

<b>0735P AIROCLE NATURAL VENTILATION AND SMOKE MANAGEMENT</b>
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**Branded worksection**

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**Worksection abstract**

This branded worksection *Template* is applicable to AIROCLE ventilators and louvres, used in air ventilation systems. AIROCLE products applicable to this worksection include heat/smoke/fire ventilators, pressure relief ventilators, ridge and slope ventilators, rotary ventilators, high capacity ventilators, round stationary ventilators, fixed and operable louvres.

**Guidance text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at [www.natspec.com.au](http://www.natspec.com.au).

**Optional text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Open* text where it is applicable to a project.

**Related material located elsewhere in NATSPEC**

Related material may be found in other worksections. See for example:

- *0421 Roofing – combined* for roof ventilators.
- *0423 Roofing – profiled sheet metal* for roof ventilators.

**Material not provided by AIROCLE**

This branded worksection *Template* includes generic material which may not be provided by the Product Partner including:

- Louvre ceiling diffusers.
- Circular diffusers.
- Curved blade diffusers.
- Perforated plate diffusers.
- Luminaire diffusers.
- Slot diffusers.
- Side wall diffusers.
- Jet diffusers.
- Thermally powered diffusers.
- Mesh grilles.
- Egg crate grilles.
- Volume control dampers.

**Documenting this and related work**

You may document this and related work as follows:

Show the location, type and size of ventilators and louvres on the drawings. Make sure the terminology used on the drawings agrees with the terminology in this worksection.

This worksection covers a variety of ventilator and or louvre types. In order to avoid ambiguity, either delete types not required for the project or make sure that symbols and legends on the drawings indicate clearly the required type.

Consider installation details for ventilators and/or louvres.

- Coordinate external louvres with *0451 Windows and glazed doors*, particularly clause **VENTILATING LOUVRE ASSEMBLIES, Fixed metal louvres**.
- This worksection contains text, including *Optional* text, which may be adapted for use in design and construct projects. See NATSPEC TECHreport TR 03 for information on specifying Design and Construct for mechanical services.

**Specifying ESD**

The following may be specified by retaining default text:

- Durable components, particularly for corrosion resistance.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

## 1 GENERAL

For over 90 years, AIROCLE has provided the building industry with effective and environmentally friendly solutions for natural building ventilation and smoke hazard management. AIROCLE has substantial expertise, experience and an absolute dedication to satisfying ventilation and smoke hazard management needs and expectations to deliver a comprehensive range of natural air, smoke, heat and pressure relief ventilation, and smoke hazard management. The result is some of the most reliable, effective and energy efficient solutions available for commercial, industrial and community projects.

### 1.1 RESPONSIBILITIES

#### General

Requirement: Provide AIROCLE ventilators/louvres, as documented.

*Documented* is defined in *0171 General requirements* as meaning contained in the contract documents.

This worksection does not include ventilation or louvre schedules as it assumes the type, location and sizes will be shown on the drawings. A schedule, if required, should be included in **SELECTIONS**. If the contractor is to size ventilators and louvres, provide relevant design parameters such as face velocity, neck velocity and air changes per hour.

#### DESIGN

The *Optional* text in this clause may be used when the contractor is to design and select the air distribution equipment. Use the *0701 Mechanical systems* worksection to describe design parameters for mechanical systems, as a whole, including the basis for calculating the air quantities and definition of areas to be served by the documented types of air distribution equipment.

#### General

Selection parameters included in the **SELECTIONS** schedules should not be repeated here. The schedules' *Guidance text* includes suggestions for modification to suit design and construct projects.

Requirement: Design ventilators and/or louvres, as documented.

#### Ventilator and louvre equipment design, application and calculations

Standards: Conform to the recommendations of one or more of the following:

- AIRAH Design Application Manuals.
- ASHRAE Handbooks.
- CIBSE Guides.
- Methods of calculation: Manual or software that employs the data and methods in the applicable standard.

#### Natural ventilation equipment types

Requirement: Provide air distribution equipment types selected from the following:

- Supply air: [complete/delete]
- Return air: [complete/delete]
- Outside air: [complete/delete]

### 1.2 COMPANY CONTACTS

#### AIROCLE technical contacts

Website: [www.airocle.com.au](http://www.airocle.com.au).

