

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 fixings, flashings, sealants and seals, caulking and weather-stripping, necessary for the satisfactory functioning of the whole system.

Guidance text

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

Optional style text

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

Related material located elsewhere in NATSPEC

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

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

- *0432 Curtain walls.*
- *0455 Door hardware* if hardware is to be supplied by others.
- *0456 Louvre windows.*
- *0457 External screens.*
- *0462 Structural silicone glazing* for adhesive fixed glazing.
- *0463 Glass blockwork.*
- *0524 Partitions – glazed* for glazed internal partitions.

Material not provided by Capral Aluminium

This branded worksection does not include:

- Frameless glazing.
- Louvre assemblies.
- 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.
- Bushfire protection: Depending on the level of construction to AS 3959, the windows and doors should satisfy the construction requirements of AS 3959 and the BCA. See NATSPEC TECHnote DES 018 for information on bushfire protection.
- See NATSPEC TECHnote PRO 006 for glass types used in buildings.
- For smoke and heat venting, see AS 2665 which is cited in the BCA.
- For information on WERS Star Rating, see the Australian Window Association website – www.wers.net.
- For information on the AWA Accreditation Program, see Australian Window Association website – www.awa.org.au.
- For information on timber windows and doors, refer to WoodSolutions 10.

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:

- Integral blinds.
- Sash operators.

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

- Guarantees and warranties.
- Protection of openable windows.
- Paints.

Search www.environmentdesignguide.com.au, the Australian Institute of Architect's environmental advisory subscription service for notes on the following:

- Daylighting of buildings.
- Revisiting energy efficiency in commercial buildings.
- BCA Section J and Commercial Building Facade Design.
- Properties and rating systems for glazing, windows and skylights.

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 window is shut.

The following may be specified 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:

- Re-use of salvaged windows.
- Recycled material content, e.g. aluminium frames.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

Capral Aluminium was established in 1936 and 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, Urban, Futureline, Amplimesh, Intrudaguard, and AGS.

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: <http://www.capral.com.au/Contacts-Locations>.

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.

Building classification: [complete/delete]

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

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

Glazing

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

For glass type and thickness, refer to AS 1288 Table 4.1 and to AS/NZS 4667.

Glass thickness may be governed by human safety and other requirements – see AS 1288 Section 5. The commonly available thicknesses of various glasses are shown in the wind pressure figures of AS 1288 Section 4.

Show or specify a thickness where:

- The glass is to be thicker than required by AS 1288 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.

Design wind pressure: To AS/NZS 1170.2 or AS 4055 as appropriate.

Materials and installation: To AS 1288.

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

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 surface, 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/Technical-Manuals

1.6 INTERPRETATION

Abbreviations

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

- AWA: Australian 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 and the following apply:

- Hardware: To AS 4145.1 Section 2.
- Total system SHGC: Solar heat gain coefficient as defined by BCA and tested in conformance with NFRC 200.
- Total system U-Value: Thermal transmittance as defined by BCA and tested in conformance with NFRC 100.

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

1.7 SUBMISSIONS

Certification

Conformance: Submit evidence that window and door assemblies conform to AS 2047.

Widow assemblies other than for housing may conform to AS 2047 clause 8.2 Labelling or AS 2047 clause 8.3 Certificate.

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.

Protection of openable windows: Submit a certificate of on-site fall prevention testing to AS 5203.

On-site testing may not be required if type tests of window assemblies are available.

Fire performance

Fire-resistance level: Submit evidence of conformance to PRODUCTS, **FIRE PERFORMANCE, Fire-resistance of building elements.**

Operation and maintenance manual

Capral Aluminium care and maintenance manual: Submit on completion.

Products and materials

Type tests: Submit results, as follows:

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**, if there are no **SELECTIONS**.

- Fire-resistance level.
- Weighted sound reduction index (R_w): To AS/NZS ISO 717.1.

The NCC cites ISO 717-1:1996 and AS/NZS 1276.1 for testing of construction required to have a certain R_w rating.

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: To AS 5203.

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

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

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: Required samples may form part of prototypes.

Samples

Window and door framing: Submit the following:

- Colour samples of 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 glazing plastics.
- Surface modified or surface coated glass.
- Patterned or obscured glass or glazing plastics.
- 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 weather seals (pile or extruded).
- Generic hardware: Submit samples of generic hardware not documented as proprietary items.

If required, add samples of generic hardware required.

