

0456P BREEZWAY LOUVRE WINDOWS

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to BREEZWAY Altair louvre window systems consisting of proprietary products, supplied as complete systems or components fabricated and assembled by specialist firms to their standard designs. Components include glass, metal or timber louvre blades, screens, security options and hardware, as well as installation accessories such as fasteners, flashings, sealants, joint sealing and weatherstripping, necessary for the satisfactory functioning of the whole system.

Electrical switches and wiring are excluded from this worksection.

How to use this worksection

Customise this worksection *Template* for each project. See A guide to NATSPEC worksections (www.natspec.com.au) for information on *Template* structure, word styles, and completing a worksection.

Related material located elsewhere in NATSPEC

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

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

- *0432 Curtain walls*, if the project contains windows and window-and-spandrel assemblies in addition to louvred windows.
- *0451 Windows and glazed doors*, if the project contains windows other than louvre windows.
- *0461 Glazing for types of glass*.
- *0462 Structural silicone glazing*, for adhesive fixed glazing.
- *0463 Glass blockwork*, if the project contains glass blockwork in addition to louvred windows.
- *0524 Partitions – glazed* for glazed internal partitions.
- *0671 Painting*.
- *0673 Powder coatings*.

Related branded worksections include:

- *0451p ALSPEC aluminium windows and doors*, for integrated framing systems.

Material not provided by BREEZWAY

This branded worksection *Template* includes generic material which may not be provided by BREEZWAY, including:

- Insect screens. The opening angle of Altair louvres can be restricted to prevent interference between the clips and screens in narrow frames. Breezway does not supply insect screens. Easyscreen and Innoscreen frames are compatible with insect screens.
- Ember mesh screens: BREEZWAY do not supply stainless steel ember mesh screens. These may need to be specified for bushfire protection to achieve tested BAL ratings.
- Ventilating louvre assemblies.
- Security window grilles. BREEZWAY supplies security bars but not security window grilles, however, Easyscreen and Innoscreen frames are both compatible with security screens from most of the major suppliers.

Documenting this and related work

You may document this and related work as follows:

- Schedule louvre windows to your office documentation policy.
- In bushfire-prone areas, document bushfire protection requirements to AS 3959 (2018) and the NCC. If documenting bushfire shutters, see AS 3959 (2018) clause 3.7 and *0457 External screens*. See NATSPEC TECHnote DES 018 on bushfire protection.
- Coordinate ventilating louvre assemblies with the mechanical consultant and requirements of the mechanical system, if any.
- See NATSPEC TECHnote PRO 006 for glass types used in buildings.
- Electrical and BMS interface: Document in *0902 Electrical design and install*.
- For information on the Window Energy Rating Scheme (WERS), see www.agwa.com.au.

- For information on the Australian Glass and Window Association (AGWA) Accreditation Program, see Accreditation Schemes (agwa.com.au).

The *Normal* style text of this worksection may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

Search acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service, for notes on the following:

- Daylighting of buildings.
- Guarantees and warranties.
- Revisiting energy efficiency in commercial buildings.
- Site planning and design for bushfire.

Specifying ESD

The following may be specified by retaining default text:

- Louvre assemblies for natural ventilation.
- Window seals to minimise air leakage when louvres are shut. Altair weatherstrips are required between the top louvre blade and head weatherstrip insert, and between the bottom louvre blade and sill weatherstrip insert, for both water penetration resistance and air filtration minimisation.

The following may be specified by using included options:

- Thermal performance to reduce heating/cooling load by specifying the required Total system U-Value, Total system SHGC, frame material (e.g. metal has higher conductivity than timber).
- Glass and frame selection with an acceptable visible transmittance for natural lighting.
- High performance glass, e.g. Low-E.

The following may be specified by including additional text:

- Re-use of salvaged louvres.
- Recycled material content, e.g. Aluminium frames.

Refer to NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

Breezway is the leading Australian manufacturer of high performance, energy rated, Altair Louvre Windows. Fully compliant with AS 2047 (2014), Altair Louvres are designed to open twice as wide as other windows to provide maximum light and ventilation into sustainable buildings. Altair Louvres are cyclone rated, offering automation with the award winning Powerlouvre System. Extra strength and safety can be provided to windows using the Stronghold System. Double glazing is also available using the IGLU System.

1.1 RESPONSIBILITIES

General

Requirement: Provide Breezway Altair louvre window systems, as documented.

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

1.2 COMPANY CONTACTS

Breezway Pty Ltd technical contacts

Website: www.breezway.com.au

1.3 CROSS REFERENCES

General

Requirement: Conform to the following:

- 0171 *General requirements*.

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

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

Selection and installation: To AS 2047 (2014).

AS 2047 (2014) does not cover fixed louvres.

Acoustic performance of windows and doors: To AS 5218 (2018).

Construction of buildings in bushfire prone areas: To AS 3959 (2018).

Building classification: [complete/delete]

To use AS 2047 (2014), the building class needs to be nominated as follows:

- Housing: NCC Class 1 and 10.
- Residential: NCC Class 2, 3 and 4.
- Commercial: NCC Class 5, 6, 7, 8 and 9.

Glazing

Glass type and thickness: To AS 1288 (2021), if no glass type or thickness is nominated.

For glass type and thickness refer to AS 1288 (2021) Table 4.1 and to AS/NZS 4667 (2000).

Glass thickness may be governed by human safety and other requirements – see AS 1288 (2021) Section 5. Maximum spans for various thicknesses of glass types subject to wind loading are shown in the figures of AS 1288 (2021) Section 4.

Nominate a thickness if:

- The glass is to be thicker than required by AS 1288 (2021) or applicable regulations.
- There are unusual conditions requiring detailed calculations for which the designer should be responsible.

In other cases, the determination of thickness is usually within the competence of the glazing contractor.

Where thickness is determined by loading from wind actions, the design wind pressure needs to be known in order to interpret the figures and tables of glass sizes and thicknesses in AS 1288 (2021).

See AS/NZS 1170.2 (2021) or AS 4055 (2021) as appropriate for design wind pressure.

Materials and installation: To AS 1288 (2021).

