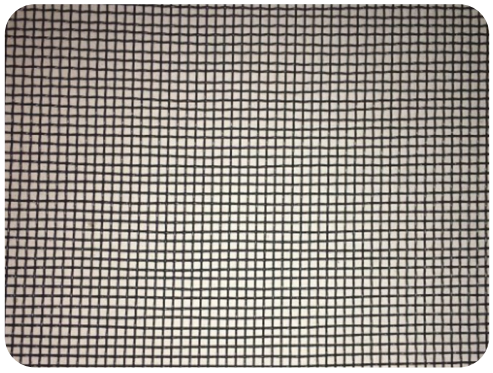
Product	Application	Throat area mm^2
Ampelite Spinaway and Superflow ventilators	High Level Ventilation (Metal sheet roofs) BAL 12.5 to BAL 40	35,800

Products	Spinway Roof Ventilator Requirement
Roof Pitch	
<10°	
≥10° and <15°	1 Spinway for every 7.1m of the longest horizontal roof length
≥15° and <75°	1 Spinway for every 7.1m of the longest horizontal roof length
≥15° and <75° Cathedral	1 Spinway for every 7.1m of the longest horizontal roof length

Note:

1. For more technical details refer to the manufacturer's website
   www.ampelite.com.au/spinaway/
   www.ampelite.com.au/superflow/

KARBEN EMBER GUARD



Karben ember guarding mesh can be used in many applications, however it is primarily used when constructing with metal claddings in bush fire zones as an ember guard.

Ember gaurds referenced in AS 3959-2018 are designed to create a barrier to restrict burning embers from gaining access into home via any small gaps that have not been addressed by other construction mean. If a building intends to rely on a mesh product to address ember gaurding of roof, AS 3959 demands the material to be non-combustible and have an aperture less than 2mm.

PAB19 and PAB20 provide installation details that utilise profile openings to meet the ventilation requirements in the NCC. They can be used in BAL or non-BAL construction. When constructing in BAL, Karben Ember Guard must be used. The application of ember guard will depend on whether roof level insulation is used and what function it will provide when pliable membranes or blanket and foil products are designed and installed. (e.g. thermal).

Karben mesh for ember protection in BAL zones is mandatory for construction. The impact on ventilation open area is considered negligible at low air flows that passive ventilation relies on to manage moisture in the roof space.
Karben ember guards are supplied with a durable paint coating to improve durability and isolation with the metal cladding and structural components. Aluminium meshes are preferred from a durability perspective.

Below is a list of scenarios when incorporating multiple roofing accessories in metal roofs.

Requirement of Bare roof in BAL zone:

1. PAB 19 or PAB 20 construction details; and
   - **a)** Karben Ember guard 1.9 thk Aluminium up to BAL 29 with compressible non-combustible filler; (or)
   - **b)** Karben Ember guard 1.9 thk Steel for BAL 40 (special order) with compressible non-combustible filler

Requirements of Metal Roof with roof level insulation in BAL zone:

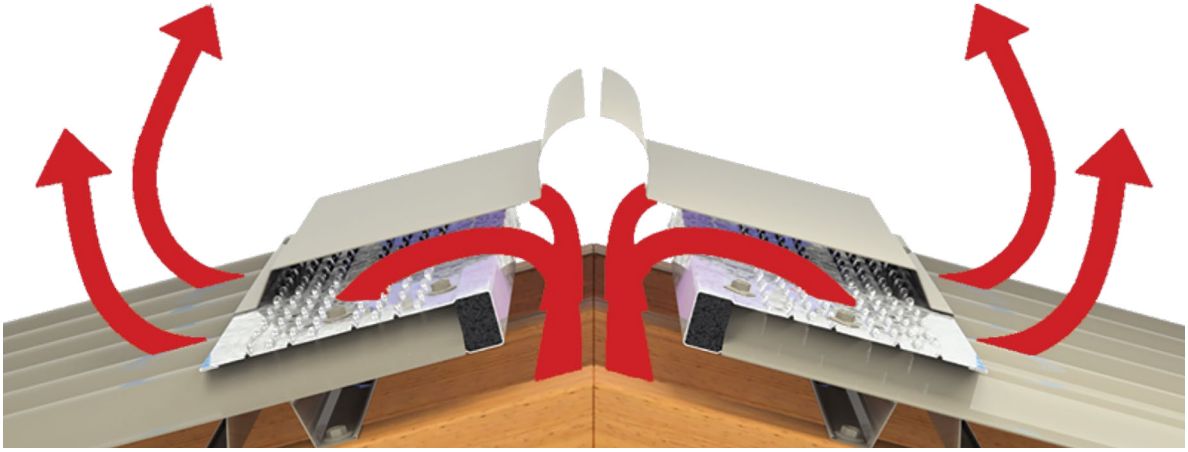
2. PAB 19 or PAB 20 with the pliable membrane of blanket and foil with flammability index < 5 (or) Reflective pliable membrane with Flammability <5; and
   - **a)** Karben Ember guard 1.9 thk Aluminium up to BAL 29 with compressible non-combustible filler; (or)
   - **b)** Karben Ember guard 1.9 thk Steel for BAL 40 with compressible non-combustible filler

Product	Width	Aperture size	Application
Karben1.9mm Aluminium	500 mm 250mm	1.9 mm x 1.9 mm	High level ventilation Low level ventilation BAL 12.5 to BAL29
Karben 1.9 mm Steel	500 mm 250mm	1.9 mm x 1.9 mm	High level Ventilation Low level Ventilation BAL 40

Note:

1. For more technical details refer to the manufacturer's website www.karben.com.au/ember-guard/

VENT-A-ROOF



VENT-A-ROOF® is a non-mechanical continuously operating, waterproof, cyclone-rated, metal roof ventilation system that provides a condensation management solution. Full roof ventilation is made possible with both ridge and hip vents. VENT-A-ROOF® steel vent components are manufactured from 0.4mm BMT aluminium/zinc/magnesium alloy coated steel.
VENT-A-ROOF® complies with DtS solution in accordance with NCC 2022 condensation management and roof ventilation requirements for metal roofs >= 10 degree pitch

Product	Application	Width (mm)	Length (mm)	Ventilation free open area (mm^2)
VENT-A-ROOF®	High level Ventilation (15 to 75 degrees) BAL 12.5 to BAL 40	127	1500	Single sided applications- 9,504 mm^2/m Dual sided applications-19,008 mm^2 /m

Note:

1. For more technical details refer to the manufacturer's website www.ventaroof.com.au

AUSTRALIAN STANDARDS

Australian Standard	Definition
AS 1562.1:2018	Design and installation of sheet roof and wall cladding - Part 1: Metal
AS 3959:2018	Construction of buildings in bushfire-prone areas
AS 4200.1:2017	Pliable building membranes and underlays Materials

DOCUMENT NOTES

This document will be updated regularly as the recommended product range evolves. Please refer to the latest document in www.lysaght.com

For more details of vent devices refer to manufacturer's website and brochures

PRODUCT DESCRIPTION

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