### 1.3 CROSS REFERENCES

#### General

Requirement: Conform to the following:

- *0171 General requirements*.

The *0171 General requirements* worksection contains umbrella requirements for all building and services worksections.

- *0701 Mechanical systems*.

*0701 Mechanical systems* deals with matters common to more than one Mechanical worksection.

List the worksections cross referenced by this worksection. *0171 General requirements* references the *018 Common requirements* subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

## 1.4 STANDARDS

### General

Requirement: To AS 4254.1 and AS 4254.2.

Indoor air contaminant control: To AS 1668.2 Supplement 1.

## 1.5 MANUFACTURER'S DOCUMENTS

### Technical manuals

Catalogue: Visit [www.airocle.com.au](http://www.airocle.com.au) to request the *AIROCLE Product catalogue*.

## 1.6 SUBMISSIONS

### Operation and maintenance manuals

Requirement: Submit the manufacturer's published instructions for operation, care and maintenance.

### Products and materials

Requirement: Submit documentation from the manufacturer verifying conformance with the following:

- Smoke control systems: To AS 1668.3.
- Smoke/release vents: To AS 2427.
- Smoke/heat venting systems: To AS 2665.

All AIROCLE products conform to AS 2665.

### Tests

The *0171 General requirements* worksection covers tests in **Definitions** and calls for an inspection and testing plan under **SUBMISSIONS, Tests**.

Type tests: Submit reports verifying conformance to AS/NZS 4740, excluding Appendix E, for the following:

- Acoustic performance: To ISO 5135 or ANSI/ASHRAE 70.
- Rain resistance.
- Discharge co-efficient.
- Wind loading.

AIROCLE states that their 5 Series ventilators have not been tested for flow rate performance to AS/NZS 4740 Appendix E, as no suitable or agreed method has been established.

All AIROCLE products are tested for discharge coefficient performance rating by the CSIRO, a NATA accredited testing laboratory.

Type tests are carried out before the contract. However, submission of evidence of a successful type test may be called up here for requirements specified in **SELECTIONS** or **PRODUCTS** when there are no **SELECTIONS**.

Testing method: Submit documentation from the manufacturer verifying the testing methods conforms to the following:

- Resistance to leakage during rain: To AS 2428.1.
- Operation under wind loading: To AS 2428.2.
- Operation characteristic: To AS 2428.3.
- Flame contact effect: To AS 2428.4.
- Discharge coefficient: To AS 2428.5.
- Operation under snow loading: To AS 2428.6.

### Warranties

General: Submit warranties as documented.

## 2 PRODUCTS

In selecting ventilators and/or louvres, consider the following:

- Symbol used on the drawings.
- Outlet type.
- Dimensions.
- Designation.
- Material. If aluminium, specify alloy designation.

- Maximum pressure drop.

## 2.1 GENERAL

### Product substitution

Other products: Conform to PRODUCTS, **GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* worksection clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

### Marking

Identification: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.
- Material composition and characteristics such as volatility, flash point, light fastness, colour and pattern.

Edit the list to suit the project or delete if not required.

## 2.2 MANUFACTURE

### General

AIROCLE ventilators and/or louvres: Conform to the following:

- Free from distortion, bends, surface defects, irregular joints, exposed fastenings and operation vibration.
- With flange corners neatly mitred, butted and buffed, with no joint gaps.

Material: Steel or aluminium.

This allows the contractor to select the material. Edit if only one is acceptable.

Finish:

- Exposed surfaces: Mill finish, painted or powder coated to the nominated colour.

Include the colour, if appropriate. Colours should be coordinated with architectural requirements.

Alternatively anodising may be possible but is normally only available on special order and may not be available at all from some manufacturers. If specifying, include coating thickness class and colour.

Clear (including tinted) and metallic powder coat may be available to give a similar effect.

Fixings: Supplied with ventilators and or louvres.

## 2.3 WEATHERPROOF LOUVRES

Coordinate with *0451 Windows and glazed doors* particularly clause **METAL LOUVRE**.