AS 1288 (2021) clause 5.12 requires louvres to be Grade A toughened safety glass for louvre lengths < 1000 mm.

Quality requirements for cut-to-size and processed glass: To AS/NZS 4667 (2000).

The standard specifies requirements for the following:

- Cut sizes of flat, clear ordinary annealed and tinted heat-absorbing glass with glossy, apparently plane and smooth surfaces, which are used for general and architectural glazing or similar.
- Cut sizes of flat, clear ordinary annealed and tinted heat-absorbing processing glass used for Grade A safety requirements.
- Cut sizes of ordinary annealed, patterned and wired glass used in decorative and general glazing applications.
- Cut sizes of wired glass used for Grade B safety and general glazing applications.
- Processed toughened glass. Laminated glass is not compatible with Altair louvre windows.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Design manual: www.breezway.com.au

Product selection guide: www.breezway.com.au/product-selection-guide

CAD drawings and BIM models: www.breezway.com.au/technical/breezway-downloads/

1.6 INTERPRETATION

Abbreviations

General: For the purposes of this worksection, the following abbreviations apply:

- AGWA: Australian Glass and Window Association (formerly Australian Window Association (AWA)).
- WERS: Window Energy Rating Scheme.

Edit the **Abbreviations** subclause to suit the project or delete if not required. List alphabetically.

Definitions

General: For the purposes of this worksection, the definitions given in AS/NZS 4668 (2000) and the following apply:

- Louvres - horizontal: Louvres that span horizontally between frame stiles, mullions or vertical supports.
- Total system SHGC: Solar heat gain coefficient as defined by the NCC and tested in conformance with NFRC 200 (2023).
- Total system U-Value: Thermal transmittance as defined by the NCC and tested in conformance with NFRC 100 (2023).

Edit the **Definitions** subclause to suit the project or delete if not required. List alphabetically.

1.7 SUBMISSIONS

Certification

Conformance: Submit evidence that the louvre windows conform to AS 2047 (2014).

See AS 2047 (2014) clause 8.3.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

Products and materials

Type tests: Submit results, as follows:

Breezway products have been tested in NATA certified testing facilities, including tests to AS 2047 (2014) for cyclonic wind up to 8.8 kPa ultimate limit state wind pressure and up to 620 Pa water penetration resistance, and tests to AS 5203 (2016) for fall prevention.

- Acoustic performance.
- Protection of openable windows.
- Bushfire protection rating.

Edit as required.

Type tests are carried out off site. Test results for acoustic performance and bushfire protection rating can be obtained from BREEZWAY.

Evidence of delivery: Submit delivery docket as evidence of delivery of [complete/delete]

If evidence of delivery to site is required for particular products, consider including this *Optional* style text by changing to *Normal* style.

Samples

General: Submit samples of louvre window system components as follows:

- Manufacturer's standard hardware and accessories, including louvre holders and operators, locks, latches, handles, catches, anchor brackets and attachments, masonry anchors and weatherseals (pile or extruded).
- Colour samples of prefinished production materials, showing the limits of the range of variation in the documented colour.
- Frame member profiles and louvre materials.
- Frame member joining techniques.

Glazing: Submit samples of glazing materials, each at least 200 x 200 mm, showing the visual properties and range of variation, if any, for each of the following:

- Tinted or coloured glass.
- Patterned or obscured glass or glazing plastics.

Labelling: Label each sample with the series code reference and date of manufacture.

Edit as required.

Shop drawings

General: Submit shop drawings to a scale that best describes the detail, showing the following:

- Frame member profiles.
- Hardware, fittings and accessories including fixing details.

Breezway provides standard type proprietary hardware. Altair louvres cannot be fitted with non-standard locks. Document hardware in **SELECTIONS**.

- Junctions and trim to adjoining surfaces.
- Layout (sectional plan and elevation) of the window assembly.

- Methods of assembly.
- Methods of installation including fixing, joint sealing and flashing.
- Provision for vertical and horizontal expansion.

Subcontractors

General: Submit names and contact details of proposed manufacturers and installers.

Evidence of experience: [complete/delete]

Delete if manufacturer/installer details are not required.

Warranties

General: Submit warranties, as documented.

Describe the requirements of warranties in PRODUCTS or EXECUTION, as appropriate, and list the submissions required here.

1.8 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Openings prepared to receive louvre windows.
- Fabricated louvre window assemblies at the factory ready for delivery to the site.
- Fabricated louvre window assemblies delivered to the site, before installation.
- Commencement of louvre window installation.

Amend to suit the project, adding critical stage inspections required.

Hold points, if required, should be inserted here.

2 PRODUCTS

2.1 GENERAL

Product substitution

Other products: Conform to **SUBSTITUTIONS** in *0171 General requirements*.

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

Storage and handling

Storage: Store in a clean, dry area unaffected by weather, to the manufacturer's recommendations. Protect from building materials and loose debris such as wet plaster, mortar, paint and welding splatter.

Acoustic performance

Louvre windows: Rating to AS/NZS ISO 717.1 (2004), as documented.

Document the required rating in the **Louvre window performance schedule**.

Breezway products have been tested to AS 1191 (2002) and AS 5218 (2018).

Protection of openable windows

Fall prevention: To BCA (2022) D3D29 and BCA (2022) H5D3.

Testing: To AS 5203 (2016).

Windows supplied as complete sets with security grilles and tested to AS 5041 (2003) are not required to be tested to AS 5203 (2016).

Bushfire

Construction of buildings in bushfire prone areas: To AS 3959 (2018).

Testing: To AS 1530.8.1 (2018).

Marking

Louvre window assemblies: To AS 2047 (2014) Section 8.

Louvre window assemblies for housing must be labelled to AS 2047 (2014) clause 8.2. Timber louvre window assemblies for housing and louvre window assemblies other than for housing may conform to AS 2047 (2014) clause 8.2 or be provided with a certificate to AS 2047 (2014) clause 8.3.

Product identification

General: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

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

2.2 ALTAIR LOUVRE WINDOW SYSTEMS

Altair louvre window systems have been designed to be compatible with most timber and aluminium windows so it will match neatly with various other brand windows and doors in the building.

Easyscreen louvre system

Description: Aluminium framing system designed for use with Altair louvres with external screening.