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

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, check 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.
- Lubrication requirements.
- Methods of assembly.
- Methods of installation, including fixing, caulking and flashing.

See BCA 3.12.3 and BCA J3.4 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.

Warranties

General: Submit Capral Aluminium warranty for finishing and hardware.

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

1.8 INSPECTION

Notice

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

- Openings prepared to receive windows (where windows are to be installed in prepared openings).
- 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 PRODUCTS, **GENERAL, Substitutions** in *0171 General requirements*.

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

Protection of openable windows

Fall prevention: To BCA D2.24 and BCA 3.9.2.5.

Testing: To AS 5203.

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

Storage and handling

Storage: Store in a clean, dry area and 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 the following:

- 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.

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 Section 8.

Window assemblies other than for housing, may conform to AS 2047 clause 8.2 Labelling or AS 2047 clause 8.3 Certificate.

2.2 FIRE PERFORMANCE

Fire-resistance of building elements

Fire-resistance level: Tested to AS 1530.4.

Fire-resistance level (FRL) applies only to specialist windows, usually supplied by passive fire protection product manufacturers. See NATSPEC TECHnote DES 020 on fire behaviour of building materials and assembly.

2.3 CAPRAL ALUMINIUM AGS COMMERCIAL FRAMING

AGS 300 Narrowline

Application: Light-commercial, internal fitout or architectural.

Compatible product range: 215 Series Door, 225 Series Door, 35 and 50 Window, 380 Sliding 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: 2400 mm.

AGS 325 Narrowline

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

Compatible product range: 300 Narrowline, 35 Series Window. The centre glazed configuration can incorporate adaptors to accommodate 35 Series Awning/Casement window.

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, Genesis 400 Series, 35 and 50 Series Windows, 481 Double Hung Window, 480 Sliding 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

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, 480 Sliding 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

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, 215 and 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.

Description: Single glazed centre pocket framing system.

Framing section: 150 mm x 50 mm.

Maximum height: 4000 mm.

Maximum width: 3000 mm.

AGS 625 Double Glazed Narrowline

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.

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.

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 419 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 419 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 419 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 419 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 419 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 419 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/Casement Window**

Application: Most commercial and architectural applications.

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

Screen: Flyscreen integrated into the frame.

Compatible product range: 300 Narrowline, 325 Narrowline 400 Narrowline, 425 Narrowline, 600 Narrowline, 601 Narrowline, 625 Narrowline, 419 Flushline Single Glazed, 419 Flushline Double Glazed.

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: 43 kg.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 750 mm.
 - . Weight: 40 kg.
- Integral hinged awning window:
 - . Height: 1500 mm.
 - . Width: 1500 mm.
 - . Weight: 43 kg.

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

AGS 50 Series Awning/Casement Window

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 and 325 Narrowline (Angle Fix), 400, 425 and 601 Narrowline, 419 Flushline, 600 and 625 Narrowline (Angle Fix).

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: 43 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/Casement Window

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: Euro Tilt and Turn, 400 Narrowline, 419 Flushline.

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: 43 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: 1800 mm.
 - . Weight: 60 kg.

AGS Euro Tilt and Turn

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: Euro Awning/Casement, 400 Narrowline, 419 Flushline

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 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 Narrowline, 419 Flushline, 425 Narrowline Double Glazed, 601 Offset Narrowline, 625 Narrowline Double Glazed.

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 and 150 mm x 44 mm sill.
- 100 mm and 150 mm x 50 mm sill.
- 100 mm and 150 mm x 80 mm HP sill.

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 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 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 HP 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: 900 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

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

Futureline 440TB Fixed Light Frame

Compatible product range: Futureline 46D Hinged Door, Futureline 54W Awning/Casement Window, Futureline 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 419TB 150 mm Fixed Light Frame

Compatible product range: Futureline 46D Hinged Door, Futureline 54W Awning/Casement Window, Futureline 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 54W 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 440TB Framing System, Futureline 419TB 150 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: 40 kg.
- Casement window:
 - . Height: 1800 mm.
 - . Width: 900 mm.
 - . Weight: 40 kg.

Futureline 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 440TB Framing System, Futureline 46D Hinged Doors

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

Maximum panel size and weight:

- Height: 2000 mm.
- Width: 2400 mm.
- Weight: 200 kg.