Detail the type of louvre, e.g. nominal 50 mm or 100 mm blade size, spacing of blades, drainable, etc.

### Fixed louvres

Requirement: Provide AIROCLE A Series, B Series, C Series, D Series, E Series and G Series, as documented.

The C Series is also available as adjustable louvres.

Construction: Provide louvre blades, mounted in a metal surround frame or subframe.

### Fixed acoustic louvres

Requirement: Provide AIROCLE G Series fixed acoustic louvres, as documented.

Construction: Provide fixed louvre blades incorporating acoustic material, mounted in a metal surround frame or subframe.

Louvre depth: As documented.

AIROCLE G Series louvres are available in 100, 200, 300, 400 and 600 mm deep configurations to suit project requirements. Consult AIROCLE for performance details.

If specifying AIROCLE acoustic louvres, delete respective text from the *0745 Attenuators and acoustic louvres* worksection.

**Adjustable louvres**

Requirement: Provide AIROCLE C Series and F Series, as documented.

The C Series is also available as fixed louvres.

Construction: Provide louvre blades, clipped into blade holders pivoted to stiles or coupling mullions, linked together in banks, each bank operated by an operating handle incorporating a latching device or by a locking bar.

Framed adjustable louvres: Provide louvre blades, beaded into steel blade surround frames (sash), pivoted to pressed steel main frames, linked together in banks, where each bank is controlled by a proprietary sash operator.

**Construction**

Requirement: Provide louvre blades, mounted in a metal surround frame or subframe, and able to withstand the permissible-stress-design wind pressure for that location, without failure or permanent distortion of members, and without blade flutter.

Provide wind action details to AS/NZS 1170.2 in the **Structural design actions schedule** in the *0171 General requirements* worksection.

Configuration: Horizontal or vertical louvre blades, as documented.

Horizontal blades are usually more resistant to the entry of rain.

Louvre blades: Set at nominal 45° angle, incorporating at least one hooked edge to prevent ingress of water under all operating conditions. Brace and stiffen to prevent rattling or movement.

Check weather resistance with the manufacturer. Intake louvres in high wind areas may require special attention.

Frame: Flanged or channel to suit the installation profile.

Blade and frame materials: As documented.

Materials may be documented in the **Weatherproof louvre schedule**. AIROCLE can supply louvres in a variety of materials including Zinalume®, Colorbond®, Galvabond®, aluminium, stainless steel and copper.

Pressure drop: ≤ 15 Pa at the documented air flow.

This is a typical value which can be varied to suit the selected louvre and project. Show the louvre size on the drawings.

Pressure drop performance data can be provided by AIROCLE upon request.

Screens: Provide one of the following:

- Screens behind louvres to prevent the entry of vermin, birds, rodents and wind-blown leaves and papers.

Screen material: As documented.

Materials may be documented in the **Weatherproof louvre schedule**. AIROCLE can supply screens in a variety of materials including galvanized, galvanized and powder coated, stainless steel, plastic, perforated metal and expanded metal.

Mesh: If documented, provide behind the louvres.

Mesh and materials for insects and bushfire screens may be documented in the **Weatherproof louvre grilles schedule**. AIROCLE can supply mesh in a variety of materials including aluminium, fibreglass, stainless steel and perforated metal.

**Expansion joints**

Requirement: Provide for expansion and contraction in continuous sections (e.g. continuous louvres, interlocking mullions), at spacing not exceeding those recommended by the manufacturer, or 6 m, whichever is the lesser.

**2.4 VENTILATORS****General**

Requirement: Provide AIROCLE ventilators, as documented.

Design for wind actions: Install to withstand the permissible-stress-design wind pressure.

Provide wind action details to AS/NZS 1170.2 in the **Structural design actions schedule** in the *0171 General requirements* worksection.

Isolation: Provide neoprene isolation between dissimilar metals.

**2.5 RIDGE AND SLOPE VENTILATORS****General**

Requirement: Provide AIROCLE 1 Series or 2 Series continuous ridge ventilators, as documented.

Provide details in the **Ventilator schedule**.

