

0461P VIRIDIAN GLAZING

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to VIRIDIAN glazing in framed openings to windows, doors and curtain walls based around AS 1288. It is also relevant to:

- Structural glass assemblies.
- Internal glazed partitions and glass applied wall finishes.
- Glass balustrades.
- Mirrors.
- Glass shower screens.

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:

- *0421 Roofing – combined* for glass roofs.
- *0432 Curtain walls*.
- *0451 Windows and glazed doors*.
- *0455 Door hardware*.
- *0462 Structural silicone glazing* for adhesive fixed glazing.
- *0463 Glass blockwork*.
- *0467 Glass components* for mirrors, shower screens and balustrades.
- *0524 Partitions – glazed* for glazed internal partitions.
- *0641 Applied wall finishes* for glass lining to sheeted partitions.

Documenting this and related work

You may document this and related work as follows:

- *0461 Glazing* has been retained for use, as a stand alone worksection, in conjunction with *0432 Curtain walls*, *0462 Structural silicone glazing* and site glazed situations. Coordinate as appropriate.
- For specifying glass, see NATSPEC TECHnote PRO 006.

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:

- Visible light transmission, U-Value and solar heat gain coefficient.

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

- Warranties and guarantees.

Specifying ESD

The following may be specified using included options:

- Thermal performance to reduce heating/cooling load by specifying the required U-Value and SHGC.
- Glass selection with an acceptable Visible transmittance for natural lighting.

- High performance glass, e.g. low-e, self-cleaning glass.

The following may be specified by including additional text:

- Recycled material content.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

Viridian is the sum of two parts

Viridian is Australia's number one glass provider and the only manufacturer of float glass and hardcoat performance glass products in Australia. Being a part of CSR Building Products, and with a long history of glass making in Australia, Viridian is able to offer comprehensive glass and glazing solutions across Australia and New Zealand.

Viridian was created in 2007 when CSR acquired Pilkington Australia and DMS Glass. This enabled CSR to strengthen its already impressive range of building and construction products by adding glass and glazing capabilities.

Both Pilkington and DMS have proud histories of new and innovative ideas. Viridian continues that tradition of innovation and our goal is to help the building industry to use glass in extraordinary ways.

The Viridian brand will continue the Pilkington and DMS tradition of providing ingenious and environmentally sustainable glass solutions for our truly unique environment. Viridian Glass, in all of its forms, will bring us light, views, warmth and a sense of space. At the same time it will offer protection from noise, dust, pollution, glare, intruders and onlookers. Viridian offers glass that transmits light yet blocks heat, and glass that can clean itself.

1.1 RESPONSIBILITIES

General

Requirement: Provide VIRIDIAN glazing, as documented.

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

Performance

Thermal qualities: Visible light transmission, U-Value and solar heat gain coefficient, as documented.

Thermal safety assessment

Solar control glass may be subject to thermal stress which could result in spontaneous breakage, and should therefore be thermally assessed before installation.

Viridian offer a thermal safety assessment as a free service at the early design stage. Contact Viridian for assistance.

1.2 COMPANY CONTACTS

Viridian technical contacts

Website: www.viridianglass.com

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

Glazing

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

SAA HB 125 provides information on the products available in the context of the BCA, AS 1288 and AS/NZS 2208.

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 Sections 5 and 6. The maximum spans of various glasses are shown in AS 1288 Figure 4.1 and AS 1288 Figure 4.38.

Show or 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.

Where thickness is determined by 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.

Materials and installation: To AS 1288.

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

The standard specifies requirement 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.

Roof glazing: To AS 1288 Section 6.

AS 1288 Appendix E gives guidance on fracture characteristics.

Terminology for work on glass: To AS/NZS 4668.

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: www.viridianglass.com/Knowledge

Viridian's TechDirect technical documents include:

- Cleaning and handling of glass.
- Thermal safety.
- Heat soaking.
- Glass processing.
- Warranties.