2.8 CAPRAL ALUMINIUM FUTURELINE THERMAL BREAK DOOR

Futureline 46D 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 440TB Framing System, Futureline 419TB 150 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 and 120 mm wide.
- Rails: 89 mm and 120 mm high.

Maximum panel size and weight:

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

Futureline 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 440TB Framing System, Futureline 419TB 150 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 580 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: 46.8 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 581 Double Hung

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 582 Awning and Casement Window

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.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 750 mm.
 - . Weight: 40 kg.

- Fixed lights:
 - . Height: 2400 mm.
 - . Width: 1550 mm.

2.10 CAPRAL ALUMINIUM URBAN RESIDENTIAL DOORS

Urban 584 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.

Urban 585 Sliding Door

Hardware: High quality roller options and a wide range of lockable door hardware.
 Screen: Integrated insect and security screening options.
 Compatible product: Urban residential range.

Description: Single or double glazed sliding door with OX, XO, OXO and OXXO configurations and provisions for side and top lights.

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

Select from either of the following:

- 95 mm x 32 mm -150 Pa sill.
- 95 mm x 48 mm - 300 Pa sill.
- 20 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 590 Sliding Window

Compatible product range: Urban Plus 591 Double Hung Window, Urban Plus 592 Awning/Casement Window, Urban Plus 594 Sliding Door, Urban Plus 597 Hinged Door.

Description: Single or double glazed sliding window with XO, XOX and OXXO configurations and provisions for side and top lights.

Frame depth: 125 mm.

Maximum panel size and weight:

- Sliding window:
 - . Height: 1800 mm.
 - . Width: 1200 mm.
 - . Weight: 64 kg.
- Framed fixed light:
 - . Height: 2400 mm.
 - . Width: 1450 mm.

Urban Plus 591 Double Hung Window

Compatible product range: Urban Plus 590 Sliding Window, Urban Plus 592 Awning/Casement Window, Urban Plus 594 Sliding Door, Urban Plus 597 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: 125 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 592 Awning/Casement Window

Compatible product: Urban Plus range.

Description: Double glazed high performance awning and casement window.

Maximum panel size:

- Awning window:
 - . Height: 2100 mm.
 - . Width: 2100 mm.
- Casement window:
 - . Height: 2400 mm.
 - . Width: 1150 mm.
- Framed fixed light:
 - . Height: 2400 mm.
 - . Width: 1450 mm.

2.12 CAPRAL ALUMINIUM URBAN PLUS RESIDENTIAL DOOR

Urban Plus 594 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: High performance 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.

2.13 CAPRAL ALUMINIUM GENESIS RESIDENTIAL WINDOWS

Premium quality residential windows featuring distinctive appearance, high quality hardware and high wind and water performance options.

Hardware: Lockable and non-lockable hardware options.

Screen: Screening system integrated into the frame.

Compatible product: Genesis range.

Genesis Sliding Window

Description: Single or double glazed sliding window with provisions for fixed lights and a range of configurations.

Framing section: [complete/delete]

Select from the following:

- 80 mm standard frame.
- 101.6 mm commercial frame.

Maximum panel size and weight:

- Height:
 - . Standard: 1600 mm.
 - . Commercial: 1800 mm.
- Width: 1200 mm.
- Weight per sash: 60 kg.

Maximum fixed light size:

- Height: 1000 mm.
- Width: 1500 mm.

Genesis Sliding Window Mk2

Description: Single or double glazed sliding window with provisions for fixed lights and a range of configurations.

Framing section: [complete/delete]

Select from the following:

- 80 mm standard frame.
- 102.5 mm stacker frame.

Maximum panel size and weight:

- Height: 1600 mm.

- Width: 1200 mm.
- Weight per sash: 80 kg.

Maximum fixed light size:

- Height: 1000 mm.
- Width: 1500 mm.

Genesis Awning/Casement Window

Description: Single or double glazed awning and casement window with provisions for fixed lights and a range of configurations.

Frame depth: 80 mm.

Maximum panel size:

- Awning window:
 - . Height: 1500 mm.
 - . Width: 1200 mm.
 - . Weight: 43 kg.
- Casement window:
 - . Height: 1500 mm.
 - . Width: 750 mm.
 - . Weight: 40 kg.

Genesis Double Hung Window

Description: Single or double glazed double hung window with under light option.

Frame depth: 80 mm.

Maximum panel size and weight:

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

Maximum frame size:

- Height: 3000 mm.
- Width: 1200 mm.