Model number: As documented.

Show AIROCLE model number on the drawings or in the **Ventilator schedule**. AIROCLE ridge and slope ventilators are available in a range of throat widths and damper operations, see **WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES**.

### Construction

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

Wind jump diaphragms: Provide to AIROCLE's recommendations.

## 2.6 HIGH CAPACITY CONTINUOUS RIDGE VENTILATORS

### General

Requirement: Provide AIROCLE 3 Series high capacity, continuous ridge ventilators, as documented.

Provide details in the **Ventilator schedule**.

Model number: As documented.

Show AIROCLE's model number on the drawings or in the **Ventilator schedule**. AIROCLE high capacity continuous ridge ventilators are available in a range of throat widths and damper operations, see **WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES**.

### Construction

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

Wind jump diaphragms: Provide to AIROCLE's recommendations.

## 2.7 HEAT EXHAUST VENTILATORS

### General

Requirement: Provide AIROCLE 4 Series heat exhaust ventilators, as documented.

Provide details in the **Ventilator schedule**.

Model number: As documented.

Show AIROCLE's model number on the drawings or in the **Ventilator schedule**. AIROCLE heat exhaust ventilators are available in a range of throat widths and damper operations, see **WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES**.

### Construction

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

## 2.8 ROTARY VENTILATORS

### General

Requirement: Provide AIROCLE 5 Series wind driven rotary ventilators, as documented.

Fire tested ventilators: Provide AIROCLE 5 Series fire tested rotary ventilators, as documented and conforming to AS/NZS 1668.1 clause 8.8.1.

Model number: As documented.

Show AIROCLE's model number on the drawings. AIROCLE 5 Series are available in a range of throat sizes.

### Construction

Material and finish: As documented.

### Booster fan

Fan: If documented, provide an AIROCLE supplied plate basket type axial flow fan in the base of the ventilator.

Allow for fire rated fans where booster fans are to be included in the smoke control system.

Diameter: To AIROCLE recommendations.

Power supply:

- Less than 1 kW: Single phase.

- Over 1 kW: Three phase.

### Dampers

Requirement: [complete/delete]

AIROCLE roof ventilators do not include volume control dampers. Throat dampers for summer-winter operation can be provided. Where dampers are to be included in the fire/smoke control system, allow for dampers with spring return actuators.

## 2.9 ROUND STATIONARY VENTILATORS

See *Guidance* for **ROTARY**

**VENTILATORS, Booster fan** and **ROTARY**

**VENTILATORS, Dampers.**

### General

Requirement: Provide AIROCLE 6 Series round stationary ventilators, as documented.

Model number: As documented.

Show AIROCLE's model number on the drawings. AIROCLE 6 Series ventilators are available in a range of throat sizes and damper operations, see **WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES**.

### Construction

Material and finish: As documented.

## 2.10 ACOUSTIC VENTILATORS

### General

Requirement: Provide AIROCLE Phonic acoustic treatment, as documented.

Provide details in the **Ventilator schedule**.

Model number: As documented.

Show AIROCLE's model number on the drawings or in the **Ventilator schedule**. AIROCLE ventilators are available in a range of throat widths.

### Construction

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

## 2.11 AUTOMATIC FIRE VENTILATORS

### General

Requirement: Provide AIROCLE 7 or 8 Series automatic fire ventilators, as documented.

Provide details in the **Ventilator schedule**.

Model number: As documented.

Show AIROCLE's model number on the drawings or in the **Ventilator schedule**. AIROCLE fire ventilators are available in a range of throat widths and damper operations, see **WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES**.

### Construction

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

## 2.12 PRESSURE RELIEF VENTILATORS

### General

Requirement: Provide AIROCLE Y Series wall or roof pressure relief ventilators, as documented.

Provide details in the **Ventilator schedule**.

Operation: Normally closed under gravity but designed to open and relieve excess pressure when required, and close at a controlled speed to prevent back pressure.

AIROCLE can also supply blast relief vents to suit more extreme situation. Consult AIROCLE.

Model number: As documented.