1.6 INTERPRETATION

Abbreviations

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

- FRL: Fire-resistance level.

FRL means the grading periods in minutes for a) structural adequacy/b) integrity/c) insulation, expressed in that order, all determined in accordance with BCA Spec A2.3.

- R_w: Weighted sound reduction index.

Refer to NATSPEC TECHnote DES 032 for information on airborne sound insulation.

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

1.7 SUBMISSIONS

Balustrade design

Certification: Submit a professional engineers' certificate confirming conformance with AS/NZS 1170.1 clause 3.6.

AS/NZS 1170.1 clause 3.6 deals with imposed loads on barriers, including parapets, balustrades and railings.

Certification

Design: Submit an engineers' certificate confirming conformance to AS 1288.

Certification for a particular project may not be required if the window system is a nominated product that conforms to AS 2047 Appendix B.

Thermal safety assessment

Consider obtaining a thermal safety assessment from the glass manufacturer at the early design stage.

Ceramic-coated spandrel glass: Submit a report, from the manufacturer, certifying that the glass meets the Fallout Resistance Test requirements of ASTM C1048.

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.

Installation

Glazing: Provide certification from the fabricator that the method of glazing, the selection of sealant systems and the conditions next to the glass conforms to the following:

- Compatible with the edge seal of insulating glass units (IGUs) and self cleaning glass.
- Will not be detrimental to the long term structural performance, weathering capabilities and visual qualities of the glass.

Glazier's data: Submit the glazing subcontractor's statement certifying the following:

- A satisfactory thermal safety assessment.
- The assembled frame provides for the required glazing clearances and tolerances, and maximum and minimum joint configurations, based on the bow, or warp characteristics of the required glass types, and is ready for glazing.

Site glazing: If site glazing is intended, submit proposals.

Operation and maintenance manuals

Requirement: Submit manufacturers' published recommendations for service use.

Samples

Size: Submit samples of glazing materials, each at least 100 x 100 mm, showing documented visual properties and the range of variation, if any, for each of the following types of glass:

- Clear or toned glass.
- Low E (emissivity) coated glass.
- Patterned or obscured glass.
- Ceramic coated glass.
- Wired glass.
- Painted glass.
- Laminated glass.
- Insulating glass units.
- Mirror.

Edit as required.

Customised samples

Note: These samples may incur a surcharge from Viridian.

Size: Submit samples of glazing materials, each at least 300 x 300 mm, showing documented visual properties and the range of variation, if any, for each of the following types of glass:

- Ceramic painted, including pattern or solid coverage glass.
- Digital printed glass.
- Specialised laminated, including structural glazing, blast and bullet resistant, security and high performance/energy efficient glass.
- Insulating glass units.

Edit as required.

Shop drawings

Requirement: Submit shop drawings showing the following information:

- Method of glazing.
- Rebate depth.
- Edge restraint.
- Clearances and tolerances.
- Glazing gaskets and sealant beads.

Warranties

Requirement:

- Submit the following: [complete/delete]

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:

- Glass products before they are installed.

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

Hold points, if required, should be inserted here.

2 PRODUCTS

2.1 GENERAL

Product substitution

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

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

Heat soaking

Requirement: All toughened and heat strengthened glass products.

Standard: To EN 14179-1.

Heat soak testing is a destructive test, which reduces the likelihood of spontaneous breakage by converting impurities such as nickel sulfide inclusions.

Heat strengthening

Requirement: Heat strengthen all glass that requires extra strength and thermal resistance.

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

2.2 GLASS

Go to www.viridianglass.com/sitemap.aspx for quick access to product links.

Glass and glazing materials

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.

Bullet-resistant glazing panels

Standard: To AS/NZS 2343.

Product: Viridian BulletGuard™.