Genesis Folding Window

Hardware: High quality hinge and roller hardware with Capral's unique EMT™ (Effortless Motion Technology) guide system for smooth and lightweight motion.

Description: Single or double glazed folding window with a range of configurations.

Framing section (depth): 80 mm.

Maximum panel size and weight:

- Height: 1600 mm.
- Width: 900 mm.
- Weight: 20 kg.

2.14 CAPRAL ALUMINIUM GENESIS RESIDENTIAL DOOR

Genesis Sliding Door

Application: Projects requiring a premium level of quality, performance and style. It features a distinctive appearance, high quality hardware and high wind and water performance options.

Compatible product: Genesis range.

Description: Single or double glazed sliding door with standard and multi-stack configurations of up to 6 panels.

Framing section (depth): 80 mm.

Maximum panel size and weight:

- Height: 2500 mm.
- Width: 1200 mm.
- Weight:

- . Standard roller: 50 kg.
- . Heavy duty roller: 160 kg.

Genesis Hinged Door

Application: Projects requiring a premium level of quality, performance and style. It features a distinctive appearance, high quality hardware and high wind and water performance options.
Compatible product: Genesis range.

Description: Single or double glazed hinged door with single and double door configurations with provisions for high & side lights.

Framing section (depth): [complete/delete]

Select from the following:

- 80 mm standard frame.
- 125 mm wide frame.

Maximum panel size and weight:

- Height: 2500 mm.
- Width: 900 mm.
- Weight:
 - . On 3 hinges: 45 kg.
 - . On 4 hinges: 155 kg.

Genesis Folding Door

Application: Projects requiring a premium level of quality, performance and style. It features a distinctive appearance, high quality hardware and high wind and water performance options.
Compatible product: Genesis range.

Description: Single or double glazed folding door with multiple configurations of up to 8 panels.

Framing section (depth): [complete/delete]

Select from the following:

- 80 mm standard frame.
- 101.6 mm commercial frame.

Maximum panel size and weight:

- Height: 2500 mm.
- Width: 900 mm.
- Weight: 45 kg.

2.15 GLASS

Performance

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

Glazing plastics: 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.

Safety glasses

Standard: To AS/NZS 2208.

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

See AS/NZS 2208 Section 2 for dimensional specifications and AS/NZS 2208 Table 2.3 for overall bow and warpage.

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.

Certification: Required.

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

Heat soaking

Requirement: All toughened and heat strengthened glass products.

Standard: To EN 14179-1.

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

Unacceptable blemishes in heat-treated flat glass (including tinted and coated glass)

Standard: To AS/NZS 4667.

Ceramic-coated glass

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

Opacified glass

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

Insulating glass units (IGUs)

Selection and installation: To AS 4666.

2.16 GLASS IDENTIFICATION

Safety glazing materials

Identification: To AS 1288.

See AS 1288 clause 5.23 on identification of safety glazing materials. 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.

2.17 GLAZING MATERIALS

General

Requirement: Glazing materials including 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.

If an AWA Compliance Certificate is not nominated in **SELECTIONS**, change the following *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.

Compounds, sealants and tapes

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

AAMA 800 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 specification 802.3 (Types I or II), or 805.2, as applicable.

AAMA 800 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 which cure relatively hard and stiff and to permit limited movement without loss of bond.

Narrow joint seam sealer: To AAMA 800 specification 803.3.

AAMA 800 narrow joint seam sealer definitions:

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

Exterior perimeter sealing compound: To AAMA 800 specification 808.3.

AAMA 800 exterior perimeter sealing compound definition:

- 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 specification 809.2.

AAMA 800 non-drying sealant definition:

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

Expanded cellular glazing tape: To AAMA 800 specifications 810.1.

AAMA 800 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: Provide jointing and pointing materials to manufacturer's recommendations that are compatible with each other and with the contact surfaces and non-staining to finished surfaces. Do not provide bituminous materials on absorbent surfaces.

Elastomeric sealants

Sealing compound (polyurethane, polysulfide, acrylic): To ASTM C920 or ISO 11600.

Sealing compound (silicone): To ASTM C920 or ISO 11600.

Sealing compound (butyl): To ASTM C1311.

Elastomeric sealants schedule

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 in the **Integral blinds schedule**.

2.19 INSECT SCREENS

Fixed screens

General: Provide fixed screens fitted to the window frames with a clipping device that permits removal for cleaning.