Optional sub-framing and fixed lite bays available.

Compatible with BREEZWAY's Powerlouvre and Stronghold options, handles, keylocks and security bars.

Frame depth: 131 mm.

Screen position: Outside.

Innoscreen louvre system

Description: Aluminium framing system designed for use with Altair louvres with internal screening.

Optional sub-framing and fixed lite bays available.

Compatible with Breezway's Powerlouvre window and Stronghold options. Provides safe screen installation and cleaning for multi-level buildings.

Frame depth: 131 mm.

Screen position: Inside.

Application: Sporting halls and aged care facilities.

SL2 louvre system

Description: Aluminium framing system designed for use with Altair louvres in narrow framing applications.

Suits narrow frame applications or installation into masonry construction. Screens and/or Powerlouvre options are not available. Locate above or next to doors on internal walls to help ventilate the building.

Frame depth: 52 mm.

Dualair™ secondary glazed louvre window system

Description: Secondary glazed component system for commercial applications.

This system combines the performance benefits of secondary glazing with the ventilation benefits of Altair louvre windows.

For use with Alspec 150 mm commercial framing systems. Dualair™ provides outstanding thermal performance with high water penetration resistance. The pressure equalising design allows for water penetration resistance performance of 600 Pa at a window size of 2658 mm (h) x 1041 mm (w). Ideal for projects with High R_w or low U-Value ratings. Compatible with the Powerlouvre window and Stronghold system.

Altair louvre gallery sets

Description: Fully integrated louvre window system or component system for use with other manufacturer's frames.

For use with frames by other manufacturers, for example ALSPEC, G. JAMES and AWS.

2.3 ALTAIR LOUVRE WINDOW OPTIONS

Altair IGLU double glazed louvre system

Description: High performance double glazed louvre system comprising 2 layers of 5 mm low E glazing and a 12 mm argon filled cavity to each louvre blade.

Can be supplied as a complete window system within the BREEZWAY Easyscreen window system or as components for fitting into other framing systems.

This system provides frameless double glazed louvre units with superior acoustic and energy performance.

Comes in 4 standard blade spans and is compatible with the Powerlouvre system.

Blade retention system: Blades are retained in IGLU clips utilising the Stronghold system. Blades are mechanically retained within the clip using an Acetal pin.

Powerlouvre

Description: Automated operation control system for use with Altair louvre systems with concealed motor.

Motor and gearbox are concealed in the louvre head section, for use with Easyscreen and Innoscreen systems, or Altair component system. Suitable for out-of-reach locations or floor-to-ceiling feature windows. Control is possible via wall switches, remote control systems or integration into building management systems.

Electrical switches and wiring are not normally provided by Breezway, and should be included as work by the electrical subcontractor in 0902 *Electrical design and install*.

Stronghold

Description: Mechanical restraint system tested to AS 5203 (2016) and the requirements of AS/NZS 1170.1 (2002), for use within the Altair louvre system.

Designed for increased strength and safety for louvre window systems and compliant with fall prevention standards.

Blade retention system: Blades are retained in Stronghold clips by an acetal pin that passes through the clips, bearing and blade to mechanically retain the blade within the clip. Once installed, the pins cannot be removed without tools. Pins are visible on the inside/underside of the clips.

Blades can be toughened heat soaked glass or aluminium: 152 mm or 102 mm high.

Available as an option for use with the Easyscreen, Innoscreen and SL2 window systems or for installation into other manufacturer's framing systems.

2.4 VENTILATING LOUVRE ASSEMBLIES

This clause refers to louvre assemblies used as part of the mechanical ventilation system. Coordinate with the mechanical consultant. Delete if documented as part of the mechanical services or if not required.

Ventilating louvre assemblies range from panels for insertion into window and door frames to major assemblies for air control and screening of plant rooms, substations, and mechanical air intakes and exhausts.

General

Requirement: Louvre blades mounted in a frame or subframe, able to withstand the ultimate design wind pressures for that location, without failure or permanent distortion of members, and without blade flutter.

Adjustable louvres

Requirement: 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

Requirement: Louvre blades beaded into steel blade surround frames (sash), pivoted to pressed steel main frames, linked together in banks, each bank controlled by a proprietary sash operator.

These are proprietary systems for industrial, rural and some commercial applications. The blade frame allows for large louvre sizes.

Screens

Requirement: Metallic-coated steel wire, stainless steel or PVC mesh screens behind louvres to prevent the entry of vermin, birds, rodents, and wind-blown leaves and papers.

AS/NZS 3666.1 (2011) clause 2.2.1 requires the prevention of entry of vermin, birds, rodents, and wind-blown matter such as leaves and paper.

2.5 BLADES

Material

Type: [complete/delete]

Select from Glass, Aluminium or Timber blades available from Breezway. If documented in SELECTIONS, delete this text.

Glass type: [complete/delete]

Select from Annealed or Toughened glass blades available from Breezway. Toughened glass blades are available in clear, clear low e, grey, green, satina and satinlite to match other windows. Consult Breezway for the availability of additional glass types and tints. If more than one glass type is used, document in SELECTIONS.

Safety glass

Standard: To AS/NZS 2208 (1996).

AS/NZS 2208 (1996) includes toughened, laminated, wired and organic-coated glass, and safety glazing plastics. See AS 1288 (2021) Section 5 for the required grade (A or B) for each application.

Certification: Required.

- Certification provider: An organisation accredited by the Joint Accreditation System of Australia and New Zealand (JASANZ).

Marking: To AS 1288 (2021) clause 5.23.

Heat soaking

Requirement: All toughened and heat strengthened glass products.

Standard: To EN 14179-1 (2016).

Heat soaking is a process that reduces the risk of breakage during service from impurities such as nickel sulfide inclusions in the glass. The process puts the glass through a heat cycle to encourage the glass to break under test if it is at risk of inclusions. Heat soaked thermally toughened soda lime silica glass is defined in EN 14179-1 (2016) and specifies the heat soak process, along with requirements for tolerances, flatness, edgework and fragmentation.

2.6 SCREENS

Screens are usually installed to the external face of frame. Make sure the louvre assembly is located so that when fully opened the louvre blades are clear of screens and security grilles, or document an appropriate restricted opening to prevent interference between the clips and the screen.

