

0451P CAPRAL ALUMINIUM WINDOWS AND DOORS**Branded worksection**

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Worksection abstract

This branded worksection *Template* is applicable to commercial and residential aluminium framed windows and glazed doors designed and tested by CAPRAL ALUMINIUM and supplied as complete systems. It includes glazing, hardware and associated integral blinds, and grilles as well as installation accessories, such as fasteners, flashings, sealants and seals, caulking and weatherstripping, necessary for the satisfactory functioning of the whole system.

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:

- *0421 Roofing – combined* for skylights and roof windows.
- *0432 Curtain walls*.
- *0456 Louvre windows*.
- *0457 External screens*.
- *0461 Glazing* for glazing for curtain walls and glazing in framed openings.
- *0462 Structural silicone glazing* for adhesive fixed glazing.
- *0463 Glass blockwork*.
- *0524 Partitions – glazed* for glazed internal partitions.

Related branded worksections include:

- *0456p CAPRAL VENTUS louvre windows*.

Material not provided by CAPRAL ALUMINIUM

This branded worksection does not include:

- Frameless glazing.
- Timber windows and doors.
- PVC-U windows and doors.

Documenting this and related work

You may document this and related work as follows:

- Schedule windows, doors and hardware 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.
- For protection of openable windows conforming to BCA (2022) D3D29 and BCA (2022) H5D3, document a device to restrict the window opening, a screen with secure fittings or a barrier to the window, as required.
- Operation of window sashes to satisfy maintenance requirements.
- See NATSPEC TECHnote PRO 006 for glass types used in buildings.
- For smoke and heat venting, see AS 2665 (2001), which is cited in the NCC.
- 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).
- For information on timber windows and doors, refer to WoodSolutions 10 (2015).

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

For example:

- Maintenance requirements for performance of product design.

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.
- Properties and rating systems for glazing, windows and skylights.
- 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.
- Insulating glass units (IGUs).
- Window seals to minimise air leakage when windows are shut.

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).
- Operable shutter or window hardware for natural ventilation.
- 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:

- Aluminium products using lower carbon aluminium.
- Re-use of salvaged windows.
- Recycled material content, e.g. Aluminium frames.

Refer to NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

Capral Aluminium, established in 1936, is Australia's largest manufacturer and distributor of aluminium profiles. Our comprehensive range of commercial, residential, security and industrial products has an enviable reputation for quality, style and high performance. As a local systems designer, NATA-accredited testing authority, and with innovative R&D capabilities, we are well-positioned to take advantage of changing building regulations in Australia and technically support our brands, including Artisan Architectural, AGS Commercial, Urban Plus, Futureline Thermal and Amplimesh.

1.1 RESPONSIBILITIES

General

Requirement: Provide CAPRAL ALUMINIUM windows and glazed doors, as documented.

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

1.2 COMPANY CONTACTS

Capral Aluminium technical contacts

Website: www.capral.com.au/architectural-building-solutions/caprals-specification-team/

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).

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 minimum thickness, refer to AS 1288 (2021) Table 4.1.

Glass thickness may be governed by human safety and other requirements – see AS 1288 (2021) Sections 5, 6 and 7. Maximum spans for various thicknesses of glass types subject to wind loading are shown in the figures in 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).

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 (i.e. toughened or laminated).
- 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 laminated and toughened glass.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: www.capral.com.au/resources-downloads/technical-docs-drawings/

1.6 INTERPRETATION

Abbreviations

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

- AGWA: Australian Glass and Window Association.
- 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:

- Hardware: To AS 4145.1 (2008) Section 2.
- 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).
- Weathering: Inclined upper external surface, such as of a coping, sill, or top of a buttress or chimney, designed to shed rainwater quickly and throw it clear of the facing material below.

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

1.7 SUBMISSIONS

Certification

Windows and glazed doors: Submit evidence of conformity to AS 2047 (2014).

See AS 2047 (2014) clause 8.3.

Sealant compatibility: Submit statements from all parties to the installation certifying the compatibility of sealants and glazing systems to all substrates.

Opacified glass: Submit a report, from the manufacturer, certifying that the proposed method of opacifying the glass will not be detrimental to the glass or affect the glass product warranty.

Toughened glass: For each batch of glass, submit certification from the manufacturer of heat soaking.

Certification by the manufacturer is an alternative to marking heat soaked glass to EN 14179-1 (2016). Delete if marking is to be provided. If required, document glass for heat soaking in SELECTIONS.

Fire performance

Bushfire-resistance: Submit evidence of conformity to PRODUCTS, **FIRE PERFORMANCE**, **Bushfire resistance**.

Operation and maintenance manuals

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

Products and materials

Safety glazing materials: Submit evidence of conformity to AS/NZS 2208 (1996) Appendix A.

Type tests: Submit results, as follows:

- Acoustic performance of windows and doors.

Double glazed systems: Interpolation between test results for similar systems is acceptable, provided dimensional (thickness or width) differences do not exceed a ratio of 1:1.5, and each tested system differs from the proposed system by not more than one variable of one of the following elements:

- Cavity: Width dimension.
- Cavity reveal: Acoustic absorption treatment.
- First panel: Glass type, glass thickness.
- Mounting: Type, seal type.
- Second panel: Glass type, glass thickness.

- Protection of openable windows.

Type tests are carried out off-site. 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.

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.

Prototypes

Use only for large projects where appropriate. Several prototypes may be required where there are different window systems. Show the prototype location and extent on the drawings.

Sample installations: Install the designated typical window and door assemblies in their final position incorporating at least one example of each component in the system, including attachments to the structure, flashing, caulking, sealing, glazing, operating hardware, locks and keys.

Required prototypes: [complete/delete]

Nominate a designated window assembly by description or by reference to drawings of an area marked on an elevation.

Samples in prototypes: Install required samples in prototypes.

Delete if not required.

Samples

General: Submit samples labelled with the series code reference and date of manufacture.

Window and door framing: Submit samples of the following:

- Prefinished production materials showing the limits of the range of variation in the documented colour.

- Joints made by proposed techniques.
- Sections for frames, sashes, louvres and slats.

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 or plastics glazing.
- Surface modified or surface coated glass.
- Patterned or obscured glass or plastics glazing.
- Ceramic-coated glass.
- Wired glass.
- Mirror glass.

Hardware and accessories: Submit samples of the following:

- Window manufacturer's standard hardware and accessories including locks, latches, handles, catches, sash operators, anchor brackets and attachments, masonry anchors and weatherseals (pile or extruded).
- Generic hardware: Submit samples of generic hardware not documented as proprietary items.

If required, add samples of generic hardware required.

Shop drawings

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

- Full size sections of members.
- Hardware, fittings and accessories including fixing details.

Window and door manufacturers may provide cylinder type proprietary hardware capable of accepting keyed alike systems, construction keying and master key systems. If windows and doors are to be supplied without proprietary hardware, for fitting selected hardware supplied by others, make sure that the selected window and door suites can accept the selected hardware. 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, caulking and flashing.

See BCA (2022) J5D5 and BCA (2022) H6D2(1)(b)(iii) for the sealing of windows and doors.

- Provision for vertical and horizontal expansion.
- Method of glazing, including the following:
 - . Rebate depth.
 - . Edge restraint.
 - . Clearances and tolerances.
 - . Glazing gaskets and sealant beads.

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.

Tests

Detail the tests required in PRODUCTS or EXECUTION, as appropriate, and list the submissions required here.

Fail prevention tests: Submit test results to TESTING, Fail prevention tests.

If on-site fail prevention tests are documented, include this *Optional* style text by changing to *Normal* style text.

Warranties

Requirement: Submit CAPRAL ALUMINIUM warranty for finishing and hardware to **COMPLETION, Warranties.**

1.8 INSPECTION

Notice

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

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

Handling: Handle frames to the manufacturer's recommendations and as follows:

- Stack upright, off the ground and against a flat, vertical surface.
- Carry in the vertical position with sashes locked.
- Do not rack frames out of square.
- Do not remove any bands and corner bracing until after installation.

Acoustic performance

Windows and doors: Rating to AS/NZS ISO 717.1 (2004), as documented.

Document the required rating in the **Window and glazed door performance schedule**.

Protection of openable windows

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

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.

Marking

Window assemblies: To AS 2047 (2014) Section 8.

Window assemblies for housing are required to be labelled to AS 2047 (2014) clause 8.2. Timber window assemblies for housing and 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.

2.2 FIRE PERFORMANCE

Bushfire resistance

Windows and doors: To AS 3959 (2018).

The BAL level is documented in *0171 General requirements*. AS 3959 (2018) clause 3.8 requires systems to be tested to the AS 1530.8 series for the relevant BAL level.

Contact CAPRAL ALUMINIUM for a list of products that can achieve BAL 40. All CAPRAL ALUMINIUM products are capable of achieving lower BAL levels.

2.3 CAPRAL ALUMINIUM AGS COMMERCIAL FRAMING SYSTEMS

AGS 300 Narrowline

Application: Light-commercial, internal fitout or architectural.

Compatible product range: 215 Series Door, 225 Series Door, 35 and 50 Window, 390 Sliding Window, 391 Double Hung, 392 Awning, 395 Folding Window. The centre glazed configuration can incorporate adaptors to accommodate hinged doors and operable windows.

Description: Single glazed centre pocket framing system.

Framing section: 76 mm x 35 mm.

Maximum height: 3300 mm.

Maximum width: 2000 mm.

AGS 325 Narrowline Double Glazed

Application: Light-commercial, internal fitout or architectural applications requiring improved thermal performance.

Compatible product range: 300 Narrowline, 35 Series Window, 390 Sliding Window, 391 Double Hung, 392 Awning Window, 395 Folding Window. The centre glazed configuration can incorporate adaptors to accommodate doors and windows.

Description: Double glazed centre pocket framing system.

Framing section: 76 mm x 35 mm.

Maximum height: 3000 mm.

Maximum width: 2000 mm.

AGS 400 Narrowline

Application: Most commercial or architectural applications requiring high levels of structural performance.

Compatible product range: 425 Double Glazed Narrowline, 215 and 225 Series Doors, 900 Sliding Door, Artisan Folding Doors, 35 and 50 Series Windows, 390 Sliding Window, 391 Double Hung, 392 Awning Window, 395 Folding window, 950 Sliding Window, Euro Tilt and Turn Window, Euro Awning/Casement Window.

Description: Single glazed centre pocket framing system.

Framing section: 101.6 mm x 44 mm.

Maximum height: 4000 mm.