Classification: [complete/delete]

These are defined in AS/NZS 2343 as follows:

- Class G0 – resistant to attack by a 9 mm military parabellum hand gun.
- Class G1 – resistant to attack by a 357 magnum hand gun.
- Class G2 – resistant to attack by a 44 magnum hand gun.
- Class R1 – resistant to attack by a 5.56 mm rifle.
- Class R2 – resistant to attack by a 7.62 mm rifle.
- Class S0 – refer to Appendix B Table B1.
- Class S1 – refer to Appendix B Table B1.
- Special class – refer to Appendix B Table B1.

Panel materials: [complete/delete]

The standard allows any combination of glass or plastic. If particular materials are required, say so here.

Panel opacity: [complete/delete]

Select from transparent or opaque. Delete if not required.

Safety glasses

Toughened glass product: Viridian VTough™.

Laminated glass product: Viridian VLam™.

Wired glass product: Viridian ScalaTexture Wired™.

Standard: To AS/NZS 2208.

AS/NZS 2208 includes toughened, laminated, wired and organic-coated glass, and safety glazing plastics. 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.

Certification: Required.

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

Type: Grade A to AS 1288.

Heat soaking: Heat soak test all toughened glass to the requirements of the Viridian Heat Soaking Information Sheet.

Viridian Heat Soaking Information Sheet: Contact Viridian to obtain a copy or see the website.

Consult with Viridian if laminated glass has external exposed edges.

Ceramic-coated glass

Product: Viridian Seraphic™.

Maximum size: 4500 x 2200 mm Seraphic includes standard colours and designs, and custom colours and designs.

Description: Heat strengthened or toughened glass with a coloured ceramic coating fused to and made an integral part of the surface.

Standard: To ASTM C1048, Condition B.

Opacified glass

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

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

Standard: To ASTM C1048.

Insulating glass units (IGUs)

Maximum size: 2700 x 4500 mm. Nominate the variable properties in **Selections**.

Product: Select from the following:

- Viridian ThermoTech™.
- Viridian ThermoTech Low E™.
- Viridian PerformaTech™.

Manufacture and installation: To AS/NZS 4666.

Glass thickness selection: To AS 1288.

Exposed edge seal: Advise the manufacturer at the time of order if the edge seal (secondary seal) of the IGU is subject to UV or sunlight.

Structural silicone must be used if the IGU is being used in a structural application, or the secondary seal is exposed to UV.

2.3 GLAZING MATERIALS

If windows and glazed doors are selected as complete proprietary items, delete this clause.

General

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

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 specifications 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 sealer which are elastic or ductile compounds with maximum slump of 2.5 mm.
- 803.3 (Type II): Self levelling narrow joint sealer 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 definitions:

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

Non-drying sealant: To AAMA 800, specification 809.2.

AAMA 800 non-drying sealant definitions:

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

Expanded cellular glazing tape: To AAMA 800, specification 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 recommended jointing and pointing materials which are compatible with each other and with the contact surfaces and non-staining to finished surfaces. Do not provide bituminous materials on absorbent surfaces.

For structural glazing applications utilising IGUs with thermoplastic spacers (Viridian ThermoTech TPS®), Dow Corning 991 or 995 must be used as the weather sealant or structural glazing sealant.

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 (VHB) tape schedule

Tape type	Material	Location or function	Dimensions

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.

Priming

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 which do not absorb water.

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

2.4 GLASS IDENTIFICATION

Safety glazing materials

Identification: Identify each piece or panel, to AS 1288.

Identification: See AS 1288 clause 5.23.2. 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.

Noise reducing glazed assemblies

Identification: Label each panel with a legible non-permanent mark, self-destroying when removed, stating and certifying the R_w rating, and identifying the testing authority. Remove when directed.

Bullet-resistant panels

Marking: To AS/NZS 2343.

2.5 ANCILLARY MATERIALS

Extruded gaskets and seals

Location or function: [complete/delete]

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

- Rubber products (neoprene, ethylene propylene diene monomer (EPDM) or silicone rubber): To BS 4255-1.
- Flexible polyvinyl chloride (PVC): To BS 2571, E type compounds, colour fastness grade B.

Pile weather strips

Standard: To AAMA 701/702.

