

# Breathe fresh air into your next building project with AWS Trickle Vent.

AWS Trickle Vent is an integrated trickle ventilation system that contributes to natural ventilation of the building enclosure without requiring any windows or doors to be opened.

Using the passive temperature perception technology of the unique physical characteristics of a unique Shape Memory Alloy (SMA), the AWS Trickle Vent responds to changes in ambient temperature, optimising the benefits of ventilation without the use of electric power, sensors or human intervention.

The AWS Trickle Vent Trickle Ventilation technology can passively manage ventilation flow dependent on ambient temperatures, optimising the benefits of ventilation without introducing excessive air at an uncomfortable temperature.

## Applications

Unlike conventional systems such as operable windows or louvres, the AWS Trickle Vent allows continual background ventilation whether a room is occupied or not, making it ideal for education projects, commercial and healthcare applications, accommodation, multi-storey houses, or anywhere that has the need for ventilation without compromising the safety of building occupants.

### Commercial & Office

As part of a total ventilation system AWS Trickle Vent can allow controlled infiltration during favorable ambient conditions, to offset heating and cooling demand in buildings.



### Residential & Accommodation

Homes are often locked up for extended periods during the day. AWS Trickle Vent is an ideal solution for residential buildings such as modern airtight medium and high-rise developments, providing ventilation when occupants are away.



### Schools & Institutions

Unlike conventional systems such as operable windows or louvres, the AWS Trickle Vent provides outdoor air without human intervention. It is safe and quiet making it ideal for education.



### Health & Aged Care

Improved ventilation has a positive impact on the health of aged care residents. AWS Trickle Vent provides good ventilation while maintaining the safety of the building's occupants.



## Natural Ventilation

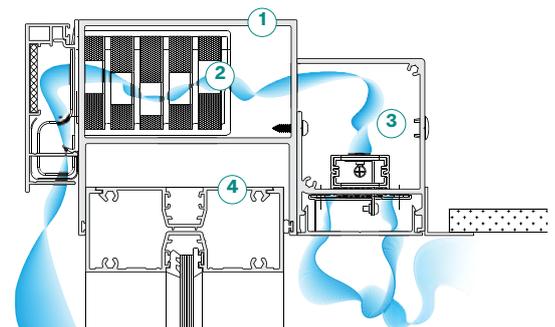
AWS Trickle Vent devices can enable a more integrated approach to a natural ventilation solution, with the window frame itself forming part of the required openable area<sup>2</sup>.

## Alternative supply air solutions

AWS Trickle Vent used in conjunction with low energy, mechanical extract ventilation can enable or contribute to alternative outdoor air ventilation strategies permitted by Australian Standards<sup>3</sup>.

## General Exhaust Make-Up Air

Make-up air for bathroom and other general exhaust applications in the past has generally relied on leakage through poorly sealed façade construction. Improved construction techniques and the energy drivers for better sealing is impacting on mechanical ventilation systems' ability to operate below the limiting pressure losses in Australia's ventilation Standards<sup>4</sup>. Make-up air drawn through alternate paths such as gaps and service penetrations will affect the cleanliness of this air and may impact on compliance with Australian Standards<sup>5</sup>. The use of AWS Trickle Vent as permanent natural ventilation openings<sup>6</sup> can reduce the amount of make-up air and unhealthy contaminants being drawn into the enclosure through poorly sealed construction joints, brick cavity vents and even power outlets.



- ① Trickle ventilation integrated into AWS proprietary sub-head design.
- ② Proprietary sound diffuser fitted with sound wafers to trap and diffuse sound without obstructing airflow.
- ③ Trickle ventilation device incorporating bimetal shape memory alloy springs to automatically open or close the vent based on external air temperature.
- ④ Compatible with a full range of AWS commercial window and door systems.

## Ventilation Volume

	Ventilation Openable Area (mm <sup>2</sup> )	AWS Trickle Vent			
		Effective Open Area (αA) mm <sup>2</sup>	Ventilation Volume (Q) l/s		
			ΔP = 6Pa	ΔP = 12Pa	ΔP = 20Pa
Sound Box & Filter 1200	4100	1500	4.4	6.5	8.6
Sound Box & No Filter	4100	1900	5.7	8.6	11.5
Filter & No Sound Box	4100	1600	4.5	6.9	9.4
No Filter or Sound Box	4100	2000	5.8	8.7	11.6
4.off Sound Box & Filter 900	4100	1400	4.3	6.4	8.6
No filter & 4.off Sound Box 900	4100	1700	5.3	7.8	10.5

## Acoustic Performance

Acoustic testing has been conducted on the Elevate™ Series 400 series CentreGLAZE™ frame fixed window fitted with ventilated sub-head. From our testing we can conclude that the ventilation opening drops the sound performance of the product by up to 7 Rw. The addition of the SoundOUT™ absorber improves this result by 3 Rw.