Maximum width: 2400 mm.

AGS 425 Narrowline Double Glazed

Application: Most commercial or architectural applications requiring improved thermal performance and high levels of structural performance.

Compatible product range: 400 Narrowline, 215 and 225 Series Doors, Artisan Folding Doors, 900 Sliding Door, 35 and 50 Series Window, 390 Sliding Window, 391 Double Hung, 392 Awning Window, 950 Series Window.

Description: Double glazed centre pocket framing system.

Framing section: 101.6 mm x 50 mm.

Maximum height: 4000 mm.

Maximum width: 2400 mm.

AGS 450 Narrowline Double Glazed

Application: Most commercial or architectural applications requiring improved thermal performance. It is ideal for health projects where double glazed venetians have been specified.

Compatible product range: 400 and 425 Narrowline, 225 Series Doors.

Description: Wide pocket double glazed centre pocket framing system.

Framing section: 101.6 mm x 55 mm frame.

Maximum height: 4000 mm.

Maximum width: 2400 mm.

AGS 600 Narrowline

Application: Most commercial applications requiring more strength than the AGS 400 Narrowline.

Compatible product range: 215 Series Door, 225 Series Door, 900 Sliding Door, 35 and 50 Series Windows, Euro Awning/Casement, Euro Tilt/Turn Window.

Description: Single glazed centre pocket framing system.

Framing section: 150 mm x 50 mm.

Maximum height: 4000 mm.

Maximum width: 2200 mm.

AGS 625 Narrowline Double Glazed

Application: Most commercial applications requiring improved thermal performance and more strength than the AGS 425 Narrowline.

Compatible product range: 215 Door, 225 Door, 900 Sliding Door, 35 and 50 Series Window, Euro Awning/Casement, Euro Tilt/Turn Window.

Description: Double glazed centre pocket framing system.

Framing section: 150 mm x 50 mm.

Maximum height: 4000 mm.

Maximum width: 2200 mm.

AGS 601 Offset Narrowline

Application: Most commercial applications requiring more strength than the AGS 400 Narrowline but with the same look and product compatibility.

Compatible product range: 215 Door, 225 Door, 900 Sliding Door, 35 and 50 Series Window, Euro Awning/Casement, Euro Tilt/Turn Window.

Description: Single glazed offset pocket framing system.

Framing section: 150 mm x 44 mm.

Maximum height: 5000 mm.

Maximum width: 2200 mm.

AGS 419 Flushline Single Glazed - 100 mm frame

Application: Most commercial or architectural applications requiring a flush-glazed external appearance.

Compatible product range: 215 and 225 Series Door, 900 Sliding Door, 35 and 50 Series Window, Euro Window, 950 sliding window.

Description: Single glazed forward positioned glazing pocket framing system for flush external finish.

Framing section: 100 mm x 50 mm.

Maximum height: 3800 mm.

Maximum width: 2400 mm.

AGS 619 Flushline Single Glazed - 150 mm frame

Application: Most commercial or architectural applications requiring a flush-glazed external appearance.

Compatible product range: 215 and 225 Series Door, 900 Sliding Door, 35 and 50 Series Window, Euro Window, 950 sliding window.

Description: Single glazed forward positioned glazing pocket framing system for flush external finish.

Framing section: 150 mm x 50 mm.

Maximum height: 5000 mm.

Maximum width: 2400 mm.

AGS 619 Flushline Acoustic

Application: Locations requiring higher levels of acoustic performance such as those close to airports, train stations or busy roads.

Compatible product range: 215 and 225 Series Door, 900 Sliding Door, 35 and 50 Series Window, Euro Window.

Description: Dual glazing pocket framing system that allows a 100 mm air space for noise reduction.

Framing section: 150 mm x 50 mm.

Maximum height: 4400 mm.

Maximum width: 2400 mm.

AGS 429 Flushline Double Glazed - 100 mm frame

Application: Its front glazed arrangement maximises internal areas whilst achieving a clean and modern external appearance. It has a selection of frame depths so that the system can be tailored to the strength and size requirements of individual applications. A uniform external appearance also allows various frame widths to be used whilst maintaining a consistent look.

Compatible product range: 215 and 225 Series Door, 900 Series Door, 35 and 50 Series Windows, Euro Window.

Description: Double glazed forward positioned glazing pocket, framing system for flush external finish.

Framing section: 100 mm x 55 mm.

Maximum height: 3400 mm.

Maximum width: 2400 mm.

AGS 629 Flushline Double Glazed - 150 mm frame

Application: Its front glazed arrangement maximises internal areas whilst achieving a clean and modern external appearance. It has a selection of frame depths so that the system can be tailored to the strength and size requirements of individual applications. A uniform external appearance also allows various frame widths to be used whilst maintaining a consistent look.

Compatible product range: 215 and 225 Series Door, 900 Series Door, 35 and 50 Series Windows, Euro Window.

Description: Double glazed forward positioned glazing pocket, framing system for flush external finish.

Framing section: 150 mm x 55 mm.

Maximum height: 5000 mm.

Maximum width: 2400 mm.

AGS 1029 Flushline Double Glazed - 250 mm frame

Application: Its front glazed arrangement maximises internal areas whilst achieving a clean and modern external appearance. It has a selection of frame depths so that the system can be tailored to the strength and size requirements of individual applications. A uniform external appearance also allows various frame widths to be used whilst maintaining a consistent look.

Compatible product range: 215 and 225 Series Door, 900 Series Door, 35 and 50 Series Windows, Euro Window.

Description: Double glazed forward positioned glazing pocket, framing system for flush external finish.

Framing section: 250 mm x 55 mm.

Maximum height: 6000 mm.

Maximum width: 2400 mm.

AGS 659 Flushline Double Glazed - 150 mm frame with 50mm pocket

Application: Its front glazed arrangement maximises internal areas whilst achieving a clean and modern external appearance. It has a selection of frame depths so that the system can be tailored to the strength and size requirements of individual applications. A uniform external appearance also allows various frame widths to be used whilst maintaining a consistent look.

Compatible product range: 215 and 225 Series Door, 900 Series Door, 35 and 50 Series Windows, Euro Window.

Description: Wide, double glazed forward positioned glazing pocket, framing system for flush external finish.

Framing section: 150 mm x 55 mm.

Maximum height: 5000 mm.

Maximum width: 2400 mm.

2.4 CAPRAL ALUMINIUM AGS COMMERCIAL WINDOWS

AGS 35 Series Awning and Casement Windows

Application: Most commercial and architectural applications.

Hardware: Hinge or stay options operated with chainwinders or cam handles. Electronic operator available.

Screen: Flyscreen can be integrated into the frame.

Compatible product range: 300, 325, 400, 425, 600, 601, 625 Narrowline suites, 419, 429, 619, 629, 1029 Flushline suites.

Description: Single or double glazed awning and casement operable window system capable of incorporating fixed lights and operable awning or casement sashes.

Maximum panel size and weight:

- Awning window:
 - . Height: 1500 mm.
 - . Width: 1200 mm.
 - . Weight: 60 kg.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 750 mm.
 - . Weight: 40 kg.
- Integral hinged awning window:
 - . Height: 1800 mm.

- . Width: 1500 mm.
- . Weight: 60 kg.

Refer to respective framing manuals for further information on fixed light limitations and framing systems.

AGS 50 Series Awning and Casement Windows

Application: High performance window that can be fabricated into a number of different frame types for use in a wide variety of commercial and architectural applications.

Hardware: Available in a range of stays and operated with chainwinders or cam handles. Electronic operator available.

Screen: Flyscreen integrated into the frame.

Compatible product range: 300, 325, 400, 425, 600, 601, 625 Narrowline suites, 419, 429, 619, 629, 1029 Flushline suites..

Description: Single or double glazed awning and casement windows installed either as an operable awning or casement sash.

Maximum panel size and weight:

- Awning window:
 - . Height: 1800 mm.
 - . Width: 1500 mm.
 - . Weight: 60 kg.
- Integral hinged awning window:
 - . Height: 1800 mm.
 - . Width: 1500 mm.
 - . Weight: 60 kg.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 900 mm.
 - . Weight: 40 kg.
- Jockey sash:
 - . Height: 1500 mm.
 - . Width: 700 mm.
 - . Weight (on 3 jockey hinges): 15 kg.

AGS Euro Awning and Casement Windows

Application: European designed components and hardware to improve functionality and adjustability for use in most commercial and architectural applications. Ideal for high wind design pressure applications.

Hardware: Options for continuous hinge or stay and operated with chainwinders or cam handles, multiple and adjustable locking points. Electronic operator available.

Screen: Screening system integrated into the frame.

Compatible product range: 300, 325, 400, 425, 600, 601, 625 Narrowline suites, 419, 429, 619, 629, 1029 Flushline suites.

Description: Single or double glazed awning and casement windows that can be installed either in standard or high performance configurations using a subframe system.

Maximum panel size and weight:

- Awning window:
 - . Height: 1800 mm.
 - . Width: 1500 mm.
 - . Weight: 60 kg.
- Casement window:
 - . Height: 1800 mm.
 - . Width: 900 mm.
 - . Weight: 40 kg.
- Integral hinged awning window:
 - . Height: 2100 mm.
 - . Width: 1800 mm.
 - . Weight: 60 kg.

- Integral hinged casement window:
 - . Height: 2100 mm.
 - . Width: 1200 mm.
 - . Weight: 60 kg.

AGS Euro Tilt and Turn Window

Application: Hinged from the bottom, the sash opens to the inside for ventilation and from the side for cleaning access. Ideal for multi-story apartments or hotel complexes.

Hardware: Multiple locking points available and operable from a single handle.

Screen: Screening system integrated into the frame.

Compatible product range: 300, 325, 400, 425, 600, 601, 625 Narrowline suites, 419, 429, 619, 629, 1029 Flushline suites.

Description: Single or double glazed tilt and turn windows installed into commercial framing for standard or high performance configurations using a subframe system.

Maximum panel size and weight:

- Tilt and turn window:
 - . Height: 2400 mm.
 - . Width: 1300 mm.
 - . Weight: 80 kg.

AGS 380/480 Sliding Window

Application: Architectural and commercial applications.

Hardware: Adjustable rollers and height adjustable jamb and mullion latch options. Insect and security screening system integrated into the frame.

Compatible product range: 300 Narrowline, 400 Narrowline.

Description: Single or double glazed sliding window.

Framing section:

- 380 sliding window: 76 mm x 35 mm.
- 480 sliding window: 101.6 mm x 44 mm.