Standard: AAMA 701/702 is a guide to selecting pile weather strips used in windows and doors. It defines requirements to restrict air and water penetration.

Location: [complete/delete]

Material: 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.

2.6 MIRRORS

Reflective surface

Type to AS 1288: Silver layer deposited on the glass or glazing plastic.

Protective coatings: Copper free coating at least 5 μm thick, and 2 coats of mirror backing and edge sealing paint having a total dry film thickness at least 50 μm .

Venetian silvered mirror (one way vision glass): 15 mm wide silvered strips alternating with 3 mm wide clear strips.

Safety mirror

Type to AS 1288: Vinyl backed Grade A safety mirror.

Safety compliance: To AS/NZS 2208.

Solid backed annealed glass mirrors

Where mirrors are required, by AS 1288, to be Grade A safety glass, ordinary annealed glass may be substituted when the panel is fully backed by and completely adhered to a solid material. Mirrors with backing avoid the distortion problem associated with toughened mirror glass.

Backing: 9 mm waterproof plywood.

Adhesive fixing to backing: Non-acidic silicone adhesive at the rate recommended by the manufacturer.

2.7 SHOWER SCREENS

Type

Description: Proprietary frameless system or a system comprising frames of extruded aluminium, stainless steel, or PVC-U, assembled around safety glass to form fixed panels and sliding, hinged or pivoted doors.

Shower screen systems

General: Conform to **SELECTIONS**.

Consult Viridian for available systems. Grade A safety glass is required.

2.8 GLASS BALUSTRADES

Glass balustrade systems

General: Conform to **SELECTIONS**.

See Technical Briefing on glass balustrades at Tech Direct:

www.viridianglass.com/ViridianImageLibrary/Knowledge/TechDirect/GlassBalustrades.pdf.

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.

Processing: Refer to manufacturer's documents for further details. Refer to the Viridian website – glass processing.

3.2 INSTALLATION

Glazing

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 glazing.

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

Toughened glass: Do not cut, 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.

Where the glazing system or method is not addressed by the installation provisions of AS 1288 (e.g. patent glazing) comply with the recommendations of the system and materials manufacturer.

Specify in the *0462 Structural silicone glazing* or *0432 Curtain walls* worksection particular installation methods and detailed performance testing requirements for water and airtightness.

Preglazing

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

Curtain walls: Supply inclusive of glazing, shop preglazed.

Site glazing

Minimum dimensional requirements: Edge clearance, edge cover, front clearance and back clearance to AS 1288.

Preglazing and **Site glazing** are alternatives, edit as appropriate. Nominate the face.

3.3 FIXING MIRRORS**Vinyl backed Grade A Safety mirrors and solid backed annealed glass mirrors**

Four examples of fixing methods are listed below. Select one, or vary to suit the design. In wet or moist areas the space behind the mirror should be either well ventilated or entirely sealed.

Solid backed annealed glass mirrors:

- Installation to backing: Clean the back of the glass panel and apply with approved double sided adhesive tape for temporary support and affix directly to the backing.

Screw fixing: Fix direct to wall plugs with dome-headed chromium-plated screws in each corner and at 900 mm maximum centres around perimeter. Provide polyethylene sleeves and washers to prevent contact between screw and glass. Do not over-tension the screws.

Frame fixing: Proprietary aluminium frames to mirror perimeter, corners mitred. If unbacked, bed glass edges in a continuous resilient gasket. Attach the frame to the substrate with concealed screw fixings. Seal the frame to the substrate with paintable sealant which will not react with the mirror coating. Do not allow the sealant to contact the mirror back.

Bead fixing: Rebated timber beads to mirror perimeter, corners mitred. If unbacked, bed glass edges in a continuous resilient gasket. Screw fix the beads to the substrate.

Clip fixing: Fix direct to wall plugs with chromium-plated fixed clip and spring clip fixings at 900 mm maximum centres around perimeter. If unbacked, provide polyethylene or cork washers to prevent contact between clips and mirror back.