Series 400 fixed window 6.38mm Laminated Glass

Window only no ventilated sub-head	Rw 32
Window + ventilated sub-head	Rw 26
Window + ventilated sub-head + SoundOUT™ difuser	Rw 29

Series 400 fixed window 10.38mm Laminated Glass

Window only - no ventilated sub-head	Rw 34
Window + ventilated sub-head	Rw 27
Window + ventilated sub-head + SoundOUT™ difuser	Rw 30

## Standard Features

Shape Memory Alloy (SMA) Thermal Actuator	Utilising a patented shape memory alloy spring system, the AWS Trickle Vent system automatically adjusts the size of the ventilation inlet as ambient temperature changes.
Insect, rodent and ember screens	Non-combustible, removable mesh with a maximum aperture of 2mm to comply with bushfire codes.
Manual override	The system can be manually closed by occupants.
Air filter	Dust and pollen filters are fitted to the interior side of the vent to reduce up to 68% of typical airborne dust. The air filter can be removed for maintenance and cleaning.

## Optional Features

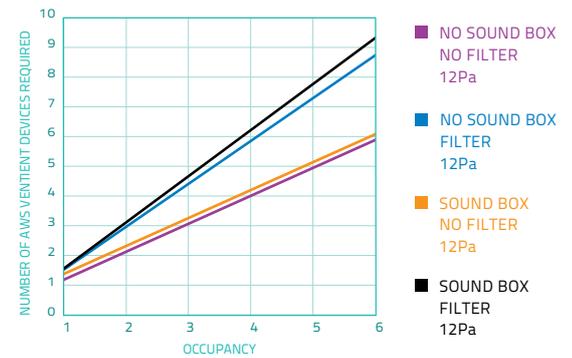
Intumescent fire barrier	Optional intumescent seals expand to fill the opening when extreme high temperatures are reached <sup>a</sup> .
Acoustic Attenuation	Optional proprietary SoundOUT™ absorber traps and absorb sound without obstructing airflow.

## Design Coordination

The AWS Trickle Vent is an integrated ventilation solution, simplifying the specification, supply and installation process. Traditional building in/installation methods are used to incorporate windows with integrated ventilation.

a. This information has been prepared by AWS as a guide for designers in a range of applications that would benefit from AWS Trickle Vent. Details are provided based on information available at the time and it remains the designer's responsibility to ensure all aspects of a design incorporating AWS Trickle Vent are completed in accordance with the relevant legislative requirements. Please contact AWS to discuss details or where further support is required. b. Designers should refer to details in Part F4 of NCC 2016 for details of limitations associated with natural ventilation applications. In many circumstances, AWS Trickle Vent will form part of a holistic natural ventilation solution. c. When applied in accordance with Clause 1.22 of AS 1668.2-2012, mechanical exhaust air ventilation together with appropriate make-up air may be provided in lieu of supply ventilation. d. Clause 3.8.4 in AS 1668.2-2012 specifies a limiting pressure loss of 12Pa between enclosures. e. Clause 2.3.1 in AS 1668.2-2012 requires outdoor air to enter a building through paths that do not reduce the quality of the air. f. Clause 3.8.1 in AS 1668.2-2012 identifies permanent natural ventilation openings as an acceptable source of exhaust replenishment. g. Fire testing data to AS 1530 is not currently available for a Deemed-to-Satisfy application in accordance with AS 1682. Designers should consider prototyping as per Clause 3.3.2 in AS/NZS 1668.1:2015 or a Performance Solution in accordance with NCC 2016 for the use of AWS Trickle Vent's intumescent fire barrier in building elements required to have a fire resistance level.

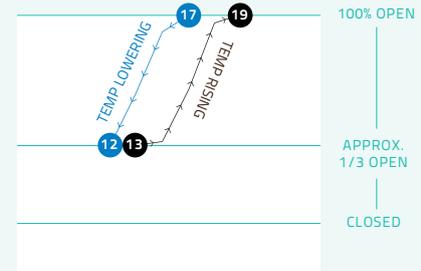
Supply air at 10l/s per person design using AWS Trickle Vent (12Pa pressure differential)



## AWS Trickle Vent Cool to Temperate Climate

Closes by 2/3 as the outdoor air passing through cools to 14°C, reducing airflow and the risk of cold drafts whilst ensuring continued background ventilation when the building is artificially heated

Temperature	Vent open
12°C	33%
20°C	100%



## AWS Trickle Vent Tropical Climate

Closes fully as the outdoor air temperature passing through the device rises to 26°C, thus reducing the risk of warm humid air entering the building and causing condensation when the interior is likely to be artificially conditioned.

Temperature	Vent open
26°C	0%
20°C	100%