Maximum panel size and weight:

- 380 Sliding Window:
 - . Height: 1500 mm.
 - . Width: 1200 mm.
 - . Weight per sash (standard rollers): 12 kg.
 - . Weight per sash (heavy duty rollers): 42 kg.
- 480 Sliding Window:
 - . Height: 1500 mm.
 - . Width: 1200 mm.
 - . Weight per sash (standard rollers): 12 kg.
 - . Weight per sash (heavy duty rollers): 42 kg.

AGS 950 Sliding Window

Application: Where high structural, acoustic and thermal performance options are required.

Hardware: Adjustable rollers and twin point locking.

Screen: Insect/security screening system integrated into the frame.

Compatible product range: 400 Narrowline, 425 Narrowline Double Glazed, 419 Flushline.

Description: High performance single or double glazed sliding window.

Framing section: [complete/delete]

Select from the following:

- 101.6 mm x 60 mm.
- 100 mm x 80 mm.
- 150 mm x 80 mm.

Maximum panel size and weight:

- Height: 1800 mm.
- Width: 1200 mm.
- Weight per sash (standard rollers): 64 kg.

AGS 481 Double Hung Window

Application: Architectural and commercial applications.

Screen: Screening system integrated into the frame.

Compatible product range: 400 Narrowline.

Description: Single glazed or double glazed double hung window for integration into the AGS 400 Narrowline framing system.

Framing section: 101.6 mm x 44 mm.

Maximum double hung size and sash weight:

- Height: 2400 mm.
- Width: 1200 mm.
- Weight: 18 kg.

2.5 CAPRAL ALUMINIUM AGS COMMERCIAL DOORS

AGS 900 Sliding Door

Application: High performance door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty rollers and various locking options.

Screen: Plant-on or integrated screen options.

Compatible product range: 400, 425, 600, 601, 625 Narrowline suites, 419, 429, 619, 629, 1029 Flushline suites.

Description: Single or double glazed sliding door system with external and internal single, multi-stack, corner and cavity configurations.

Framing section: [complete/delete]

Select from the following:

- 100 mm or 150 mm x 44 mm sill.
- 100 mm or 150 mm x 50 mm sill.
- 100 mm or 150 mm x 80 mm HP sill.
- 150 mm and 100 mm Zero Threshold System (ZTS).
- AquaGo linear grate.

The Zero Threshold System (ZTS) flat sill allows for a continuous accessible path of travel to AS 1428.1 (2009). The NCC cites AS 1428.1 (2001) and AS 1428.1 (2009). The current edition is AS 1428.1 (2021).

Maximum panel size and weight:

- Height: 3000 mm.
- Width:
 - . Standard rails: 1750 mm.
 - . Heavy duty rails: 2500 mm.
- Weight:
 - . Standard roller: 160 kg.
 - . Heavy duty roller: 250 kg.

AGS 996 Artisan Folding Door

Application: Commercial or architectural. Incorporates a technologically advanced folding door system.

Hardware: Easy to adjust hardware including AGS SmartHinge and AGS Smart Groove technology for superior fabrication.

Compatible product range: 400 Series, 425 Series, 419, 429 Series.

Description: Single or double glazed, top hung track system folding door with open in, open out and corner entry configurations.

Framing section: [complete/delete]

Select from the following:

- Channel sill.

- 101.6 mm x 29 mm flat sill.
- 101.6 mm x 45 mm standard sill.
- 101.6 mm x 57 mm high performance sill.

Maximum panel size and weight:

- Height:
 - . On 3 hinges: 2500 mm.
 - . On 4 hinges: 2500 mm to 3000 mm.
- Width: 1000 mm.
- Weight: 100 kg.

AGS 215 36 mm Hinged Door

Application: Commercial or architectural.

Hardware: Corner spigots, and optional multi-point locks.

Compatible product range: All commercial framing systems.

Description: Single glazed hinged door for integration with Capral Aluminium framing system.

Framing section:

- Stiles: 36 mm deep x 91 mm wide.
- Rails: 101 mm high.

Maximum panel size and weight:

- Height: 2700 mm.
- Width: 1200 mm.
- Weight (on 4 hinges): Up to 100 kg.

AGS 225 46 mm Commercial Door

Application: Commercial or architectural.

Hardware: Corner spigots, and optional multi-point locks.

Compatible product range: All commercial framing systems.

Description: Single and double glazed hinged or sliding shopfront door for integration with Capral Aluminium framing system.

Framing section:

- Stiles: 46 mm deep x 83 mm and 131 mm wide.
- Rails: 87 mm and 110 mm high.

Maximum panel size and weight: Hinged and pivot:

- Height: 3000 mm.
- Width: 1200 mm.
- Weight: Up to 100 kg.

Maximum panel size and weight: Sliding:

- Height: 2700 mm.
- Width: 1800 mm.
- Weight: Up to 300 kg.

2.6 CAPRAL ALUMINIUM FUTURELINE THERMAL BREAK FRAMING SYSTEMS

Application: Most commercial and architectural applications requiring an improved level of thermal efficiency. CAPRAL ALUMINIUM Futureline thermal break framing incorporates single bar multi-hollow and double bar polyamide strips in its framing system to deliver excellent levels of thermal insulation.

Futureline 425TB Fixed Light Frame

Compatible product range: Futureline Hinged Door, Futureline Awning/Casement Window, Futureline Sliding Window, Futureline Vertical and Horizontal Sliding Window, Futureline Sliding Door, Futureline Lift & Slide Door.

Description: Thermally broken double glazed centre pocket framing system.

Framing section: 100 mm x 62 mm.

Maximum height: 4000 mm.

Maximum width: 2400 mm.

Futureline 429TB 100 mm Flush Fixed Light Frame

Compatible product range: Futureline Hinged Door, Futureline Awning/Casement Window, Futureline Sliding Window, Futureline Vertical and Horizontal Sliding Window, Futureline Sliding Door, Futureline Lift & Slide Door.

Description: Thermally broken double glazed forward positioned glazing pocket system for flush external finish.

Framing section: 100 mm x 62 mm.

Maximum height: 4800 mm.

Maximum width: 2400 mm.

Futureline 629TB 150 mm Flush Fixed Light Frame

Compatible product range: Futureline Hinged Door, Futureline Awning/Casement Window, Futureline Sliding Window, Futureline Vertical and Horizontal Sliding Window, Futureline Sliding Door, Futureline Lift & Slide Door.

Description: Thermally broken double glazed forward positioned glazing pocket system for flush external finish.

Framing section: 150 mm x 62 mm.

Maximum height: 5400 mm.

Maximum width: 2400 mm.

2.7 CAPRAL ALUMINIUM FUTURELINE THERMAL BREAK WINDOW

Futureline 992TB Awning/Casement Window

Application: Where a high level of thermal performance is required.

Hardware: Sash handles or sash operator options. Electronic operator available.

Screen: Screening system integrated into the frame.

Compatible product range: Futureline 425TB, 429TB and 629TB Framing Suite.

Description: Thermally broken double glazed awning and casement windows for integration with Capral Aluminium Futureline framing systems.

Maximum panel size and weight:

- Awning window:
 - . Height: 1800 mm.
 - . Width: 1500 mm.
 - . Weight: 60 kg.
- Casement window:
 - . Height: 1800 mm.
 - . Width: 900 mm.
 - . Weight: 40 kg.

Futureline 991TB Vertical and 990TB Horizontal Sliding Window

Application: Where a high level of thermal performance is required.

Hardware: Adjustable rollers, multi-point locking and lever handle.

Compatible product range: Futureline 425TB, 429TB and 629TB Framing System, Futureline Hinged Doors.

Description: Sashless sliding windows for integration with Capral Aluminium Futureline framing systems.

Maximum panel size and weight:

- Horizontal Slider:
 - . Height: min 250 mm.
 - . Width: 4500 mm.
 - . Weight: 60 kg.
- Vertical Slider:
 - . Height: 3000 mm.
 - . Width: 1200 mm.

2.8 CAPRAL ALUMINIUM FUTURELINE THERMAL BREAK DOOR

Futureline 997TB Hinged Door

Application: Where a high level of thermal performance is required.

Hardware: Thermally isolated hinges, heavy duty corner spigots and optional multi-point locks.

Compatible product range: Futureline 425TB, 429TB and 629TB Framing System.

Description: Thermally broken double glazed hinged door for integration with CAPRAL ALUMINIUM Futureline framing systems.

Framing section:

- Stiles: 46 mm deep x 85 mm wide.
- Rails: 89 mm and 120 mm high.

Maximum panel size and weight:

- Height: 2700 mm.
- Width: 1000 mm.
- Weight: 115 kg.

Futureline 994TB Sliding Door

Application: Where a high level of thermal performance is required.

Hardware: Sliding roller or lift & slide drive gear, multi-point locks, lever handles.

Compatible product range: Futureline 425TB, 429TB and 629TB Framing System.

Description: Thermally broken double glazed sliding door for integration with Capral Aluminium Futureline framing systems.

Framing section:

- Stiles: 45 mm deep x 102 mm wide.
- Rails: 102 mm high.

Maximum panel size and weight:

- Height: 3000 mm.
- Width: 2400 mm.
- Weight (sliding): 200 kg.
- Weight (lift & slide): 300 kg.

2.9 CAPRAL ALUMINIUM URBAN RESIDENTIAL WINDOWS

Application: Standard range residential windows for new residential construction, window replacement and renovation.

Urban 280 Sliding Window

Hardware: Jamb and mullion latch options. Adaptors can be incorporated for double glazing.

Screen: Integrated insect and security screening options.

Compatible product: Urban residential range.

Description: Single or double glazed sliding window for integration with CAPRAL ALUMINIUM Urban awning, casement and double hung windows.

Framing section: [complete/delete]

Select from the following:

- Standard frame depth: 47 mm.
- Wide frame depth: 79 mm.

Maximum panel size and weight:

- Height: 1500 mm.
- Width: 1200 mm.
- Weight per sash (standard rollers): 12 kg.
- Weight per sash (heavy duty rollers): 42 kg.

Urban 281 Double Hung Window

Hardware: Full width integrated finger pulls on the upper and lower sashes. Standard and key lockable cam latches available.

Screen: Integrated insect and security screening options.

Compatible product: Urban residential range.

Description: Single glazed double hung window for integration with Capral Aluminium Urban sliding, casement and awning windows.

Framing section: [complete/delete]

Select from the following:

- Standard frame depth: 48.5 mm.
- Wide frame depth: 95 mm.