3.4 GLAZED SHOWER SCREENS**Water shedding**

Requirement: Provide an assembly which sheds water to the inside without retaining it on the frame surfaces. Seal the edge of the frame to adjoining surfaces with a resilient strip.

Sliding assemblies

Hanging: Hang the sliding sash on stainless steel or nylon sheaves on overhead channel track formed in the frame head, and fit nylon or equivalent bottom guides.

Hardware: Pull handles on both sides of sash, or of leading sash in multiple sash arrangements.

3.5 GLASS BALUSTRADES**Standard**

Design and fixing: To AS 1288, Section 7.

AS 1288, Section 7 covers structural balustrade panels or infill balustrade panels, defines edge support, classified handrails and provides deemed-to-comply tables for glass thickness.

3.6 COMPLETION**Replacement**

Requirement: After replacing damaged glass, leave the work clean, polished, free from defects, and in good condition.

Trade clean

Method: Conform to the Viridian cleaning advice as follows:

- See www.viridianglass.com/Products/Downloads/CLEANING_OF_GLASS_Viridian.pdf. For cleaning of Viridian ComfortPlus™, SolTech™, EnergyTech™ and Enviroshield Performance™ glass.
- See www.viridianglass.com/Products/Downloads/Comfortplus_Enviroshield_Performance_Comfortsave_Cleaning.pdf. For cleaning of Viridian Renew™ self-cleaning glass.
- See www.viridianglass.com/Products/Downloads/Renew_Maintenance_and_Hand_Cleaning.pdf.

Extent: All frames and glass surfaces inside and out.

Warranties

Viridian warranties: Refer to manufacturer's documents – warranties or www.viridianglass.com/knowledge/warranties/default.aspx.

Delete this subclause if glass and glazing materials are covered by a comprehensive window or curtain wall warranty, or if material performance is, for the purposes of the project, sufficiently covered by consumer protection legislation.

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

Include the **Window and glazed door performance schedule** if *0461 Glazing* is associated with the *0432 Curtain walls* or *0462 Structural silicone glazing* worksections. Delete the schedule if all windows are specified in the *0451 Windows and glazed doors* worksection.

Glass performance schedule

Property	Glass value	Property	Window value
U-Value (thermal transmittance, W/m ² .°K)		U-w (thermal transmittance, W/m ² .°K)	
Solar heat gain coefficient (SHGC)		SHGC-w	
Weighted sound reduction index (R _w)		Weighted sound reduction index (R _w)	
Visible transmittance (VLT)		T _{vw} (T _{vis})	
Reflectance (%)		Reflectance (%)	

If glass performance values are included in this table, co-ordinate with the **Window and glazed door performance schedule** in the *0451 Windows and glazed doors* worksection. Do not duplicate.

U-Value (thermal transmittance, W/m².°C): Note that the system U-Value for the glass and supporting frame, not glass only U-Values, must be used to determine NCC conformance. 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 provisions.

U-w: U-Value for total assembly. Generally fall between 2.0 to 7.0 W/m².K, including the effect of the frame, glass, seals and any spacers. Obtain from a window supplier or www.wers.net.

Solar heat gain coefficient (SHGC): Note that the system SHGC for the glass and supporting frame, not glass only SHGC values, must be used to determine NCC conformance. These should be obtained from tests to NFRC 200. Select the product to fulfil design and compliance requirements.

SHGC-w: SHGC for total assembly. This is expressed as a number between 0.1 and 1, lower values indicates less solar heat is being transmitted. Obtain from a window supplier or www.wers.net.

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

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

Reflectance %: A maximum value is often a Council requirement. Refer to the BCA Glazing calculator www.abcb.gov.au. Delete if this requirement is more appropriately covered in the **Glass schedules**.

4.2 GLAZING

Consider importing the Viridian glass selections to *0451 Windows and glazed doors*, *0462 Structural silicone glazing* and *0432 Curtain walls*.