Show AIROCLE's model number on the drawings. AIROCLE Pressure Relief ventilators are available in a range of standard sizes.

**Construction**

Material and finish: As documented.

Provide details in the **Ventilator schedule**.

**2.13 WEATHERPROOF LOUVRE AND VENTILATOR ACCESSORIES****Sensors**

Moisture sensors: Provide AIROCLE supplied moisture sensors.

Moisture sensors detect atomised moisture and can be used to open or close dampers weathertight to suit ambient conditions. Generally included in vents with manual override.

Wind sensors: Provide AIROCLE supplied wind sensors.

Wind sensors can be used to open or close dampers weathertight to suit ambient conditions, e.g. in bushfire prone areas.

Rain sensors: Provide AIROCLE supplied rain sensors.

Electronic rain sensor to detect moisture for closing louvres.

**Operable dampers**

Requirement: Provide operable dampers, as documented.

Type: Manual, electrically powered or pneumatically powered, as documented.

Electric operation: Provide AIROCLE supplied electric operators. Provide controls, as documented.

Pneumatic Operation: Provide AIROCLE supplied pneumatic operators. Provide controls, as documented.

**3 EXECUTION****3.1 WEATHERPROOF LOUVRE ASSEMBLIES**

Coordinate with the *0451 Windows and glazed doors* worksection.

**Installation**

Requirement: Conform to the installation requirements for metal window installations in the *0451 Windows and glazed doors* worksection.

Fixing: Screw fix stiles and mullions to the building structure.

Seals: Provide weather strips to heads and sills.

**Framed adjustable louvres**

Installation: Screw fix the main frame to the building structure with monel, stainless steel screws or masonry anchors, using the type recommended by AIROCLE.

**3.2 WARRANTIES****General**

Refer to the **WARRANTIES** in the *0171 General requirements* worksection.

Requirement: Provide the manufacturer's warranty as follows:

- Form: Against failure of finishes, materials and operation under normal environment and use conditions.
- In conformance with the manufacturer's data.

Warranties can be downloaded from the AIROCLE website [www.airocle.com.au](http://www.airocle.com.au)

**4 SELECTIONS**

**Schedules** are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

**4.1 WEATHERPROOF LOUVRES**

If the louvres are connected to the air conditioning or ventilation system, obtain the value required for the maximum pressure drop at 2.0 m/s face velocity from the consultant and include as a performance requirement.

**Weatherproof louvres schedule**

Property	A	B	C
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Property	A	B	C
AIROCLE Series			
Type			
Operation			
Blade pitch			
Louvre depth			
Frame material			
Blade material			
Finish			
Screen material			
Mesh material			
Accessories			

A, B, C: These designate each instance or type or location of the item scheduled. Repeat the schedule for each type. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings. Show sizes on the drawings.

AIROCLE Series: e.g. A Series, B Series, C Series, D Series, E Series and G Series.

Type: e.g. horizontal, vertical, continuous horizontal.

Operation: e.g. fixed, operable.

Blade pitch: To suit AIROCLE's louvre Series selected.

Louvre depth: To suit AIROCLE's louvre Series selected.

Frame material: e.g. Zinalume<sup>®</sup>, Colorbond<sup>®</sup>, Galvabond<sup>®</sup>, aluminium, stainless steel, copper.

Blade material: e.g. Zinalume<sup>®</sup>, Colorbond<sup>®</sup>, Galvabond<sup>®</sup>, aluminium, stainless steel, copper.

Finish: e.g. powder coat, anodised, paint, clear finish, no applied finish. Coordinate paint finishes using paint type designation from the *0671 Painting* worksection.

Bird screens: Galvanized, galvanized and powder coated, stainless steel, plastic, perforated metal and expanded metal.

AS/NZS 3666.1. clause 2.2.1 requires the provision of screens for air intake louvres to prevent ingress of contaminants, vermin, birds, rodents and windblown material.

Mesh material: For insect or bushfire screens, e.g. aluminium, fibreglass, stainless steel and perforated metal or Not required. BCA 3.7.4 and AS 3959 calls for aluminium, corrosion resistant steel or bronze mesh with a maximum aperture size of 1.8 mm to areas of medium bush fire attack category and excludes aluminium mesh in areas of high category. Fibreglass mesh is excluded in all bush fire prone areas.