Maximum panel size and weight:

- Double hung:
 - . Height: 2400 mm.
 - . Width: 1200 mm.
 - . Sash weight: 18 kg.
- Fixed lights:
 - . Height: 2400 mm.
 - . Width: 1200 mm.

Urban 282 Awning and Casement Windows

Hardware: Continuous hook hinging system and either a chain winder or sash catches. Electronic operator available for 582W frame.

Screen: Integrated insect and security screening options.

Compatible product: Urban residential range.

Description: Single or double glazed awning and casement window with provision for side and top lights for integration with CAPRAL ALUMINIUM Urban sliding, casement and double hung windows.

Framing section: [complete/delete]

Select from the following:

- 582 frame depth: 48.5 mm.
- Wide frame depth: 95 mm.

Maximum panel size and weight:

- Awning window:
 - . Height: 1550 mm.
 - . Width: 1210 mm.
 - . Weight: 43 kg.
- Hinged head awning window:
 - . Height: 1800 mm.
 - . Width: 1800 mm.
 - . Weight: 60 kg.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 750 mm.
 - . Weight: 40 kg.
- Fixed lights:
 - . Height: 2400 mm.
 - . Width: 1800 mm.

2.10 CAPRAL ALUMINIUM URBAN RESIDENTIAL DOORS

Urban 284 Sliding Door

Application: Requirement for low profile sills.

Hardware: Standard and mortice lock options.

Screen: Integrated insect and security screening options.

Compatible product: Urban residential range.

Description: Single or double glazed sliding door with standard, multi-stack and inside and outside corner configurations with provisions for side lights.

Framing section (depth and height): [complete/delete]

Select from either of the following:

- 101.6 mm x 50 mm standard sill.
- 101.6 mm x 19 mm low profile sill.

Maximum panel size and weight:

- Height: 2700 mm.
- Width:
 - . Standard rail: 1200 mm.
 - . Heavy duty rail: 1500 mm.
- Weight:
 - . Standard roller: 50 kg.
 - . Heavy duty roller: 160 kg.

Maximum fixed light size:

- Height: 2700 mm.
- Width: 1200 mm.

Maximum frame width with highlight window: 3000 mm.

2.11 CAPRAL ALUMINIUM URBAN PLUS RESIDENTIAL WINDOWS

High performance residential windows with the strength and performance required in high-end architectural applications. Urban Plus allows for large semi-commercial configurations whilst still delivering a residential aesthetic not possible with all commercial systems.

Hardware: Lockable and non-lockable hardware options.

Screen: Integrated insect and security screening options.

Urban Plus 390 Sliding Window

Compatible product range: Urban Plus 391 Double Hung Window, Urban Plus 392 Awning/Casement Window, Urban Plus 393 Louvre Window, Urban Plus 394 Sliding Door, Urban Plus 395 Folding Window, Urban Plus 396 Folding Door, Urban Plus 397 Hinged Door.

Description: Single or double glazed sliding window with XO, XX, OXXO, XOx, OXX and OXXXXO configurations and provisions for side, high and top lights.

Framing depth: [complete/delete]

Select from the following:

- 76 mm.
- 100 mm.

Maximum panel size and weight:

- Sliding window:
 - . Height: 1800 mm.
 - . Width: 1200 mm.
 - . Weight: 60 kg.
- Framed fixed light:
 - . Height: 2400 mm.
 - . Width: 1450 mm.

Urban Plus 391 Double Hung Window

Compatible product range: Urban Plus 390 Sliding Window, Urban Plus 392 Awning/Casement Window, Urban Plus 393 Louvre Window, Urban Plus 394 Sliding Door, Urban Plus 395 Folding Window, Urban Plus 396 Folding Door, Urban Plus 397 Hinged Door.

Description: Single or double glazed double hung window with DH and DH.DH configurations with provisions for side and top lights.

Frame depth: 76 mm.

Maximum sash size and weight:

- Height: 1200 mm.
- Width: 1200 mm.
- Weight: 20.4 kg.

Maximum framed fixed light size:

- Height: 2400 mm.
- Width: 1450 mm.

Urban Plus 392 Awning/Casement Window

Compatible product: Urban Plus range.

Description: Single or double glazed high performance awning and casement window.

Frame depth: 76 mm.

Maximum panel size:

- Awning window:
 - . Tall awnings: 2100 x 900 mm.
 - . Wide awnings: 900 x 2100 mm.
 - . Maximum area: 1.89 m².
- Casement window:
 - . Height: 2400 mm.
 - . Width: 1150 mm.
 - . Weight: 44 kg.
- Framed fixed light:
 - . Height: 2400 mm.
 - . Width: 1450 mm.

Urban Plus 393 Louvre Window

Compatible product range: Urban Plus Range

Description: Single glazed framing system that incorporates operable louvres galleries.

Frame depth: 125 mm.

Maximum size louvre opening:

- Height: 2100 mm.
- Width: 900 mm.

Louvre gallery supplier limitations must be taken into consideration.

Maximum framed fixed light size:

- Height: 2700 mm.
- Width: 1500 mm.

Louvres: Profiled extruded aluminium louvre blades.

Louvre blade profile: [complete/delete]

Select from: 152 mm curved, 102 mm curved, 152 mm flat or 102 mm flat.

Urban Plus 395 Folding Window

Compatible product range: Urban Plus Range.

Description: Single or double glazed, bottom roller folding window with open in, open out options with provisions for low, side and high lights.

Frame depth: 76 mm.

Maximum panel size:

- Height: 2100 mm.
- Width: 900 mm.
- Weight: 40 kg.

2.12 CAPRAL ALUMINIUM URBAN PLUS RESIDENTIAL DOORS

Urban Plus 394 Sliding Door

High performance residential doors with the strength and performance required in high-end architectural applications. It allows for large semi-commercial configurations whilst still delivering a residential aesthetic not possible with all commercial systems.

Hardware: High quality double bogie rollers for smooth panel operation. A range of rounded interlock options achieve door heights of up to 2700 mm.

Screen: Integrated insect and security screening options.

Compatible product: Urban Plus range.

Description: Single or double glazed sliding door with single, multi-stack and cavity configurations with provision for side and top lights.

Frame depth: 125 mm.

Maximum panel size and weight:

- Height: 2700 mm.
- Width: 1500 mm.
- Weight: 160 kg.

Maximum framed fixed light size:

- Height: 2400 mm.
- Width: 1500 mm.

Maximum frame width with highlight window: 3000 mm.

Urban Plus 396 Folding Door

Compatible product range: Urban Plus range.

Description: Single or double glazed, bottom roller folding door with open in, open out options with provisions for side and high lights.

Low profile threshold sill option is available.

Frame depth: 76 mm.

Maximum panel size

- Height: 2700 mm.
- Width: 900 mm.
- Weight: 40 kg.

Urban Plus 397 Hinged Door

Application: Commercial or architectural.

Hardware: Corner spigots, and optional multi-point locks.

Compatible product range: All commercial framing systems.

Description: Single and double glazed hinged door for integration with Capral Aluminium Urban Plus framing system.

Frame depth: 125 mm.

Panel section:

- Stiles: 46 mm deep x 83 mm and 131 mm wide.
- Rails: 110 mm or 140 mm high.

Maximum panel size and weight: Hinged and pivot:

- Height: 3000 mm.
- Width: 1200 mm.
- Weight: Up to 100 kg.

2.13 SCHÜCO ALUMINIUM SLIDING SYSTEMS

ASS 39 PD.NI Panoramic Door

Application: High performance door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty rollers and various locking options.

Screen: Plant-on or integrated screen options.

Compatible product range: 629 Flushline, Schüco FWS 35 PD, Schüco FWS 60.

Description: Single or double glazed sliding door system with external and internal single, multi-stack, corner and cavity configurations.

Framing section: 107 mm and 159 mm x flush sill.

Maximum panel size and weight:

- Height: 3300 mm.
- Width: 2000 mm.
- Weight: 300 kg.

ASE 39 PD.NI HD Panoramic Door

Application: High performance door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty rollers and various locking options.

Screen: Plant-on or integrated screen options.

Compatible product range: 629 Flushline, Schüco FWS 35 PD, Schüco FWS 60.

Description: Single or double glazed sliding door system with external and internal single, multi-stack, corner and cavity configurations.

Framing section: 107 mm and 159 mm x flush sill.

Maximum panel size and weight:

- Height: 3300 mm.
- Width: 2200 mm.
- Weight: 300 kg.

ASS 50 Sliding Door

Application: Thermally broken Lift & Slide door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty rollers and various locking options.

Screen: Plant-on or integrated screen options.

Compatible product range: Schüco FWS 35 PD, Schüco FWS 60.

Description: Thermally broken double glazed sliding door for integration with Schüco framing systems.

Framing section: 120 mm and 185 mm x 38 mm sill.

Maximum panel size and weight:

- Height: 3000 mm.
- Width: 3000 mm.
- Weight: 400 kg.

ASS 70 FD Folding Door

Application: Thermally broken bottom roller folding door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty rollers and various locking options.

Screen: Plant-on screen options.

Compatible product range: Schüco FWS 35 PD, Schüco FWS 60.

Description: Thermally broken double glazed bottom roller folding door for integration with Schüco framing systems.

Framing section: 80 mm x 60 mm sill.

Maximum panel size and weight:

- Height: 3000 mm.
- Width: 1200 mm.
- Weight: 100 kg.

2.14 SCHÜCO ALUMINIUM DOOR SYSTEMS

ADS 65 HD Hinged Door

Application: Thermally broken door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty hinges and various locking options.

Screen: Plant-on screen options.

Compatible product range: Schüco AWS 65, Schüco AWS 75.SI.

Description: Thermally broken double glazed hinged door for integration with Schüco framing systems.

Framing section: [complete/delete]

Select from the following:

- 65 mm and 115 mm and 140 mm x 20 mm sill.
- 65 mm and 115 mm and 140 mm x flush sill.

Maximum panel size and weight:

- Height: 3000 mm.
- Width: 1400 mm.
- Weight: 200 kg.

ADS 75 HD.HI Hinged Door

Application: Thermally broken door system suited to most commercial or architectural applications. Extended product specification limitations for large configurations.

Hardware: Heavy duty hinges and various locking options.

Screen: Plant-on screen options.

Compatible product range: Schüco AWS 75.SI.

Description: Thermally broken double glazed hinged door for integration with Schüco framing systems.

Framing section: 125 mm and 150 mm x 26 mm sill.