Fixed screens

General: Fixed screens fitted to the window frames with a clipping device that allows for removal for cleaning.

Retractable screens

General: Proprietary retractable screens, comprising aluminium frames and fibreglass mesh, fitted between the guide channels incorporated in the frames, and a retraction system including tension spring, bearings, positive self-locking device and elastomeric sealing strip at sill.

Aluminium framed screens

General: Aluminium extruded or folded box frame sections with mesh fixing channel, mitred, staked and screwed at corners. If necessary to adapt to window opening gear, provide an extended frame section.

Mesh: Bead the mesh into the frame channel with a continuous resilient gasket, so that the mesh is taut and free of distortion.

Screens in bushfire-prone areas

General: Where required for bushfire protection of BREEZWAY louvres, install mesh screens externally to the BREEZWAY Easyscreen tested system to achieve the required BAL rating.

Mesh: Type 316 stainless steel mesh, 1 mm thick in 2 x 2 mm woven pattern, fixed taut into aluminium frame to AS 3959 (2018).

BREEZWAY Easyscreen system has been tested to achieve bushfire protection up to BAL 40, using third party stainless steel mesh screens fitted externally. Refer to BREEZWAY technical manuals for details.

Refer to AS 3959 (2018) for details of construction requirements associated with the BAL of the site. See NATSPEC TECHnote DES 018 on bushfire protection.

2.7 SECURITY**Security window grilles**

Requirement: Proprietary metal security grilles fixed to the building structure with tamper resistant fastenings.

Standard: To AS 5039 (2008).

AS 5039 (2008) acknowledges that the security window grilles described are not intruder proof. See the foreword to this standard. The dynamic impact, jemmy, pull, probe shear and knife shear tests scheduled for compliance in AS 5039 (2008) Table 1 are described in AS 5041 (2003).

Altair louvre security bar system

Description: Slotted extruded aluminium security jambs with horizontal aluminium bars.

Application: Fixed louvre gallery set for 152 mm blades.

Breezway offers security bar systems, security screens are supplied by others. Breezway security bars are compatible with operable louvre galleries but not with fixed galleries. In the Easyscreen Window System, the security bars have a D shaped profile. In the Altair component system for other manufacturer's frames, the security bars have either a D shaped profile or a round profile. Altair louvre gallery sets snap into Altair security jambs.

Altair louvre keylock

Description: Metal louvre keylock that locks Altair louvres in the closed position.

Low profile design, metal construction and mechanisms housed internally result in a strong, highly durable lock. The folding key design allows easy locking and unlocking even when situated right beside deep jambs or reveals.

Finish: Brushed chrome.

2.8 GLAZING MATERIALS

If louvre window assemblies are selected as complete proprietary items, delete this clause.

General

Requirement: Putty, glazing compounds, sealants, gaskets, glazing tapes, spacing strips, spacing tapes, spacers, setting blocks and compression wedges appropriate for the conditions of application and required performance.

Jointing materials

Requirement: Provide jointing and pointing materials that are compatible with each other and the contact surfaces, and non-staining to finished surfaces to manufacturer's recommendations. Do not provide bituminous materials on absorbent surfaces.

Elastomeric sealants

Sealing compounds (polyurethane, polysulfide, acrylic): To ASTM C920 (2018) or ISO 11600 (2002).

Sealing compounds (silicone): To ASTM C920 (2018) or ISO 11600 (2002).

Sealing compounds (butyl): To ASTM C1311 (2022).

Primer

Compatibility: Apply the manufacturer's recommended primer to the surfaces in contact with sealant materials.

2.9 ALUMINIUM FRAME FINISHES

Altair components are available in three different surface finishes: Anodised and standard or high performance powder coating. Powder coatings are polyester coatings from leading powder suppliers applied up to a thickness of 50 µm. Delete finish not required.

Powder coatings

Service condition category to AS 3715 (2002): [complete/delete]

AS 3715 (2002) clause 1.4 describes service condition categories for powder coated aluminium architectural applications based on the severity of the environment. Select from the following atmospheric environments:

- Category 3 – Exterior mild to moderate.
- Category 4 – Tropical.
- Category 5 – Exterior severe.

Categories 1 and 2, applicable to interior environments, are not included in this standard. Refer to the documented project atmospheric corrosivity categories in *0171 General requirements* and to *0673 Powder coatings*. See NATSPEC TECHnote DES 010 for information on atmospheric corrosivity categories.

Coating performance: [complete/delete]

Select from Standard or High performance.

Colour: [complete/delete]

Consult the manufacturer's colour charts.

Gloss level: [complete/delete]

e.g. Texture, matt, satin or gloss. Not all gloss levels are available across the colour ranges. Most powder coat colours and gloss levels from the Interpon and Dulux ranges are possible.

Anodised

Standard: To AS 1231 (2000).

Thickness:

- 25 microns generally.
- Security bars: 15 microns.

Breezway supplies anodising to 25 microns for all aluminium extrusions except the Altair security bars, which are anodised to 15 microns to achieve colour matching.

Colour: [complete/delete]

Select from the manufacturer's available colour range.

2.10 ANCILLARY COMPONENTS AND FITTINGS

Fasteners

Requirement: [complete/delete]

Comply with the louvre window manufacturer's recommendations for fastener requirements and AS 2047 (2014) (for residential and commercial buildings) or AS 4055 (2021) (for Class 1 and 10a buildings) for design wind loads.

Allow for the following to suit the fixing substrate:

- For aluminium, use aluminium or 300 series stainless steel fasteners.
- For galvanized steel, use hot-dipped galvanized steel or 300 series stainless steel fasteners.
- For stainless steel, use 300 series stainless steel fasteners.

Size and type: To suit louvre window unit size and wind loading conditions.

Extruded gaskets and seals

General: Provide seals, as documented.

Location or function: [complete/delete]

Materials: Non-cellular (solid) elastomeric seals as follows:

- Rubber products: Neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber.

BS 4255-1 (1986) provides more specific product requirements for weather resistant rubber gaskets and seals.

- Flexible polyvinyl chloride (PVC): E type compounds, colourfastness grade B.