Hinged screens

General: Hinged at the top to give access to opening sash.

Retractable screens

General: Provide a proprietary retractable insect screen, comprising aluminium frame and fibreglass mesh, fitted between the guide channels incorporated in the frame, and a retraction system including tension spring, nylon bearings, positive self-locking device and plastic sealing strip at sill.

Sliding screens

General: Provide a matching aluminium head guide, sill runner, and frame stile sections for screens not part of the window frame.

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

Aluminium framed screens

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

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.

Security screen doors and security window grilles: To AS 5039.

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

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 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.

Product: [complete/delete]

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

Type: [complete/delete]

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

e.g. Dulux supply the following types:

Duralloy is offered as standard by a number of aluminium window suppliers.

Duratec can be made available upon request: Select for high rise where cleaning may be infrequent or where longer warranties are required.

Fluoraset can be made 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.

Colour: [complete/delete]

Nominate colour from the manufacturer's powder coatings catalogue.

Anodised

Standard: To AS 1231.

Thickness: ≥ 15 microns to 20 microns.

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

Colour: [complete/delete]

Available colours include Natural silver, Bronze and Black.

2.25 OTHER MATERIAL FRAME FINISHES

AS 2047 includes all 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 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 in the **Glazing adaptor schedule**.

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.

Trims

Timber: Solid timber at least 19 mm thick, mitred at corners.

Extruded gaskets and seals

General: Provide seals, as documented.

Document in the **Window and door seal schedule**.

Location or function: [complete/delete]

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

- Flexible polyvinyl chloride (PVC): To BS 2571, 100% solids with high consistency, ultraviolet stabilised.
- Rubber products (neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber): To BS 4255-1.

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.

Nylon brush seals

General: Dense nylon bristles locked into galvanized or stainless steel strips and fixed in a groove in the edge of the door or in purpose-made anodised aluminium holders fixed to the door with double sided PVC foam tape.

Pile weather strips

Standard: To AAMA 701/702.

AAMA 701/702 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 3.12.3 and BCA J3.4 for the sealing of windows and doors.

Location: [complete/delete]

Materials: Polypropylene or equivalent pile and backing, low friction silicone treated, ultraviolet stabilised.

Finned type: A pile weather seal 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.

Type: [complete/delete]

Document or refer to a detail. Weather bars are used either as a barrier between sill and building fabric (or subsill), 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. When 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 BCA covers thresholds at BCA D2.15.

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 4145.3.

Performance:

- Durability: [complete/delete]
- Physical security: [complete/delete]
- Keying security: [complete/delete]

Provide designations for durability (DW1 or DW2), physical security (SW1 or SW2) and keying security (K1 or K2) from AS 4145.3 clause 1.5. For example DW2SW1K1 for residential use.

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
	- 3-10 locks in code group	6
	- 11-40 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 lock sets in windows, AS 4145.3, provides for only two levels of keying security, K1 and K2. The standard for locksets in doors, AS 4145.2, has nine levels, K1 to K9. Window locks conforming to security levels K1 and K2 can accommodate keyed alike groupings but not master keying systems.

If master keying is required for window hardware, document locks to comply with the standard for door locksets. These are generally bulkier than K1 and K2 locksets. In such cases, seek advice from the locking suppliers, as the size of frame and sash members may need to be increased to accommodate the bulkier hardware.

In these situations, the group and master keying requirements need to be co-ordinated 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 GLASS PROCESSING****General**

Processing: Perform required processes on glass, 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.

3.2 INSTALLATION**Glazing**

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

General: Install the glass as follows:

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

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

Temporary marking: Use a method which does not harm the glass. Remove marking on completion.

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

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

Preglazing

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

Windows and glazed doors

General: Install windows and glazed doors frames, to the manufacturers recommendations, 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.

Weatherproofing

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

Fixing

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

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

Fasteners: Conceal fasteners.

Joints

General: Make accurately fitted tight joints so that neither fasteners nor fixing devices such as pins, screws, adhesives and pressure indentations are 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.

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 Informative Appendix F to AS 2047.

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.

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

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

- Hollow metal sections: Provide backing plates drilled and tapped for screw fixing, or provide threaded inserts (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.

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 or alkaline materials.

Extent: All frames and glass surfaces inside and out.

Warranties

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

Hardware: Provide the manufacturer's published product warranties.