Maximum panel size and weight:

- Height: 3000 mm.
- Width: 1400 mm.
- Weight: 200 kg.

2.15 SCHÜCO ALUMINIUM WINDOW SYSTEMS

AWS 65 Framing suite

Description: Thermally broken double glazed forward positioned glazing pocket system for flush external finish.

Framing section:

- Maximum height: 4800 mm.
- Maximum width: 2400 mm.

Tilt and turn window:

- Height: 2500 mm.
- Width: 1700 mm.
- Weight: 160 kg.

AWS 75.SI+ Framing suite

Description: Super insulated thermally broken double glazed forward positioned glazing pocket system for flush external finish.

Framing section:

- Maximum height: 4800 mm.
- Maximum width: 2400 mm.

Tilt and turn window:

- Height: 2500 mm.
- Width: 1700 mm.
- Weight: 200 kg.

AWS 114 PAF Parallel opening window

Description: Thermally broken double glazed parallel opening window for integration with Schüco framing systems.

Panel size limitations:

- Maximum height: 3600 mm.
- Maximum width: 2200 mm.
- Weight: 250 kg.

2.16 GLAZING**Performance**

Glass: Free from defects that detract from appearance or interfere with performance under normal conditions of use.

Plastic glazing: Free from surface abrasions and warranted by the manufacturer for 10 years against yellowing or other colour change, loss of strength and impact resistance, and general deterioration.

Heat soaking

Requirement: Heat soak glass to AS 1288 (2021) clause 3.8.

Standard: To EN 14179-1 (2016).

Marking: To EN 14179-1 (2016) or certified by the manufacturer to AS 1288 (2021) clause 3.8.2.

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.

AS 1288 (2021) clause 3.8.2 requires all monolithic toughened and heat-strengthened glass (with a surface compression greater than 52 MPa) to be heat soaked. It also includes exemptions.

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.

Safety glazing materials

Standard: To AS/NZS 2208 (1996).

AS/NZS 2208 (1996) includes toughened, laminated, wired and organic-coated glass, and safety plastic glazing sheets. The required grade (A or B) is specified in AS 1288 (2021) Section 5 for each application.

See AS/NZS 2208 (1996) Section 2 for dimensional specifications.

Roller wave distortion (not in the standard) is a consequence of heat treating glass and may be more noticeable in some applications. Consult the manufacturer for more information on tolerances.

Type: Grade A to AS 1288 (2021).

Certification: Required.

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

Marking: To AS/NZS 2208 (1996) clause 1.7.

Inconspicuous permanent labelling of tempered and reflective-coated glass for use in curtain walls is recommended, to identify inner and outer surfaces, strength grades, manufacturer, processor and standard.

Heat-strengthened glass

Requirement: Heat-strengthened annealed glass that requires extra strength and thermal resistance.

Standard: To ASTM C1048 (2018).

Heat strengthening increases the strength of ordinary annealed glass. It is not a substitute for toughened glass and is not a safety glass.

Ceramic-coated glass

Requirement: Heat-strengthened or toughened glass with a coloured ceramic coating fused to and made an integral part of the surface to ASTM C1048 (2018), Condition B.

Opacified glass

Requirement: Glass with an opacifier permanently bonded to the inner face.

Insulating glass units (IGUs)

Requirement: Provide insulating glass units, as documented.

Document requirements in the **Insulating glass units (IGUs) schedule** or detail on drawings.

Manufacture, testing and installation: To AS 4666 (2012).

2.17 GLAZING MATERIALS

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.

Compounds, sealants and tapes

Glazing tapes: To AAMA 800 (2016) specifications 804.3, 806.3, or 807.3, as applicable.

If an AGWA Glass Compliance Certificate or Window Compliance Certificate is not nominated in SELECTIONS, change this *Optional* style text to *Normal* style text to describe the quality standards for glazing tapes, glazing compounds, narrow joint sealer, exterior perimeter sealing compound, non-drying sealant and expanded cellular glazing tape.

AAMA 800 (2016) glazing tape definitions:

- 804.3 - Designed for use in less severe back bedding and drop-in glazing applications such as residential and light commercial fenestrations.
- 806.3 - Designed for use in high performance commercial fenestrations in which the tape is subjected to continuous pressure exerted from gaskets or pressure generating stop designs.
- 807.3 - Designed for use in commercial fenestrations in which the tape is not subjected to continuous pressure from gaskets or pressure generating stop designs. This tape may be used in applications described for 804.3 tapes.

Glazing compounds: To AAMA 800 (2016) specifications 802.3 (Types I or II), or 805.2, as applicable.

AAMA 800 (2016) glazing compounds definitions:

- 802.3 (Type I and II): Ductile back bedding compound intended to remain ductile and to permit movement without loss of bond.
- 805.2 (Type A and C): Bonding type bedding compound that cure relatively hard and stiff and to permit limited movement without loss of bond.

Narrow joint seam sealer: To AAMA 800 (2016) specification 803.3.

AAMA 800 (2016) narrow joint seam sealer definitions:

- 803.3 (Type I): Non-sag narrow joint sealers that are elastic or ductile compounds with maximum slump of 2.5 mm.
- 803.3 (Type II): Self-levelling narrow joint sealers that are elastic or ductile compounds with maximum slump of 2.5 mm.

Exterior perimeter sealing compound: To AAMA 800 (2016) specification 808.3.

AAMA 800 (2016) exterior perimeter sealing compound definitions:

- 808.3: Perimeter sealing compound intended to remain elastic or ductile and to permit movement without loss of bond.

Non-drying sealant: To AAMA 800 (2016) specification 809.2.

AAMA 800 (2016) non-drying sealant definitions:

- 809.2: Non-drying sealant intended to remain pliable and tacky for use in sealing hidden joints.

Expanded cellular glazing tape: To AAMA 800 (2016) specification 810.1.

AAMA 800 (2016) expanded cellular glazing tape definitions:

- 810.1 (Type I): Tape intended as primary seal to prevent air and water leakage.
- 810.1 (Type II): Tape intended as secondary seal where tape used in combination with a full bead of wet sealant to prevent air and water leakage.

Jointing materials

Requirement: 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).

Elastomeric sealants schedule

Sealant type	Material	Location or function

Sealant type	Material	Location or function

If the nature of the project requires a schedule of this nature, obtain the advice of the nominated fabricator or delete, as appropriate.

Very high bond adhesive tape schedule

Tape type	Material	Location or function	Dimensions

If the nature of the project requires a schedule of this nature, obtain the advice of the nominated fabricator, or delete as appropriate.

Primer

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

Control joints

Depth of elastomeric sealant: One half the joint width or 6 mm, whichever is the greater.

Foamed materials (in compressible fillers and backing rods): Closed cell or impregnated types that do not absorb water.

Bond breaking: Provide backing rods, and other back-up materials for sealants, that do not adhere to the sealant.

2.18 INTEGRAL BLINDS

General

Requirement: Provide integral blinds, as documented.

Document requirements in the **Integral blind schedule** or detail on drawings.

2.19 SCREENS

General

Requirement: Provide screens, as documented.

Document requirements in the **Screen schedule** or detail on drawings.

Fixed screens

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

Hinged screens

General: Screens hinged at the top to give access to opening sash.

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.

Sliding screens

General: Screens that are not part of the window frame, with matching aluminium head guide, sill runner, and frame stile sections.

Hardware: Nylon slide runners and finger pull handle. Provide pile strip closers against sash where necessary to close gaps.

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.

2.20 SECURITY SCREEN DOORS AND SECURITY WINDOW GRILLES

General

Requirement: Proprietary metal security grilles, or operable screen and frame, 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).

Document requirements in the **Security screen doors and security window grille schedule** or detail on drawings.

2.21 AMPLIMESH SECURAMESH WINDOW AND DOOR

General

Description: Provides visual deterrent and security screen door and window grille protection.

Material: Grade 6060 Aluminium, temper T5.

Thickness: 7 mm.

Nominal aperture size: 83 mm x 68 mm.

Maximum panel size:

- Length: 3500 mm.
- Width: 1200 mm.

2.22 AMPLIMESH SUPASCREEN® WINDOW AND DOOR

Application: Maximises strength and durability, whilst providing a welcoming entrance to your home. SupaScreen® is the latest innovation in security products technology. It is retained using a unique patented pressure process that eliminates the need for screws, rivets, pins or snap ins, so dissimilar metal surfaces do not come into contact with each other, minimising the possibility of corrosion.

General

Material: Type 316 Marine grade stainless steel.

Wire thickness: 0.80 mm.

Nominal aperture size: 1.5 mm x 1.5 mm.

Amplimesh Folding Door

Application: Retrofitting existing folding doors or as stand-alone securing large openings.

Hardware: Flush bolt hardware for secure closure and concealed fixings to enhance appearance.

Maximum panel size and weight:

- Height: 2400 mm.
- Width: 850 mm.
- Weight: 20 kg.

Maximum frame width: 6500 mm.

Hinge requirements for the following door heights:

- ≤ 2100 mm: 3 hinges.
- ≥ 2100 mm: 4 hinges.

Amplimesh SupaScape Window

Application: Residential and single storey light commercial applications, mainly in brick veneer, weatherboard or cavity brick construction.

Maximum frame size:

- Hinged window:
 - . Height: 1500 mm.
 - . Width: 900 mm.
- Double slider window:
 - . Height: 1500 mm.
 - . Width: 1800 mm.

2.23 AMPLIMESH INTRUDAGUARD® SECURITY SCREENS

Application: Intrudaguard® security screen is retained using a unique patented pressure process that eliminates the need for screws, rivets, pins or snap ins, so dissimilar metal surfaces do not come into contact with each other, minimising the possibility of corrosion.

General

Material: 5052 Marine grade aluminium sheet.

Thickness: 1.20 mm.

Perforated hole size: 2 mm.

Maximum sheet size:

- Length: 3000 mm.
- Width: 1500 mm.

2.24 ALUMINIUM FRAME FINISHES

Delete finish not required.

Powder coatings

Standard: To AS 3715 (2002).

Product: [complete/delete]

Product: e.g. Dulux or AkzoNobel Interpon D 610.

Type: [complete/delete]

AS 3715 (2002) sets minimum standards for various performance criteria. Consult with manufacturers if variations are proposed.

e.g. Dulux supply the following types:

- Duralloy is available as standard by a number of aluminium window suppliers.
- Duratec is available upon request: Select for high rise where cleaning may be infrequent or where longer warranties are required.
- Fluoroset is available upon request: Select for installations in a salt environment or where longer warranties are required.