Annealed glass schedule

Generic term/application	Product	Thickness	Colour	Process	Code
Float, general quality	Viridian VFloat™				
Float, optically	Viridian VFloat				

Generic term/application	Product	Thickness	Colour	Process	Code
clear	SuperClear™ TC				

Thickness: Available from 3 mm to 19 mm. Refer to the product webpages for thicknesses available for each colour.

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 to AS 1288 is usually within the competence of the glazing contractor.

Colour – general quality float: Select Clear, Grey, Green, Bronze, SuperGreen, SuperGrey, SuperBlue.

Process: Select heat strengthening for annealed tinted glass installed externally.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Bush fire resistant glass schedule

Generic term/application	Product	FRL	Colour	Code
Bush fire resistant glass	Viridian PyroGuard 40™			

Viridian PyroGuard™ product descriptions: Bushfire resistant insulated glass unit (IGU) consisting of a specially toughened and processed outer pane, and specially processed and processed coated inner pane, together with the framing system can achieve up to BAL 40.

FRL: Consult Viridian on the sizes and thicknesses available to achieve the required FRL. Glaze these glass products in an approved fire system and coordinate with the manufacturers of fire doors and partitions.

Colour: Select Clear, Green, Grey, Bronze or SuperGreen.

Code: e.g. G1, G2, designation code to locate the glass type.

Noise control glass schedule

Generic term/application	Product	Thickness	Colour	Coating	Code
Noise control laminated glass	Viridian VLam™ Hush				
Noise control and solar control laminated glass	Viridian ComfortHush™				

Thickness:

- Viridian VLam Hush™: Select from 6.5 mm, 8.5 mm, 10.5 mm or 12.5 mm to AS 1288.
- Viridian ComfortHush™: Select from 6.5 mm or 10.5 mm; to AS 1288.

Colour:

- Viridian VLam Hush™: Clear.
- Viridian ComfortHush™: Select from Clear Neutral.

Coating: Select ComfortHush low emissivity coating for improved energy efficiency.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Safety glass schedule

Generic term/application	Product	Thickness	Colour	Process	Code
Toughened	Viridian VTough™				

Generic term/application	Product	Thickness	Colour	Process	Code
Laminated - annealed	Viridian VLam™				
Laminated - toughened	Viridian VLam Tough™				
Wired	Viridian ScalaTexture Wired™				

Viridian ScalaTexture Wired™ is classed as a Grade B safety glass under AS 1288. It provides a lower level of safety compared to other safety glasses and thus more limited in its application. The maximum size of each product is as follows:

- Viridian VLam™: 3210 x 5500 mm.
- Viridian VTough™ and VLam Tough™: 2800 x 5500 mm.
- Viridian ScalaTexture Wired™: 3300 x 1985 mm.

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.

Viridian ScalaTexture Wired™ thickness:

- Viridian VTough™: 4 to 19 mm.
- Viridian VLam™ standard thickness: 6.38 to 12.38 mm.
- Viridian VLam™ custom thickness: 7.52 to 39.52 mm.
- Viridian ScalaTexture Wired™: 6 mm.

In other cases, the determination of thickness to AS 1288 is usually within the competence of the glazing contractor.

Colour: Refer to the product webpages for the colours available for each product and thickness.

Process: Select heat soak treatment for all toughened glass. Select heat strengthening for laminated annealed glass installed externally.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Security glass schedule

Generic term/application	Product	Thickness	Class	Colour	Code
Physical attack	Viridian IntruderGuard™				
Physical attack	Viridian AssaultGuard™				
Physical attack	Viridian AssaultGuard Ultra™				
Jail/detention glass products	Viridian JailGuard™				
Bullet resistant/ ballistic attack	Viridian BulletGuard™				
Blast resistant/ bomb attack	Viridian Bomb & BlastGuard™				

Document frame strengths and glazing methods to provide the level of security required.

Physical attack:

- Product: Select Viridian IntruderGuard™ for domestic and low level security applications, Viridian AssaultGuard™ for low to medium security applications, or Viridian JailGuard™ for high security applications.