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

4.1 PERFORMANCE**Window and glazed door performance schedule**

Property	A	B	C
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Property	A	B	C
Total system U-Value (W/m ² .K)			
Total system SHGC			
Weighted sound reduction index (R _w)			
Visible transmittance (T _{vis})			
Reflectance (%)			
WERS Energy rating%: Heating			
WERS Energy rating%: Cooling			
AWA Compliance Certificate			
Water penetration resistance (Pa)			
Fire-resistance level (FRL)			
Bushfire protection (BAL)			
Ultimate limit state (ULS) wind pressure (Pa)			
Serviceability limit state (SLS) wind pressure (Pa)			
Openable (free) area (m ²)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags. Edit codes in the **Schedule** to match those on drawings.

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

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

Weighted sound reduction index: State the required rating to AS/NZS ISO 717.1. It is advisable to obtain the advice of an acoustic consultant on the selection of an R_w rating for sound transmission reduction. Refer to NATSPEC TECHnote DES 032 for information on airborne sound insulation. The NCC cites ISO 717-1:1996 and AS/NZS 1276.1 for testing of construction required to have a certain R_w rating.

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 www.abcb.gov.au. Delete if this requirement is more appropriately covered in the **Glass schedule**.

WERS Energy rating: Star rating system operated by the Australian Window Association.

AWA (Australian Window Association) Certificate of Compliance: Insert Required or Not required. The AWA Compliance Certificate will cover only those products that conform to AS 2047. Products excluded from AS 2047 can be covered by the AWA Compliance Certificate if evidence of testing and conformance with AS 2047 is made available.

Water penetration resistance: e.g. 150 Pa.

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

Bush fire protection: Fit screens and seals to AS 3959.

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

Openable area: State the openable area in m² to achieve BCA requirements for natural ventilation.

4.2 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

Property	A	B	C
Product name			
Glazing			
Hardware			
Frame finish			
Frame colour			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags. Edit codes in the **Schedule** to match those on drawings.

Product: Select from the following Capral Aluminium commercial framing system and Capral Aluminium thermal break framing:

- AGS 300 Narrowline.
- AGS 325 Narrowline.
- AGS 400 Narrowline.
- AGS 425 Narrowline.
- AGS 450 Narrowline.
- AGS 600 Narrowline.
- AGS 625 Double Glazed Narrowline.
- AGS 601 Offset Narrowline.
- AGS 419 Flushline Single Glazed - 100 mm.
- AGS 419 Flushline Single Glazed – 150 mm frame.
- AGS 419 Flushline Acoustic.
- AGS 419 Flushline Double Glazed – 100 mm frame.
- AGS 419 Flushline Double Glazed – 150 mm frame.
- AGS 419 Flushline Double Glazed – 250 mm frame.
- AGS 419 Flushline Double Glazed – 150 mm frame with 50 mm pocket.
- Futureline 440TB Fixed Light Frame.
- Futureline 419TB 150 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.

Frame 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

Property	A	B	C
Product			
Glazing			
Hardware			
Frame finish			
Frame colour			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags. Edit codes in the **Schedule** to match those on drawings.

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.
- AGS Futureline 54W Awning/Casement Window.
- AGS Futureline 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.

For protection of openable windows conforming to BCA D2.24 and BCA 3.9.2.5, document a device to restrict the window opening in this schedule or the **Window hardware schedule**, a screen in the **Screen schedule** and a barrier, as required.

Frame finish: Select from Powder coat or Anodised.

Frame 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

Property	A	B	C
Product			
Glazing			
Hardware			
Frame finish			
Frame colour			

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

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

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 Artisan Folding Door.
- Futureline 46D Hinged Door.
- Futureline Sliding Door.
- Futureline Lift & Slide 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.

For protection of openable windows conforming to BCA D2.24 and BCA 3.9.2.5, document a device to restrict the window opening in this schedule or the **Window hardware schedule**, a screen in the **Screen schedule** and a barrier, as required.

Frame finish: Select from Powder coat or Anodised.

Frame 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

Property	A	B	C
Product			
Glazing			
Hardware			

Property	A	B	C
Frame finish			
Frame colour			

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

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

Product: Select from the following Capral Aluminium residential windows:

- Urban 580 Sliding Window.
- Urban 581 Double Hung.
- Urban 582 Awning and Casement Window.
- Urban Plus 590 Sliding Window.
- Urban Plus 591 Double Hung Window.
- Urban Plus 592 Awning / Casement Window.
- Genesis Sliding Window.
- Genesis Sliding Window MK2.
- Genesis Awning / Casement Window.
- Genesis Double Hung Window.
- Genesis Folding 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.