Edit as appropriate. Note high performance powders can require extended lead times.

Anodised

Standard: To AS 1231 (2000).

Thickness:

- Internal: 15 microns.
- External: 20 microns.

25 micron thick anodising, recommended for severe conditions, can be made available by some suppliers upon request.

2.25 OTHER MATERIAL FRAME FINISHES

AS 2047 (2014) includes other types of window material, including reinforced resinous materials, ferrous and non-ferrous alloys, composite materials, combinations of materials, synthetic materials.

Finish

Standard: To AS 2047 (2014) clause 3.4.1.4.

2.26 ANCILLARY COMPONENTS AND FITTINGS

Glazing adaptors

Application: Provide glazing options for existing or new structures including steelwork, timber or aluminium. Glazing adaptors have limited structural capabilities and rely on being fixed to a suitable structural member. Document requirements in the **Glazing adaptor schedule** or detail on drawings.

Glazing adaptor glazing capacity:

- St Kilda plant-on adaptor: 6 mm to 36 mm.
- St Lucia plant-on adaptor: 4 mm to 28 mm.
- Frameless glazing channels:
 - . 24 mm: 4 mm to 12 mm.
 - . 33 mm: 6 mm to 12 mm.
- General adaptors:

- . 31 mm: 6 mm to 11 mm.
- . 35 mm: 4 mm to 26 mm.
- . 50 mm: 6 mm to 41 mm.

Trim

General: Provide trim, shadow angles and architraves, as documented.

Document requirements in the **Trim schedule** or detail on drawings.

Extruded gaskets and seals

General: Provide seals, as documented.

Document requirements in the **Window and glazed door seal schedule** or detail on drawings.

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).

Nylon brush seals

General: Dense nylon bristles locked into holding strips and fixed in a groove in the edge of the door or in purpose-made anodised aluminium holders fixed to the door or frame to the manufacturer's recommendations.

Pile weatherstrips

General: Provide weatherstrips, as documented.

Document in the **Pile weatherstrips schedule** or detail on drawings.

Standard: To AAMA 701/702 (2023).

AAMA 701/702 (2023) is a guide to selecting pile weatherstrip and weatherseals used in windows and doors. It defines requirements to restrict air and water infiltration. See BCA (2022) J5D5 and BCA (2022) H6D2(1)(b)(iii) for the sealing of windows and doors.

AS 3959 (2018) has requirements for door and window seals in bushfire zones. Testing of seals to AS 1530.2 (1993) is required in some BAL zones.

Material: Pile and backing or equivalent polypropylene, low friction silicone treated, ultraviolet stabilised, fixed to the frame to the manufacturer's recommendations.

Finned type: A pile weatherseal with a central polypropylene fin bonded into the centre of the backing rod and raised above the pile level.

Weather bars

General: A weather bar for hinged external doors, located under the centres of closed doors.

Document in the **Weather bars schedule**, or detail on drawings. Weather bars and threshold plates are used at the junction between sill and door leaf or in place of a sill. Weather bars have been traditionally associated with purpose-made joinery. Where sill profiles, timber agencies or proprietary profiles do not allow for the inclusion of a weather bar; document a proprietary seal or threshold section. As a secondary role the weather bar can serve to protect the sill rebate from damage in high traffic areas.

If used as a single item without a sill and acting as a floor finish divider, document under the appropriate worksection (e.g. 0526 Terrazzo precast, 0612 Cementitious toppings, 0613 Terrazzo in situ or 0631 Ceramic tiling). The profile, material and method of fixing to the building fabric require clearance from the edges of the building fabric e.g. concrete slabs. For embedded weather bars, document corrosion-resistant materials. The NCC covers thresholds in BCA (2022) D3D16.

2.27 HARDWARE**Hardware documented generically**

General: Provide hardware of sufficient strength and quality to perform its function, appropriate to the intended conditions of use, compatible with associated hardware, and fabricated with fixed parts firmly joined.

General provisions of this kind would apply mainly as default requirements for items documented only in generic terms without particular prescriptive or performance requirements. Provision is made in SELECTIONS to document proprietary items with inherent quality or performance characteristics matching your requirements.

Window locks and latches

Standard: To AS 4145.2 (2008).

Document the required performance in the **Window locks and latches performance schedule**.

Window catches: Provide 2 catches per sash to manually latched awning or hopper sashes over 1000 mm wide.

Sash balances

Requirement: Match the spring strength of the balances to the sash weight they support.

Sash operators

Requirement: Provide sash operators, as documented.

2.28 KEYING

Contractor's keys

Master key systems: Do not use any key under a master key system.

As construction cylinders are replaced at practical completion, they may be used for many projects and therefore are often at no extra cost. A construction or project key relies on a mechanism within the cylinder to be released to convert it from being activated by the project key to its final use key. This facility is at extra cost and reduces the system's keying capacity.

Identification

Labelling: Supply each key with a purpose-made plastic or stamped metal label legibly marked to identify the key, attached to the key by a metal ring.

Key material

Pin tumbler locks: Nickel alloy, not brass.

Lever locks: Malleable cast iron or mild steel.

Keying system

Requirement: Keying system, as documented.

Document in the **Key codes schedule**.

Coding of locks: If window locks are included in building key code groups, provide cylinder or pin tumbler locks coded to match.

Number of keys table

Code	Key type	Minimum number of keys
KD	Locks keyed to differ	2 for each lock
KA#	Locks keyed alike:	
	2 locks in code group	4
	3 to 10 locks in code group	6
	11 to 40 locks in code group	10
	41 and over locks in code group	1 for every 4 locks or part thereof

KA#: Refer to the code groups, e.g. KA1, KA2 in the **Key codes schedule**.

The Australian standard for a rating system for locksets in doors and windows, AS 4145.1 (2008), provides for ten levels of keying security, K1 to K10.

Group and master keying requirements need to be coordinated with *0455 Door hardware* by reference or by replacing this **KEYING** clause with the **KEYING** clause in *0455 Door hardware*, which includes the master keying schedules.

3 EXECUTION

3.1 GLAZING PROCESSING

General

Processing: Perform required processes on glazing, including cutting, obscuring, silvering and bending. Form necessary holes, including for fixings, equipment, access openings and speaking holes. Process exposed glass edges to a finish not inferior to ground arised.

Glass processing includes edgework, holes and cut-outs. Do not cut, work, or permanently mark glass after toughening or heat strengthening. See AS/NZS 4668 (2000) Appendix B for different edge finish requirements and AGWA *A guide to window and door selection (2020)* for specific applications. The degree of edgework documented has implications for glass cutting and tolerances.

3.2 INSTALLATION

General

Requirement: Install windows and glazed doors 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.

Glazing

If the glazing system or method is not covered by the installation provisions of AS 1288 (2021), (e.g. patent glazing, structural adhesive glazing or installation of IGUs), edit to suit the recommendations of the system and materials manufacturer.

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 glazing materials.
- No transfer of building movements to the glazing.
- Watertight and airtight for external glazing.

Document particular installation methods and detailed performance testing requirements for water and airtightness.

Temporary marking: Use a method that does not damage the glazing. Remove marking only after certification and acceptance of the installation.

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

Frameless installations: Join the vertical edges of adjacent glass panels with silicone jointing compound.

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

Preglazing

Window assemblies and glazed doors: Supply inclusive of glazing, shop preglazed.

Weatherproofing

Flashing and weatherings: Install flashings, weather bars, threshold plates, 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

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

Fasteners: Conceal fasteners.

Fasteners and fastener spacing: Conform to the recommendations of the manufacturer.

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.

Show on the drawings. Coordinate with 0511 Lining and 0453 Doors and access panels; do not schedule the same items twice.

3.3 SECURITY SCREEN DOORS AND SECURITY WINDOW GRILLES

General

Installation: To AS 5040 (2003).

3.4 HARDWARE

Fasteners

Materials: Use materials compatible with the item being fixed and of sufficient strength, size and quality to perform their function.

- Concealed fasteners: Provide a corrosion-resistant finish.
- Exposed fasteners: Match exposed fasteners to the material being fixed.

Support: Provide appropriate back support (for example lock stiles, blocking, wall noggings and backing plates) for hardware fasteners.

- Hollow metal sections: Provide backing plates drilled and tapped for screw fixing, or provide rivet nuts with machine thread screws. Do not use self-tapping screws or pop rivets.

For corrosion resistance guidance, refer to 0171 General requirements and 0181 Adhesives, sealants and fasteners.

Proprietary window systems

Requirement: Provide the standard hardware and internal fixing points for personnel safety harness attachment, if required by and conforming to the governing regulations.

Operation

General: Make sure working parts are accurately fitted to smooth close bearings, without binding or sticking, free from rattle or excessive play, lubricated where appropriate.

Supply

Delivery: Deliver window hardware items, ready for installation, in individual complete sets for each window set, as follows:

- Clearly labelled with the intended location.
- In a separate dust and moisture proof package.
- Including the necessary templates, fixings and fixing instructions.

TESTING

0171 General requirements defines different tests in **INTERPRETATION**, **Definitions** and calls for an inspection and testing plan in **TESTING - GENERALLY, Inspection and testing plan**.

Fall prevention tests

Fall prevention tests of completed installation: 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).

If on-site fall prevention tests are required in addition to type tests, consider including this *Optional* style text by changing to *Normal* style text. Site testing is expensive.

3.5 COMPLETION

Hardware

Adjustment: Leave the hardware with working parts in working order, and clean, undamaged, properly adjusted, and lubricated where appropriate.

Keys

Contractor's keys: Immediately before the date for practical completion, replace cylinders to which the contractor has had key access during construction with new cylinders that exclude the contractor's keys.

Replacement of contractor's keys may be waived only if written approval is given to an alternative method of rendering the contractor's keys inoperative.

Keys: For locks keyed to differ and locks keyed alike, verify quantities against key records, and deliver to the contract administrator at practical completion.

Key codes: Submit the lock manufacturer's record of the key coding system showing each lock type, number and type of key supplied, key number for re-ordering, and name of supplier.

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, acidic 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 recommendations 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

Window and door assemblies: Provide the manufacturer's published product warranties.

Hardware: Provide the manufacturer'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.

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, consider changing 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**Window and glazed door performance schedule**

	A	B	C
Total system U-Value (W/m ² .K)			
Total system SHGC			
Airborne sound insulation			
Visible transmittance (T _{vis})			
Reflectance (%)			
WERS Energy rating%: Heating			

	A	B	C
WERS Energy rating%: Cooling			
AGWA Glass Compliance Certificate			
AGWA Window Compliance Certificate			
Water penetration resistance (Pa)			
Fire-resistance level (FRL)			
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 those 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.