Thickness:

- Viridian IntruderGuard™: Select 6.52 mm or 7.52 mm.
- Viridian AssaultGuard™: Select 9.52 mm or 11.52 mm.

- Viridian AssaultGuard Ultra™: Nominate the level of security, AssaultGuard Ultra™ 10 Minimum Security Glass, AssaultGuard Ultra™ 12 Medium Security Glass or AssaultGuard Ultra™ 14 Premium Security Glass.
- Viridian JailGuard™: Select from 10.28 mm – 16.50 mm. Nominate the level of security (see below) to determine thickness.

JailGuard Classification to AS 3555.1:

- Level 1 – 5 minutes One man using crow bar and sledge hammer.
- Level 2 – 3.5 minutes Two men using crow bar and sledge hammer.
- Level 3 – 3.5 minutes One man using portable power impact chisel and crowbar.
- Level 4 – 2.5 minutes Two men, one using portable power impact chisel and the other using a crowbar.
- Level 5 – This level not suitable for using glass.
- Level 6 – 1.2 minutes Two men, one using oxy-acetylene cutting torch and the other a small hand pick.

Ballistic attack: Select the class as defined in AS/NZS 2343 as follows:

- Class G0 – resistant to attack by a 9 mm military parabellum hand gun.
- Class G1 – resistant to attack by a 357 magnum hand gun.
- Class G2 – resistant to attack by a 44 magnum hand gun.
- Class R1 – resistant to attack by a 5.56 mm rifle.
- Class R2 – resistant to attack by a 7.62 mm rifle.
- Class S0 – refer to Appendix B Table B1.
- Class S1 – refer to Appendix B Table B1.
- Special class – refer to Appendix B Table B1.

Bomb attack: Determine the level of threat before developing a specification. Contact Viridian for assistance.

Colour/interlayer/coating: Select from a wide range of glass colour/interlayer colour and coating options. Refer to **Viridian Architectural Glass Guide** or the product webpages.

Code: e.g. G1, G2, designation code to locate the glass type.

Observation glazing schedule

Generic term/application	Product	Thickness	Colour	Code
One-way laminated mirror	Viridian Observa™			

Installation – Viridian Observa™: The reflective surface must be installed facing the subject side and higher lighting levels maintained on the subject side for this product to function as intended. A lighting level ratio of 1:7, observer:subject side, is recommended.

Thickness:

- Viridian Observa™: 8.76 mm to AS 1288.

Colour: Consult the manufacturer.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Textured glass schedule

Generic term/application	Product	Thickness	Colour/Pattern	Code
Patterned	Viridian ScalaTexture™			
Acid etch patterned	Viridian ScalaMirage™			
Ceramic coated – standard patterned	Viridian ScalaSeraphic™			
Architectural glass	Viridian ScalaDesign™			

Maximum dimensions:

- Viridian ScalaTexture™: Sheet sizes vary with pattern. Refer to **Viridian Architectural Glass Guide** or the product webpage.
- Viridian ScalaMirage™: All product 3210 mm x 2250 mm except pattern Quadrio : 3210 mm x 2000 mm.

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.

Viridian ScalaTexture™ thickness:

- Annealed glass: 3 to 6 mm.
- Heat strengthened glass: 4 to 6 mm.
- Toughened glass: 4 to 6 mm.
- Laminated annealed glass: 6.76 to 13.52 mm.
- Laminated toughened glass: 7.52 to 13.52 mm.

Viridian ScalaMirage™ thickness:

- Annealed glass: 6 and 10 mm.
- Heat strengthened glass: 6 and 10 mm.
- Toughened glass: 6 and 10 mm.
- Laminated annealed glass: 10.38 and 12.38 mm.
- Laminated toughened glass: 11.52 and 13.52 mm.

Colour:

- Viridian ScalaTexture™: Select Clear, Bronze, Grey or White.
- Viridian ScalaMirage™: ScalaMirage™ products are produced on Low Iron glass.