BS 2571 (1990) provides more specific requirements for PVC E type (extruded) products.

Flashings

General: Corrosion-resistant, compatible with the other materials in the installation, and coated with a non-staining compound where necessary.

Standard: To AS/NZS 2904 (1995).

Altair weatherstrips

Description: Altair component weatherstrips.

Required for compliance with AS 2047 (2014) water penetration resistance requirements. Altair weatherstrips, complete with seals, must be used in the head and sill for glass, aluminium and timber louvres to gain the manufacturer's performance warranty. They do not require notching to accommodate the louvre gallery.

3 EXECUTION

3.1 PRE-INSTALLATION

General

Timber reveals: Prime all surfaces of timber reveals that are to be painted before fixing to aluminium frames.

3.2 LOUVRE WINDOW ASSEMBLIES

General

Requirement: Install louvre windows frames, as follows:

- Plumb, level, straight and true within building tolerances.
- Fixed or anchored to the building structure in conformance with the wind action loading requirements.
- Isolated from any building loads, including loads caused by structural deflection or shortening.
- Allow for thermal movement.

Altair louvre window systems

Requirements: Install to the manufacturer's recommendations.

Glazing

Requirement: Install the glass as follows:

- Permanently fix in place each piece of glass to withstand the normal loadings and ambient conditions at its location without distortion or damage to glass and glazing materials.
- No transfer of building movements to the glass.
- Watertight and airtight for external glass.

Temporary marking: Use a method that does not damage the glass. Remove marking on completion.

Toughened glass: Do not cut, drill, edge-work or permanently mark after toughening. Use installation methods that prevent the glass making direct contact with metals or other non-resilient materials.

Heat absorbing glass: In locations exposed to direct sunlight, provide wheel cut edges free from damage or blemishes, and with minimum feather.

Weatherproofing

Flashing and weatherings: Install flashings, weather bars, drips, storm moulds, joint sealant and pointing to prevent water penetrating the building between the window frame and the building structure under the prevailing service conditions, including normal structural movement of the building.

Fixing

General: Do not penetrate metal flashings with fixings.

Packing: Pack behind fixing points with durable full width packing.

Fasteners: Conceal fasteners.

Fastener spacing (nominal): 600 mm and maximum 150 mm from reveal ends.

Joints

General: Make accurately fitted tight joints so that fasteners or fixing devices such as pins, screws, adhesives and pressure indentations are not visible on exposed surfaces.

Sealants:

- If priming is recommended, prime surfaces in contact with jointing materials.
- If frames are powder coated, apply a neutral cure sealant.

Operation

General: Make sure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and are lubricated.

Protection

Removal: Remove temporary protection measures from the following:

- Contact mating surfaces before joining up.
- Exposed surfaces before completion of the works.

Temporary measures: [complete/delete]

State a particular method here, or delete to leave the choice of method to the contractor. For on-site care, see AS 2047 (2014) Appendix E (Informative).

Trim

General: Provide mouldings, architraves, reveal linings, and other internal trim using materials and finishes matching the window frames. Install to make neat and clean junctions between frames and the adjoining building surfaces.

3.3 VENTILATING LOUVRE ASSEMBLIES**General**

Installation: Screw fix stiles and mullions to the building structure. Provide weatherstrips to heads and sills.

Expansion joints

Requirement: Provide for expansion and contraction in continuous sections, at spacings not exceeding those recommended by the manufacturer, or 6 m, whichever is the lesser.

Continuous sections include continuous louvres and interlocking mullions.

Framed adjustable louvres

Installation: Screw fix the main frame to the building structure with monel or stainless steel screws or masonry anchors of the type recommended by the louvre manufacturer.

3.4 SECURITY

Security window grilles

Installation: To AS 5040 (2003).

3.5 COMPLETION

Repair of finish

Polyester or fluoropolymer coatings: Contact supplier for approval to apply touch up products, otherwise replace damaged material.

Cleaning

Method: Clean with soft clean cloths and clean water, finishing with a clean squeegee. Do not use abrasive or alkaline materials.

Extent: All frames and glass surfaces internally and externally.

Operation and maintenance manuals

Requirement: Prepare a manual that includes the manufacturer’s published instructions for operation, care and maintenance.

Compliance with this clause targets the Operations and Maintenance requirement within the Minimum Expectation level of the Verification and Handover credit in Green Star Buildings (2021).

Warranties

Louvre window assemblies: Provide Breezway’s published product warranties.

Use only if warranties extending beyond the defects liability period are available for the documented system. Insert the required warranty period and terms, which should be negotiated beforehand. If the warranty is in the form of separate material and installation warranties, require the signatures of both manufacturer and installer.

Altair louvre systems are designed to meet the requirements of AS 2047 (2014). Refer to Breezway Louvre Windows Design Manual for maximum variations for non-cyclonic and cyclonic wind classifications and water penetration. Exceeding these constraints will void any Warranty.

For residential or commercial building classes, or for housing outside the limitations of AS 4055 (2021) consult Breezway with specific project requirements to determine the relevant performance warranty constraints.

Breezway offers a warranty against defects for a period of 7 years (3 years on electrical components).

The form(s) required should be provided as part of the contract documentation.

Warranty: Provide a warranty on [complete/delete]

- Form of warranty: [complete/delete]
- Minimum period: [complete/delete]

If documenting warranties, change this *Optional* style text to *Normal* style text.

Form of warranty: e.g. Against failure of materials and operation under normal environment and use conditions.

Minimum period: e.g. As offered by the manufacturer.

4 SELECTIONS

Schedules are a tool to specify properties required for products or systems. If the principal permits documentation of the product or system by proprietary name, some of the properties may be unnecessary and can be deleted. Document the product or system's location or application here and/or on the drawings with a matching project code. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

4.1 PERFORMANCE

Louvre window performance schedule

	A	B	C
Total system U-Value (W/m ² .K)			
Total system SHGC			
Airborne sound insulation			

	A	B	C
Visible transmittance (T_{vis})			
Reflectance (%)			
WERS Energy rating%: Heating			
WERS Energy rating%: Cooling			
AGWA Glass Compliance Certificate			
AGWA Window Compliance Certificate			
Water penetration resistance (Pa)			
Ultimate limit state (ULS) wind pressure (Pa)			
Serviceability limit state (SLS) wind pressure (Pa)			
Openable (free) area (m ²)			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Total system U-Value (W/m².K): Insert the thermal transmittance value used for determining NCC conformance and calculated to BCA (2022) Spec 37. These should be obtained from tests to NFRC 100 (2023). Select the product to fulfil design and compliance requirements. See NATSPEC TECHnote DES 015 on NCC energy efficiency.