Fire-resistance level (FRL): State the required level to AS 1530.4 (2014), delete or state Not applicable. See NATSPEC TECHnote DES 020 on fire behaviour of building materials and assemblies.

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.

Window locks and latches performance schedule

	A	B	C
Durability (D)			
Key security (K)			
Cylinder security (S _c)			
Physical security of locks (S)			
Physical security of locksets (S _L)			
Corrosion classification (C)			
Classification to AS 4145.1 (2008)			

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.

Durability rating (D): Select from D1 to D10. Refer to AS 4145.1 (2008) clause 3.3.

Keying security (K): Select from K1 to K10. Refer to AS 4145.1 (2008) clause 3.4.

Cylinder security (S_c): Select from Sc1 to Sc10. Refer to AS 4145.1 (2008) clause 3.5.

Physical security of locks (S): Select from S1 to S10. Refer to AS 4145.1 (2008) clause 3.6.
 Physical security of locksets (S_L): Select from SL1 to SL10. Refer to AS 4145.1 (2008) clause 3.7.
 Corrosion classification (C): Select from C1 to C10. Refer to AS 4145.1 (2008) clause 3.8. Refer to the documented project atmospheric corrosivity categories in *0171 General requirements*. See NATSPEC TECHnote DES 010 for information on atmospheric corrosivity classification.
 Classification to AS 4145.1 (2008): The classification is a combination of the designations for lockset security, lock security, durability, corrosion, key security and cylinder security, e.g. S_L4/D6/C6/K6/S_c4.

4.2 CAPRAL WINDOWS AND GLAZED DOORS

These schedules refer to the selections of the product/material by its properties, but do not locate it within the project. For this you should prepare a separate document, e.g. a Window schedule to locate the various finishes by reference to a designation code or abbreviation of the finish.

CAPRAL ALUMINIUM commercial framing schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following CAPRAL ALUMINIUM commercial framing system and CAPRAL ALUMINIUM thermal break framing:

- AGS 300 Narrowline.
- AGS 325 Narrowline Double Glazed.
- AGS 400 Narrowline.
- AGS 425 Narrowline Double Glazed.
- AGS 450 Narrowline Double Glazed.
- AGS 600 Narrowline.
- AGS 625 Narrowline Double Glazed.
- AGS 601 Offset Narrowline.
- AGS 419 Flushline Single Glazed – 100 mm.
- AGS 619 Flushline Single Glazed – 150 mm frame.
- AGS 619 Flushline Acoustic.
- AGS 429 Flushline Double Glazed – 100 mm frame.
- AGS 629 Flushline Double Glazed – 150 mm frame.
- AGS 1029 Flushline Double Glazed – 250 mm frame.
- AGS 659 Flushline Double Glazed – 150 mm frame with 50 mm pocket.
- Futureline 425TB Fixed Light Frame.
- Futureline 429TB 100 Flush Fixed Light Frame.
- Futureline 629TB 150 Flush Fixed Light Frame.

Hardware: Select proprietary or nominate hardware if not supplied as part of the window or door. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Sections can be powder coated to colours as listed on the AkzoNobel Interpon/Dulux colour cards. Anodising is available in Clear, Bronze, Black and a range of interference colours. Contact Capral Aluminium for details.

CAPRAL ALUMINIUM commercial window schedule

	A	B	C
Product			

	A	B	C
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following CAPRAL ALUMINIUM commercial windows and CAPRAL ALUMINIUM thermal break window:

- AGS 35 Series Awning/Casement Window.
- AGS 50 Series Awning/Casement Window.
- AGS Euro Awning/Casement Window.
- AGS Euro Tilt and Turn.
- AGS 380/480 Sliding Window.
- AGS 950 Sliding Window.
- AGS 481 Double Hung Window.
- Futureline 992TB Awning/Casement Window.
- Futureline 990TB Horizontal Sliding Window.
- Futureline 991TB Vertical Sliding Window.

Glazing: Select the generic term from the **Glazing Schedules**.

Hardware: Select proprietary or nominate hardware if not supplied as part of the window or door. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Sections can be powder coated to colours as listed on the AkzoNobel Interpon/Dulux colour cards. Anodising is available in Clear, Bronze, Black and a range of interference colours. Contact Capral Aluminium for details.

CAPRAL ALUMINIUM commercial door schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following CAPRAL ALUMINIUM commercial doors and CAPRAL thermal break door:

- AGS 215 Series Door.
- AGS 225 Series Door.
- AGS 900 Series Sliding Door.
- AGS 996 Artisan Folding Door.
- Futureline 997TB Hinged Door.
- Futureline 994TB Sliding Door.

Glazing: Select the generic term from the **Glazing Schedules**.

Hardware: Select proprietary or nominate hardware if not supplied as part of the window or door. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.

- Colour: Sections can be powder coated to colours as listed on the AkzoNobel Interpon/Dulux colour cards. Anodising is available in Clear, Bronze, Black and a range of interference colours. Contact Capral Aluminium for details.

CAPRAL ALUMINIUM residential window schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following Capral Aluminium residential windows:

- Urban Plus 393 Louvre Window.
- Urban Plus 395 Folding Window.
- Urban 280 Sliding Window.
- Urban 281 Double Hung.
- Urban 282 Awning and Casement Window.
- Urban Plus 390 Sliding Window.
- Urban Plus 391 Double Hung Window.
- Urban Plus 392 Awning / Casement Window.

Glazing: Select the generic term from the **Glazing Schedules**.

Hardware: Select proprietary or nominate hardware if not supplied as part of the window or door. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Frames are finished to order.

CAPRAL ALUMINIUM residential door schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following CAPRAL ALUMINIUM residential doors:

- Urban 284 Sliding Door.
- Urban Plus 394 Sliding Door.
- Urban Plus 397 Hinged Door.

Glazing: Select the generic term from the **Glazing Schedules**.

Hardware: Select proprietary or nominate hardware if not supplied as part of the window or door. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Frames are finished to order.

4.3 SCHÜCO WINDOWS AND DOORS

Schüco Aluminium sliding systems schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following Schüco aluminium sliding systems:

- ASS 39 PD.NI Panoramic Door.
- ASE 39 PD.NI HD Panoramic Door.
- ASS 50 Sliding Door.
- ASS 70.FD Folding Door.

Glazing: Select the generic term from the Glazing Schedules.

Hardware: Select proprietary hardware. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Frames are finished to order.

Schüco Aluminium door systems schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following Schüco aluminium door systems:

- ADS 65 HD Hinged Door.
- ADS 75 HD.HI Hinged Door.

Glazing: Select the generic term from the Glazing Schedules.

Hardware: Select proprietary hardware. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

- Finish: Select from Powder coat or Anodised.
- Colour: Frames are finished to order.

Schüco Aluminium window systems schedule

	A	B	C
Product			
Glazing			
Hardware			
Frame: Finish			
Frame: Colour			

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 the following Schüco aluminium window systems:

- AWS 65 Framing suite.
- AWS 75.SI+ Framing suite.
- AWS 114 PAF Parallel opening window.

Glazing: Select the generic term from the Glazing Schedules.

Hardware: Select proprietary hardware. Coordinate with the **Window hardware schedule** and/or your hardware schedule.

Frame:

Finish: Select from Powder coat or Anodised.

Colour: Frames are finished to order.

4.4 INTEGRAL BLINDS

Integral blind schedule

	A	B	C
Product name			
Generic description			
Venetian blind: Slat width (mm)			
Venetian blind: Material			
Venetian blind: Finish			
Venetian blind: Colour			
Fabric blind: Material			
Fabric blind: Colour/pattern			
Operator			

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.

Integral blinds are blinds installed in the cavity between the panes of glass in double glazed windows.

Product name: Delete if the selection is by generic performance.

Generic description: e.g. Venetian blind, Pleated fabric blind.

Venetian blind: Slat width (mm): e.g. 16 mm.

Venetian blind: Material: e.g. Aluminium.

Venetian blind: Finish: e.g. Powder coat, Anodised.

Venetian blind: Colour: Select from the manufacturer's range.

Fabric blind: Material: e.g. UV resistant polyester.

Fabric blind: Colour/pattern: Select from the manufacturer's range.

Operator: e.g. Cord, Wand, External motorised, Internal motorised, Remote controlled.

4.5 SCREENS

Screen schedule

	A	B	C
Product			
Type			
Frame: Material			
Frame: Finish			
Frame: Colour			
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*.
- Colour: For powdercoating, nominate colour from the manufacturer's powder coatings catalogue. For anodised, available colours include Natural silver, Bronze and Black.

Mesh type: e.g. Coated aluminium, Fibreglass, Corrosion-resistant steel or Bronze.

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.

4.6 SECURITY SCREEN DOORS AND SECURITY WINDOW GRILLES

Security screen doors and security window grilles schedule

	A	B	C
Product			
Type to AS 5039 (2008)			
Material			
Grille			
Finish			
Frame colour			
SecuraMesh colour			
Hinges: Material			
Hinge: Fixing			
Hardware			

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 the following Amplimesh Security Door Screens and Window Grilles:

- SecuraMesh Window and Door.
- SupaScreen Window and Door.
- Intrudaguard Window and Door.
- Amplimesh Folding Door.
- SupaScape Window.

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. Stainless steel or Aluminium.

Grille: Select from the following SecuraMesh grille style:

- SecuraMesh 127.
- SecuraMesh 125.

Finish: Select from powder coat or anodised.

Frame colour: Finished to order.

SecuraMesh colour: Finished to order.

Stainless Steel and Intrudaguard Aluminium perforated: Finished in black powder coat only.

Hinges:

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

- Fixing: Rivets or fastening devices. See AS 5039 (2008) clauses 6.7, and 6.8.

Hardware: See AS 5039 (2008) clause 6.5. If the manufacturer's standard lock and hardware are not acceptable, nominate hardware to comply. Coordinate with your hardware schedule.

4.7 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			
Surface pattern			
Surface processing: Method			
Surface processing: Pattern			
Surface processing: Colour			
Edge processing			
Number of edges processed			
Fire-resistance level (FRL)			
Bullet resistance classification			
Safety markings			

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 **Window and glazed door seal schedule**. If this schedule is used, coordinate with the **Window and glazed door schedule** so that each glass type is associated with the relevant window or glazed door.

Glass type: Refer to NATSPEC TECHnote PRO 006 for guidance on glass types. Refer to **Special glasses schedule** for decorative glass types.