For protection of openable windows conforming to BCA D2.24 and BCA 3.9.2.5, document a device to restrict the window opening in this schedule or the **Window hardware schedule**, a screen in the **Screen schedule** and a barrier, as required.

Frame finish: Select from Powder coat or Anodised.

Frame colour: Frames are finished to order.

Capral Aluminium residential door schedule

Property	A	B	C
Product			
Glazing			
Hardware			
Frame finish			
Frame colour			

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

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

Product: Select from the following Capral Aluminium residential doors:

- Urban 584 Sliding Door.
- Urban 585 Sliding Door.
- Urban Plus 594 Door.
- Genesis Sliding Door.
- Genesis Hinged Door.
- Genesis Folding 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.

For protection of openable windows conforming to BCA D2.24 and BCA 3.9.2.5, document a device to restrict the window opening in this schedule or the **Window hardware schedule**, or a screen in the **Screen schedule** and a barrier, as required.

Frame finish: Select from Powder coat or Anodised.

Frame colour: Frames are finished to order.

4.3 INTEGRAL BLINDS

Integral blind schedule

Property	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			

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

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

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.

4.4 SCREENS

Screen schedule

Property	A	B	C
Product name			
Generic description			
Frame material			
Frame finish			
Mesh type			

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

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

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

Generic description: e.g. Flyscreen, Fire protection screen, Fall prevention screen. See the **Security window grille schedule** for security grilles. See BCA D2.24 and BCA 3.9.2.5 for openable windows requiring fall prevention devices, screens and barriers.

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

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

Mesh type: e.g. Coated aluminium, Fibreglass, Corrosion resistant steel or Bronze. BCA 3.7.4 and AS 3959 call for screens of aluminium, corrosion resistant steel or bronze with a maximum aperture size of 1.8 mm to areas of medium bush fire attack category and excludes aluminium mesh in areas of high category. Fibreglass mesh is excluded in all bush fire areas.

4.5 SECURITY SCREEN DOORS AND SECURITY WINDOW GRILLES

Security screen doors and security window grilles schedule

Property	A	B	C
Product name			
Generic description			
Material			
Grille			
Finish			
Frame colour			
SecuraMesh colour			
Hinges: Material			
Hinge: Fixing			
Hardware			

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

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

Product name: 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.

Generic description: AS 5039 clause 5.2 describes the three window screen security classification type 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: 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 clauses 6.7, and 6.8.

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

4.6 GLAZING

Glass schedule

Property	A	B	C
Glass type			

Property	A	B	C
Glass thickness (mm)			
Body tint colour			
Interlayer colour			
Surface coating			
Surface coating: Colour			
Reflective coating: Colour			
Reflective coating: % reflectance			
Surface pattern			
Surface processing			
Surface processing: Pattern			
Surface processing: Colour			
Edge processing			
Number of edges processed			
Fire-resistance level (FRL)			
Bullet resistance classification			
Safety markings			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags. Edit codes in the **Schedule** to match those on drawings.

This schedule can be used for projects where a large number of different glass types are used, or the glazing requires more detailed specification than it is appropriate to include in the **Window and glazed door schedule**. If this schedule is used, coordinate it 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: It is generally not necessary to document thickness. Nominate a thickness where:

- The glass is to be thicker than required by AS 1288 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 wire (cast or polished) in locations exposed to the sun; fracture may result.

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

Surface coating: Describe by coating function, e.g. Solar control, Low emission, Self-cleaning, Decorative or by coating type, e.g. Pyrolytic hard coating, Vacuum sputtered or Ceramic. Coatings are best described by the manufacturer's brand name.

- Self-cleaning: Glass incorporating a coating which dissolves dirt (photo activ) and sheds water (hydrophilic) using natural UV light and rain.

Surface coating: 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 colour available. Reflective coatings may be available on either clear or body tinted float. Consult manufacturer.

Reflective coating: % 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: e.g. Screen printing with ceramic paint fused to the surface, Sandblasting, Acid etching.

Surface processing: Pattern: Proprietary patterns are best described by the manufacturer's brand name.

Surface processing: 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. 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.

Refer to NATSPEC TECHnote PRO 006 for more information on this topic.