Total system SHGC: Insert the solar heat gain coefficient value used for determining NCC compliance. These should be obtained from tests to NFRC 200 (2023). Select the product to fulfil design and compliance requirements.

Airborne sound insulation: State the required rating to AS/NZS ISO 717.1 (2004) for either the weighted sound reduction index (R_w) or weighted sound reduction index with spectrum adaptation ($R_w + C_{tr}$). This rating is for a building system e.g. partition wall, of which the building element is only one component. It may be better to provide the rating in the appropriate system schedule. It is advisable to obtain the advice of an acoustic consultant on the selection of an R_w or $R_w + C_{tr}$ rating for airborne sound transmission reduction. Refer to NATSPEC TECHnote DES 032 for information.

Visible transmittance (T_{vis}): The visible light passing directly through the glass. The higher the T_{vis} , the more daylight.

Reflectance (%): A maximum value is often a council requirement. Refer to the ABCB Glazing calculator available from www.abcb.gov.au/resources. Delete if this requirement is more appropriately covered in the **Glass schedule**.

WERS Energy rating: Star rating system operated by AGWA.

AGWA Glass Compliance Certificate: Insert Required or Not required. The AGWA Glass Compliance Certificate will cover only products that conform to AS 1288 (2021).

AGWA Window Compliance Certificate: Insert Required or Not required. The AGWA Window Compliance Certificate will cover only products that conform to AS 1288 (2021) and AS 2047 (2014).

Water penetration resistance (Pa): e.g. 150 Pa.

Ultimate and serviceability limit state wind pressure (Pa): Nominate the design wind pressures for the project to AS/NZS 1170.2 (2021) (for residential and commercial buildings) or AS 4055 (2021) (for Class 1 and 10a buildings). AS 2047 (2014) Appendix A includes an informative guide to design wind pressure.

Openable (free) area (m²): State the openable area in m² to achieve NCC requirements for natural ventilation.

4.2 BREEZWAY LOUVRE WINDOW SYSTEMS

Altair louvre window system schedule

	A	B	C
Product			
Frame: Finish			
Frame: Colour			
Frame: Height and width (mm)			
Stronghold system			
Restricted opening			
Blade: Material			
Blade: Finish			
Blade: Height and width (mm)			
IGLU Blade span			

	A	B	C
IGLU Blade depth			
Number of bays			
Gallery clip size			
Gallery colour			
Operation: Operator type			
Operation: Handle type			
Operation: Handle and clip colour			
Operation: Handle position			
Reveal/Flashing type and size			
Screen: Frame material			
Screen: Frame finish			
Screen: Mesh type			
Security window grilles			
Security bar			
Key lock			
Offset mullions			
Couplers and cover plates			
Bay configuration			
Subframing			
Glazing			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Select from Easyscreen, Innoscreen or SL2.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Nominate the colour.
- Height and width (mm): Nominate the dimensions.

Stronghold system: Required/Not required. Not available for timber blades. Compliance with fall prevention requirements is available using the Stronghold system and/or restricted openings.

Restricted opening: Required/Not required. Document the size, e.g. 80 mm or 100 mm.

Blade:

- Material: Select from Glass, Aluminium, Timber. See *Guidance* on glazing below.
- Finish: Select from Powder coat, Anodised, Paint, Clear finish, No applied finish. Coordinate paint finishes using paint type designation from *0671 Painting*.
- Height and width (mm): Select height from 102 mm and 152 mm.

IGLU blade span: For double glazed louvre system. Select from standard spans: 300 mm, 500 mm, 800 mm, 1127 mm.

IGLU blade depth: Select from standard widths: 102 mm and 152 mm.

Operation:

- Operator type: Select from Powerlouvre, Manual or Fixed.
- Handle type: Select from Standard, Low profile, Ring handle. Delete if not required.
- Handle and clip colour: Select from the manufacturer's range.
- Handle position: Left handed or right handed. Document requirements for additional handles.

Screen: Document here or cross reference the **Screen schedule**. For bushfire-prone areas, refer to AS 3959 (2018) for details of construction requirements associated with the BAL of the site. AS 3959 (2018) calls for screens of aluminium, corrosion-resistant steel or bronze with a maximum aperture of 2 mm to buildings assessed as being in a BAL-12.5, BAL-19 or BAL-29 zone and corrosion-resistant steel or bronze in buildings assessed as being in a BAL-40 or BAL-FZ zone. Fibreglass mesh is excluded in all bushfire areas. Document bushfire shutters in *0457 External screens*. See NATSPEC TECHnote DES 018 on bushfire protection.

- Frame material: e.g. Aluminium, Timber or PVC-U.
- Frame finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish.
- Mesh type: e.g. Coated aluminium, Fibreglass, Corrosion-resistant steel or Bronze.

Security window grilles: Nominate material and finish. Document here or cross reference the **Security window grille schedule**. Delete if not required.

Security bar: e.g. Altair louvre security bar system.

Key lock: e.g. Altair louvre keylock.

Glazing: Document the glazing type and thickness in this schedule or cross reference the **Glass schedule**. Documenting glazing in this schedule is suitable for projects where the same glass is used for each window or glazed door type. It can be documented by description, e.g. 6.38 mm clear laminated glass, or by reference to a designated glass type in the **Glass schedule**. The latter approach may be more appropriate for projects with a large number of glazing types, or glazing that requires more detailed specification. Refer to the *Guidance* for the **Glass schedule** and NATSPEC TECHnote PRO 006 for guidance on glass types.