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

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 or 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 **Window and glazed door 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.

Fire-resistance level (FRL): For fire-resistant glass only. e.g. (- /60/ -).

Bullet resistance classification: For bullet-resistant glass only. Consult the manufacturer for options.

Safety markings: Describe line or patterns to AS 1288 (2021) clause 5.19 on making glass visible. AS 1428.1 (2009) clause 6.6 requires a solid and non-transparent contrasting line to the full width of the glazing where a building is required to be accessible. The NCC cites AS 1428.1 (2001) and AS 1428.1 (2009). The current edition is AS 1428.1 (2021).

Special glasses schedule

	A	B	C
Mirrored			
Patterned			
Ceramic-coated glass: Base glass			
Ceramic-coated glass: Coating colour			
Ceramic-coated glass: Coating application method			
Acid etched			
Sandblasted			

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.

Refer to NATSPEC TECHnote PRO 006 for guidance on special (decorative) glass types and their properties.

Plastics glazing schedule

	A	B	C
Polycarbonate sheet: Type			
Polycarbonate sheet: Abrasion resistance			
Polycarbonate sheet: Fire hazard properties			
Acrylic sheet			
Reinforced polyester sheet: Type			
Reinforced polyester sheet: Surface treatment			
Reinforced polyester sheet: Mass/unit area			

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.

Polycarbonate sheet:

- Type: e.g. Transparent, Translucent, Opaque.
- Abrasion resistance: Consult the manufacturer.
- Fire hazard properties: e.g. Spread-of-Flame Index, Heat and smoke release rates. Consult the manufacturer.

Acrylic sheet and Reinforced polyester sheet: For types and properties, consult the manufacturer.

Insulating glass units (IGUs) schedule

	A	B	C
Product			
Outer pane: Glass type			
Outer pane: Thickness (mm)			
Outer pane: Colour/coating type			
Inner pane: Glass type			
Inner pane: Thickness (mm)			
Inner pane: Colour/coating type			
Spacer width (mm)			
Gas filling: 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.

Consult manufacturers for available combinations. If the units are intended for noise reduction, it may be necessary to document a weighted sound reduction index (R_w or $R_w + C_{tr}$) rating for the assembly.

See **Glass schedule** for guidance on glass pane type and thickness.

Outer pane/Inner pane: Colour/coating type: e.g. Solar reflective or Low emissivity. Delete if no coating is required. State which surface of which pane is to be coated.

Spacer width (mm): Sizes available are 6 mm, 8 mm, 10 mm, and 12 mm.

Gas filling: Type: e.g. Air, Argon, Krypton, Sulfur hexafluoride (SF_6). The latter is a heavy gas used to enhance acoustic performance. It is also a very potent greenhouse gas.

4.8 ANCILLARY COMPONENTS AND FITTINGS

Glazing adaptor schedule

	A	B	C
Product			
Glazing thickness			

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 the following Capral Aluminium AGS Glazing adaptors:

- St Kilda plant-on adaptor.
- St Lucia plant-on adaptor.
- Frameless glazing channel.
- General adaptor.

Glazing thickness: See **ANCILLARY COMPONENTS AND FITTINGS, Glazing adaptors**.

Trim schedule

	A	B	C
Product			
Trim			
Door architrave			
Window architrave			

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.

Trim: e.g. Plain angle, Shadow angle. Use manufacturer's descriptions.

Window and glazed door seal schedule

	A	B	C
Product			
Function			
Carrier material and finish			
Seal insert type and material			
Complementary seal			

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.

Window and door seals: Nominate type here, or cross reference to 0455 Door hardware.

Product: Full identification will allow deletion of the following generic descriptions.

Function: Select:

- Acoustic seals.
- Fire and smoke seals.
- Cold draught, dust and ember seals.
- Light seals.
- Insect and vermin seals.

Carrier material and finish: e.g. Brass, Anodised aluminium.

Seal insert type and material: e.g. Polypropylene pile.

Complementary seal: Describe that part of a sealing system that is fixed to the frame and threshold.

See BCA (2022) J5D5 and BCA (2022) H6D2(1)(b)(iii) for the sealing of windows and doors.

Pile weatherstrips schedule

	A	B	C
Product			
Material			

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: Full identification will allow deletion of the following generic descriptions.

Material: e.g. Extruded, Pile.

Weather bars schedule

	A	B	C
Product			
Material			

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: Full identification will allow deletion of the following generic descriptions.

Material: e.g. Timber, Metal.

4.9 WINDOW HARDWARE

Window hardware schedule

	A	B	C
Hinges			

	A	B	C
Sash balances			
Stays			
Sash lift and pulls			
Sash operator			
Sash operator remote controller			
Locks, catches and bolts			

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.

The schedule can be used to document the quality and performance requirements of window hardware on the basis of window type, e.g. Aluminium awning, Aluminium sliding door or Timber casement, so that the supplier or a specialist window hardware consultant can prepare a complete window-by-window schedule listing each proprietary item for every window or glazed door.

Alternatively, it can be used to directly document selected proprietary items with inherent quality or performance characteristics matching your requirements for each window or glazed door. Nominate type here, or cross reference to *0455 Door hardware*.

Hinges: Document brand, series, product number. If documenting generically, describe the size, material, finish and type, e.g. 75 mm x 40 mm SSS loose pin butt.

Sash balances: For double-hung windows, document brand, series, product number. If documenting generically, describe the type, tube length and diameter, colour, sash weight and foot type (for attaching the balance to the sash), e.g. Spiral balance – brown 610 mm x 14 mm dia., 8 kg, with detachable foot.

Stays: For casement and awning windows. Document brand, series, product number. If documenting generically, describe the type (friction for manually operated, non-friction for mechanically operated), width (standard for timber windows, narrow for aluminium), track length, sash weight, material and finish (e.g. Galvanized steel, Stainless steel). Restrictor stays can be specified to limit the opening of windows for safety reasons.

Sash lift and pulls: Use sash lifts for double-hung windows and pulls for sliding, casement and awning windows. Document brand and product number. If documenting generically, describe the type (e.g. D-handle, Ring pull) size, material and finish.

Sash operators: For awning windows and skylights. Sash operators generally fall into two categories:

- Chain winder: A proprietary device capable of opening and closing a projecting sash by means of a chain retracting into a winder box fixed to the sill, self-locking in all positions, manually operable by a sill mounted winding handle without moving the internal insect screen. Document brand, series, product number. If documenting generically, describe the type (Keyed, Non-keyed) extension length (often referred to as the opening size), sash weight, material, finish and colour.
- Remote control operator: A proprietary device for opening or closing louvres or a projecting sash, in banks if required, by means of a mechanical linkage manually or power operated from a convenient level, self-locking in all positions.

Sash operator remote controllers: Document brand, series, product number. If documenting generically, describe the means of operation (e.g. Electric, Pneumatic) and type (e.g. Wall mounted switch, Remote control handpiece). Only applicable to remote control sash operators. Delete if this type of sash operator has not been selected.

Locks, latches and bolts: Document brand, series, product number. If documenting generically, describe the lock or latch type or function (Non-lockable, Lockable, Push lock, Deadlock), material and finish. Deadlocks are suggested for external windows within 3 m of the ground, for security.

If applicable, document the handle type, e.g. Lever handle (generally recommended instead of knobs, for children, the elderly and the disabled - clearance between the lever handle and the sash face should be between 35 and 45 mm).

AS 1428.2 (1992) clause 23.4 requires window handles in trafficable areas to conform with the requirements for door handles in clause 23.3.

4.10 KEYING

Key codes schedule

Window no.	KD	KA group code	Location		
			Building code and name	Floor level	Space code and name

If a detailed window hardware schedule is not available for pricing purposes at the time of tendering, the tenderers should at least be given a **Key codes schedule** showing which KA groups will apply to the project, and the number of locks (preferably

identified by their individual window numbers) in each group. However, it is preferable to provide the full **Key codes schedule** to tenderers unless this is precluded by security considerations.

Window no.: Give each window a unique number, either corresponding to the space in which the window is located: e.g. G 01/A and G 01/B would both be windows accessing room G 01; or number windows sequentially (and independently from the spaces) on each floor. Floor 1 windows: W101, W102, etc. For scheduling purposes it is advisable to provide the space number and name with the window number, this facilitates the recognition of room usage and hardware type, and is informative when the hardware schedule is provided (often) for tendering without accompanying plans.

If proprietary hardware is required to be keyed to the overall master key system, specify those requirements in the worksection specifying the proprietary system (partition, window, etc.).

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 1231	2000	Aluminium and aluminium alloys - Anodic oxidation coatings
AS 1288	2021	Glass in buildings - Selection and installation
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 4145		Locksets and hardware for doors and windows
AS 4145.1	2008	Glossary of terms and rating system
AS 4145.2	2008	Mechanical locksets for doors and windows in buildings
AS 4666	2012	Insulating glass units
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
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
AAMA 701/702	2023	Performance specification for pile weatherstrips (AAMA 701) and polymer weatherseals (AAMA 702)
AAMA 800	2016	Voluntary specifications and test methods for sealants
ASTM C920	2018	Standard specification for elastomeric joint sealants
ASTM C1048	2018	Standard specification for heat-strengthened and fully tempered flat glass
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 1428		Design for access and mobility
AS 1428.1	2001	General requirements for access - New building work
AS 1428.1	2009	General requirements for access - New building work
AS 1428.1	2021	General requirements for access - New building work
AS 1428.2	1992	Enhanced and additional requirements - Buildings and facilities
AS 1530		Methods for fire tests on building materials, components and structures
AS 1530.2	1993	Test for flammability of materials
AS 1530.4	2014	Fire-resistance tests for elements of construction
AS 1530.8		Tests on elements of construction for buildings exposed to simulated bushfire attack
AS 2665	2001	Smoke/heat venting systems - Design, installation and commissioning
AS 4055	2021	Wind loads for housing
AS 5041	2003	Methods of test - Security screen doors and window grilles
BCA D3D16	2022	Access and egress - Construction of exits - Thresholds
BCA H6D2	2022	Class 1 and 10 buildings - Energy efficiency - Application of Part H6
BCA J5D5	2022	Energy efficiency - Building sealing - Windows and doors
BCA Spec 37	2022	Energy efficiency - Calculation of U-Value and solar admittance
AGWA Guide Window	2020	A guide to window and door selection
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 020		Fire behaviour of building materials and assemblies
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
WoodSolutions 10	2015	Timber windows and doors
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