Accessories:

- Sensors: e.g. moisture, wind or rain.
- Operable dampers: Manually, electrically or pneumatically operated.

## 4.2 VENTILATORS

### Ventilator schedule

Property	A	B	C
AIROCLE Series			
Type			
Material			
Finish			
Screen material			
Mesh material			
Damper operation			

Property	A	B	C
Ridgelite			
Cyclone region			
Accessories			
Operation			

A, B, C: These designate each instance or type or location of the item scheduled. Repeat the schedule for each type. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings. Show sizes on the drawings.

AIROCLE Series: e.g. 1 Series, 2 Series, 3 Series, 4 Series, 5 Series, 6 Series, 7 Series, 8 Series, Y Series and Z Series.

Material: To suit AIROCLE's ventilator Series, e.g. Zinalume<sup>®</sup>, Colorbond<sup>®</sup>, Galvabond<sup>®</sup>, aluminium and stainless steel.

Finish: To suit AIROCLE's ventilator Series, e.g. powder coat, anodised, paint, clear finish, no applied finish. Coordinate paint finishes using paint type designation from the *0671 Painting* worksection.

Bird screens: e.g. galvanized, galvanized and powder coated, stainless steel, plastic, perforated metal and expanded metal.

AS/NZS 3666.1 clause 2.2.1 requires the provision of screens for air intake louvres to prevent ingress of contaminants, vermin, birds, rodents and windblown material.

Mesh material: For insect or bushfire screens, e.g. aluminium, fibreglass, stainless steel and perforated metal or Not required. BCA 3.7.4 and AS 3959 calls for aluminium, corrosion resistant steel or bronze mesh with a maximum aperture size of 1.8 mm to areas of medium bush fire attack category and excludes aluminium mesh in areas of high category. Fibreglass mesh is excluded in all bush fire prone areas.

Dampers: To suit AIROCLE's ventilator Series.

Ridgelite: e.g. Required or Not required.

Cyclone region: Region, A, B, C or D as defined in AS/NZS 1170.2.

Accessories: e.g. moisture, wind or rain sensor.

Operation: e.g. fixed, electric, pneumatic.

#### REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1668		The use of ventilation and air conditioning in buildings
AS/NZS 1668.1	2015	Fire and smoke control in multi-compartment buildings
AS 1668.2	2012	Mechanical ventilation in buildings
AS 2427	2004	Smoke/heat release vents
AS 2428		Methods of testing smoke/heat release vents
AS 2428.1	2004	Determination of resistance to leakage during rain
AS 2428.2	2004	Determination of ability to operate under wind loading
AS 2428.3	2004	Determination of operating characteristics
AS 2428.4	2004	Method 4: Determination of the effect of flame contact
AS 2428.5	2004	Determination of discharge coefficient and effective aerodynamic area
AS 2428.6	2004	Determination of ability to operate under snow loading
AS 2665	2001	Smoke/heat venting systems- Design, installation and commissioning
AS 4254		Ductwork for air-handling systems in buildings
AS 4254.1	2012	Flexible duct
AS 4254.2	2012	Rigid duct
AS/NZS 4740	2000	Natural ventilators – Classification and performance
ANSI/ASHRAE 70	2011	Method of testing the performance of air outlets and inlets
ISO 5135	1997	Acoustics - Determination of sound power levels of noise from air-terminal devices, air-terminal units, dampers and valves by measurement in a reverberation room

The following documents are mentioned only in the **Guidance text**:

AS/NZS 1170		Structural design actions
AS/NZS 1170.2	2011	Wind actions
AS/NZS 3666		Air-handling and water systems of buildings - Microbial control
AS/NZS 3666.1	2011	Design, installation and commissioning
AS 3959	2009	Construction of buildings in bushfire prone areas
BCA 3.7.4	2016	Acceptable construction – Fire safety – Bushfire areas
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2018	Specifying ESD
NATSPEC TR 03	2018	Specifying Design and Construct for Mechanical services