Dualair™ secondary glazed louvre window schedule

	A	B	C
Primary frame			
Blade quantity			
Window width (including primary frame jamb)			
Inner gallery operator type			
Stronghold system			
Restricted opening			
Operation: Handle type			
Operation: Handle and clip colour			
Operation: Handle position			
Blade: Material			
Blade: Finish			
Key lock			
Glazing			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Primary frame: Select from Alspec McArthur EVO 150 mm or Hunter EVO Acoustic.

Blade quantity: Determines system's height.

Window width: Include Alspec jambs.

Inner gallery operator type: Powerlouvre or Manual.

Stronghold system: Required/Not required. Compliance with fall prevention requirements is available using the Stronghold option and restricted openings.

Restricted opening: Required/Not required.

Operation:

- Handle type: If the inner gallery is manually operated, select from Standard, Low profile, Ring or delete.
- Handle and clip colour: Select from the manufacturer's range.
- Handle position: Left handed or right handed. Document requirements for additional handles.

Blade:

- Material: e.g. Glass, Aluminium. See *Guidance* on glazing below.
- Finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish. Coordinate paint finishes using paint type designation from *0671 Painting*.

Key lock: e.g. Altair louvre keylock.

Glazing: Document the glazing type and thickness in this schedule or cross reference the **Glass schedule**. Documenting glazing in this schedule is suitable for projects where the same glass is used for each window or glazed door type. It can be documented by description, e.g. 6 mm clear toughened glass, or by reference to a designated glass type in the **Glass schedule**. The latter approach may be more appropriate for projects with a large number of glazing types, or glazing that

requires more detailed specification. Refer to the *Guidance* for the **Glass schedule** and NATSPEC TECHnote PRO 006 for guidance on glass types.

4.3 VENTILATING LOUVRE ASSEMBLIES

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.

Ventilating louvre assembly schedule

	A	B	C
Product			
Type			
Frame: Material			
Frame: Finish			
Frame: Height and width (mm)			
Louvre blade: Material			
Louvre blade: Profile			
Louvre blade: Finish			
Louvre blade: Height and width (mm)			
Operation			
Hardware			
Screen: Frame material			
Screen: Frame finish			
Screen: Mesh type			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Delete if the selection is by generic performance.

Type: e.g. Horizontal, Continuous horizontal, Vertical.

Frame:

- Material: e.g. Aluminium, Timber.
- Finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish. Coordinate paint finishes using paint type designation from *0671 Painting*.
- Height and width (mm): Nominate the dimensions.

Louvre blade:

- Material: e.g. Aluminium, Timber.
- Profile: e.g. Z, throated, 1-stage, 2-stage.
- Finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish. Coordinate paint finishes using paint type designation from *0671 Painting*.
- Height and width (mm): Nominate the dimensions.

Operation: e.g. Fixed, Operable.

Hardware: Select proprietary or nominate hardware if not supplied as part of the louvre window assembly. Coordinate with your hardware schedule.

Screen: AS/NZS 3666.1 (2011) clause 2.2.1 requires the provision of screens behind air intake louvres. Document here or cross reference the **Screen schedule**.

- Frame material: e.g. Aluminium, Timber or PVC-U.
- Frame finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish.
- Mesh type: e.g. Coated aluminium, Fibreglass, Corrosion-resistant steel or Bronze.

4.4 SCREENS

Screen schedule

	A	B	C
Product			

	A	B	C
Type			
Frame material			
Frame finish			
Mesh type			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Delete if the selection is by generic performance.

Type: e.g. Flyscreen, Fall prevention screen, Bushfire screen. See BCA (2022) D3D29 and BCA (2022) H5D3 for openable windows requiring fall prevention devices, screens or barriers.

Frame material: e.g. Aluminium, Timber or PVC-U.

Frame finish: e.g. Powder coat, Anodised, Paint, Clear finish, No applied finish. Coordinate paint finishes using paint type designation from 0671 *Painting*.

Mesh type: e.g. Aluminium, Fibreglass, or Stainless steel. Document here or in the **Altair louvre window system schedule** or **Ventilating louvre assembly schedule**. For bushfire-prone areas, refer to AS 3959 (2018) for details of construction requirements associated with the BAL of the site. AS 3959 (2018) calls for screens of aluminium, corrosion-resistant steel or bronze with a maximum aperture of 2 mm to buildings assessed as being in a BAL-12.5, BAL-19 or BAL-29 zone and corrosion-resistant steel or bronze in buildings assessed as being in a BAL-40 or BAL-FZ zone. Fibreglass mesh is excluded in all bushfire areas. Document bushfire shutters in 0457 *External screens*. See NATSPEC TECHnote DES 018 on bushfire protection. BREEZWAY have test reports for systems using Invisi-Gard stainless steel mesh screens with 2.0 x 2.0 mm mesh size x 1.0 mm thick. Dualair Secondary Glazed Louvres cannot be externally screened and are not bushfire compliant.

4.5 SECURITY

Security window grille schedule

	A	B	C
Product			
Type to AS 5039 (2008)			
Material			
Finish			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Delete if the selection is by generic performance.

Type to AS 5039 (2008): AS 5039 (2008) clause 5.2 describes the three window screen security classification types as follows:

- Type I prevents an arm from passing through.
- Type II allows an arm to pass through but prevents bodily entry.
- Type III prevents insects passing through.

Material: e.g. Steel, Stainless steel or Aluminium.

Finish: See AS 5039 (2008) clause 6.2 for corrosion protection finishes.

4.6 GLAZING

Glass schedule

	A	B	C
Glass type			
Glass thickness (mm)			
Body tint colour			
Interlayer colour			
Surface coating: Description			
Surface coating: Colour			
Reflective coating: Colour			
Reflective coating: % reflectance			

	A	B	C
Surface pattern			
Surface processing: Method			
Surface processing: Pattern			
Surface processing: Colour			
Edge processing			
Number of edges processed			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

This schedule can be used for projects where a large number of different glass types are used or if the glazing requires more detailed specification than it is appropriate to include in the **Altair louvre window system schedule** or the **Dualair™ secondary glazed louvre window schedule**. If this schedule is used, coordinate with the **Altair louvre window system schedule** or the **Dualair™ secondary glazed louvre window schedule** so that each glass type is associated with the relevant louvre window.