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. Use classifications defined in AS/NZS 2343.

Safety markings: Describe line or patterns to AS 1288 clause 5.19 on making glass visible.

Special glasses schedule

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

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

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

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

Glazing plastics schedule

Type and properties	A	B	C
Polycarbonate sheet: Type			
Polycarbonate sheet: Abrasion resistance			
Polycarbonate sheet: Fire hazard properties			
Acrylic sheet			
Reinforced polyester sheet: Type			
Reinforced polyester			

Type and properties	A	B	C
sheet: Surface treatment			
Reinforced polyester sheet: Mass/unit area			

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

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

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 unit (IGU) schedule

Properties	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			

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

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

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) rating for the assembly. See AS/NZS ISO 717.1.

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.

4.7 ANCILLARY COMPONENTS AND FITTINGS

Window and glazed door seal schedule

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

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

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

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 3.12.3 and BCA J3.4 for the sealing of windows and doors.

Glazing adaptor schedule

Property	A	B	C
Product			
Glazing thickness			

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

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

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**

4.8 WINDOW HARDWARE

Window hardware schedule

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

A, B, C: These designate each instance or type or location of the item scheduled.

Edit codes in the **schedule** to align with those on drawings or with the project's codes or tags.

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.

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 clause 23.4 requires window handles in trafficable areas with conform with door handles in clause 23.3.

For protection of openable windows conforming to BCA D2.24 and BCA 3.9.2.5, document a device to restrict the window opening in this schedule or the **Window and glazed door schedule**, a screen in the **Screen schedule** and a barrier, as required.

4.9 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	2006	Glass in buildings - Selection and installation
AS 1530		Methods for fire tests on building materials, components and structures
AS 1530.4	2014	Fire-resistance tests for elements of construction
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 4145		Locksets and hardware for doors and windows
AS 4145.1	2008	Glossary of terms and rating system
AS 4145.3	2001	Mechanical locksets for 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 3.9.2.5	2016	Acceptable construction - Safe movement and access - Barriers and handrails - Protection of openable windows
BCA D2.24	2016	Access and egress - Construction of exits - Protection of openable windows
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
AAMA 701/702	2011	Voluntary specification for pile weatherstripping and able fenestration weatherseals
ASTM C920	2018	Standard Specification for Elastomeric Joint Sealants
ASTM C1048	2012	Standard specification for heat-strengthened and fully tempered flat glass
ASTM C1311	2014	Standard Specification for Solvent Release Sealants
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	2011	Wind actions
AS/NZS 1276		Acoustics - Rating of sound insulation in buildings and of building element
AS/NZS 1276.1	1999	Airborne sound insulation
AS 1428		Design for access and mobility
AS 1428.2	1992	Enhanced and additional requirements - Buildings and facilities
AS/NZS 2343	1997	Bullet-resistant panels and elements
AS 2665	2001	Smoke/heat venting systems- Design, installation and commissioning
AS 3959	2009	Construction of buildings in bushfire prone areas
AS 4055	2012	Wind loads for housing
AS 4145		Locksets and hardware for doors and windows
AS 4145.2	2008	Mechanical locksets for doors and windows in buildings
AS 5041	2003	Methods of test - Security screen doors and window grilles
BCA 3.12.3	2016	Acceptable construction - Energy efficiency - Building sealing
BCA 3.7.4	2016	Acceptable construction – Fire safety – Bushfire areas
BCA D2.15	2016	Access and egress- Construction of exits - Thresholds
BCA Section J	2016	Energy efficiency
BCA J3.4	2016	Energy efficiency - Building sealing - Windows and doors
NATSPEC DES 015	2007	BCA - NCC Volume One Energy efficiency provisions
NATSPEC DES 018	2008	Bushfire protection
NATSPEC DES 020	2011	Fire behaviour of building materials and assemblies
NATSPEC DES 032	2014	Airborne sound insulation
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC PRO 006	2013	Glass types used in buildings
NATSPEC TR 01	2018	Specifying ESD
WoodSolutions 10	2015	Timber windows and doors
AAMA 800	2016	Voluntary specifications and test methods for sealants
NFRC 100	2017	Procedure for determining fenestration product U-factors
NFRC 200	2017	Procedure for determining fenestration product solar heat gain coefficient and visible transmittance at normal incidence
ISO 717		Acoustics - Rating of sound insulation in buildings and of building elements
ISO 717-1	1996	Airborne sound insulation