Glass type: Refer to NATSPEC TECHnote PRO 006 for guidance on glass types.

Glass thickness (mm): It is generally not necessary to document thickness. Nominate a thickness where:

- The glass is to be thicker than required by AS 1288 (2021) or applicable regulations.
- There are unusual conditions requiring detailed calculations for which the designer should be responsible.

In other cases, the determination of thickness is usually within the competence of the glazing contractor.

Body tint colour: e.g. Grey, Bronze, Green, Blue. Consult the manufacturer for colours available. Do not use body tinted wired glass (cast or polished) in locations exposed to the sun; fracture may result.

Interlayer colour: For laminated glasses only. Consult the manufacturer for colours available.

Surface coating:

- Description: Describe by coating function, e.g. Solar control, Low emission, Self-cleaning, Decorative, or by coating type, e.g. Pyrolytic hard coating, Vacuum sputtered or Ceramic. Coatings are best described by the manufacturer's brand name. Self-cleaning surface coatings are coatings applied to glazing that dissolve dirt (photoactive) and shed water (hydrophilic) using natural UV light and rain.
- Colour: e.g. Grey, Bronze, Green, Blue. Consult the manufacturer for colours available.

Reflective coating:

- Colour: e.g. Silver, Gold, Bronze. Consult the manufacturer for colours available. Reflective coatings may be available on either clear or body tinted float. Consult manufacturer.
- % reflectance: Consult the manufacturer for reflectances available. Delete if this requirement is more appropriately covered in the **Louvre window performance schedule**. The manufacturer's brand name is often the best way to identify tinted, reflective, and patterned glasses.

Surface pattern: For patterned glass only. Proprietary patterns are best described by the manufacturer's brand name. Patterns include diffuse reflection (picture glass).

Surface processing:

- Method: e.g. Screen printing with ceramic paint fused to the surface, Sandblasting, Acid etching.
- Pattern: Proprietary patterns are best described by the manufacturer's brand name.
- Colour: Applicable to screen printed patterns only.

Edge processing: Maximum width varies with thickness. Wired glass is restricted to rough arrised edges. Consult with processor. Refer also to NATSPEC TECHnote PRO 006 for more information on this topic. Common edge types and typical applications for each edge type are:

- None (clean cut, no processing).
- Flat ground: Silicone structural glazing with exposed edges.
- Flat polished: Silicone structural glazing where edge condition is critical for aesthetic purposes.
- Ground pencil edge: Mirrors, decorative furniture glass.
- Polished pencil edge: Mirrors, decorative furniture glass.
- Ground mitre: Silicone structural glazing.
- Bevelled: Mirrors, decorative furniture glass.
- Seamed edges: Normal edge treatment for heat-treated glass.

Number of edges processed: e.g. 1 long, 2 long, All.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS ISO 717		Acoustics - Rating of sound insulation in buildings and of building elements
AS/NZS ISO 717.1	2004	Airborne sound insulation
AS/NZS 1170		Structural design actions
AS/NZS 1170.1	2002	Permanent, imposed and other actions
AS 1231	2000	Aluminium and aluminium alloys - Anodic oxidation coatings
AS 1288	2021	Glass in buildings - Selection and installation
AS 1530		Methods for fire tests on building materials, components and structures
AS 1530.8.1	2018	Tests on elements of construction for buildings exposed to simulated bushfire attack - Radiant heat and small flaming sources
AS 2047	2014	Windows and external glazed doors in buildings
AS/NZS 2208	1996	Safety glazing materials in buildings
AS/NZS 2904	1995	Damp-proof courses and flashings
AS 3715	2002	Metal finishing - Thermoset powder coating for architectural applications of aluminium and aluminium alloys
AS 3959	2018	Construction of buildings in bushfire-prone areas
AS/NZS 4667	2000	Quality requirements for cut-to-size and processed glass
AS/NZS 4668	2000	Glossary of terms used in the glass and glazing industry
AS 5039	2008	Security screen doors and security window grilles
AS 5040	2003	Installation of security screen doors and window grilles
AS 5203	2016	Protection of openable windows/ fall prevention – Test sequence and compliance method
AS 5218	2018	Acoustic performance of windows and doors - Methods of test
BCA D3D29	2022	Access and egress - Construction of exits - Protection of openable windows
BCA H5D3	2022	Class 1 and 10 buildings - Safe movement and access - Barriers and handrails
ASTM C920	2018	Standard specification for elastomeric joint sealants
ASTM C1311	2022	Standard specification for solvent release sealants
NFRC 100	2023	Procedure for determining fenestration product U-factors
NFRC 200	2023	Procedure for determining fenestration product solar heat gain coefficient and visible transmittance at normal incidence
EN 14179		Glass in buildings - Heat soaking thermally toughened soda lime silicate safety glass
EN 14179-1	2016	Definition and description
ISO 11600	2002	Building construction - Jointing products - Classification and requirements for sealants

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

AS/NZS 1170		Structural design actions
AS/NZS 1170.2	2021	Wind actions
AS 1191	2002	Acoustics - Method for laboratory measurement of airborne sound transmission insulation of building elements
AS/NZS 3666		Air-handling and water systems of buildings - Microbial control
AS/NZS 3666.1	2011	Design, installation and commissioning
AS 4055	2021	Wind loads for housing
AS 5041	2003	Methods of test - Security screen doors and window grilles
BCA Spec 37	2022	Energy efficiency - Calculation of U-Value and solar admittance
GBCA Buildings	2021	Green Star Buildings
NATSPEC DES 010		Atmospheric corrosivity categories for ferrous products
NATSPEC DES 015		NCC - BCA Volume One Energy efficiency provisions
NATSPEC DES 018		Bushfire protection
NATSPEC DES 032		Airborne sound insulation
NATSPEC GEN 006		Product specifying and substitution
NATSPEC GEN 024		Using NATSPEC selections schedules
NATSPEC PRO 006		Glass types used in buildings
NATSPEC TR 01		Specifying ESD
BS 2571	1990	Specification for general-purpose flexible PVC compounds for moulding and extrusion
BS 4255		Rubber used in preformed gaskets for weather exclusion from buildings
BS 4255-1	1986	Specification for non-cellular gaskets