Pattern: Refer to the product webpage for patterns available for each colour and thickness.

- Viridian ScalaTexture™: Wired glass: Glue Chip, Satinlite, Spotswood, Cathlite, Squalite or Polished Wire.
- Viridian ScalaMirage™: Fuzzy, Crossed Fuzzy, Rain, Crossed Rain, Tree, Nantahala, Cannes, Barcode, Celsius, Quadrio, Fabric, Structure, Linen, Circle Fade.

Code: e.g. G1, G2, designation code to locate the glass type.

Standard Seraphic Design Patterns

Select pattern in any of the above standard colours:

- 6 mm Circle.
- 3 mm Dots.
- 3 mm Reverse Dots.
- 5 mm Dots.
- Diamond.
- Checkerboard.
- 2 mm Line/2 mm Gap – Vertical or Horizontal.
- 5 mm Line/5 mm Gap – Vertical or Horizontal.
- 10 mm Line/10 mm Gap – Vertical or Horizontal.
- Spiders Wisp.
- Grid #1 – 3 mm Clear Block.
- Grid #2 – 6 x 15 mm.

Coloured glass schedule

Generic term/application	Product	Thickness	Colour/Pattern	Code
Ceramic coated – solid and translucent coloured	Viridian SpectraSeraphic™			
Back painted glass	Viridian SpectraColour™			
Pre-painted glass	Viridian SpectraElements™			

Generic term/application	Product	Thickness	Colour/Pattern	Code
Painted glass	Viridian SpectraDuo™			
Laminated – coloured	Viridian SpectraPrism™			

Viridian SpectraSeraphic™ maximum dimension: 2200 x 4500 mm.

Thickness:

- Toughened glass: 4 to 19 mm.
- Heat strengthened glass: 4 to 12 mm.
- Toughened laminated glass: 9.52 to 39.52 mm.

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 to AS 1288 is usually within the competence of the glazing contractor.

Colour and pattern: Refer to **Viridian Architectural Glass Guide** or the product webpages for representations of standard colours (solid and translucent) and patterns.

Standard Seraphic Colours

Select from the range of SpectraSeraphic™ standard colours.

Viridian **Seraphic Custom** – Use any colour from within the Dulux Master Palette Range, nominating the code and design of any pattern (as long as it can be replicated as a screen print). Typically the Custom range is limited to quantities greater than 100 m². Check with local Viridian office for further details.

Code: e.g. G1, G2, designation code to locate the glass type.

Viridian SpectraPrism™ thickness: 6.38 mm, 8.38 mm, 10.38 mm and 8.38 mm thick: 2440 x 3660 mm.

Colour: Select from the following:

- Transparent colours: Select from Sapphire, Aquamarine, Ruby Red, Coral Rose, Sahara Sun, Golden Light, Evening Shadow, Smoke Grey, Deep Red, True Blue.
- Translucent colours: Select from Cool White, Arctic Snow.
- Opaque colour: Pure White.

Viridian SpectraDuo™ glass is painted with paint specifically formulated for glass and the coating protected by vinyl sheet. It is classed as a Grade A safety glass under AS/NZS 2208, and is suitable for wardrobe doors and dry wall lining. It is not recommended where moisture is present, including but not restricted to kitchens or bathrooms. Nominate Seraphic for these applications.

- Maximum dimension: 1220 x 2760 mm.
- Thickness: 4 mm.
- Colour: Select White or Black.

Translucent glass schedule

Generic term/application	Product	Colour	Thickness	Process	Code
Acid etched glass	Viridian LuminaCloud™				
Laminated – translucent	Viridian LuminaMist™				

Viridian LuminaCloud™ sheets are acid-etched at the time of manufacture, ensuring an overall consistent finish. It is moisture and UV resistant, and suitable for both interior and exterior applications. The maximum panel size is 2250 x 3210 mm.

Colour: Select from Clear, Grey or Mirror.

Thickness:

- Annealed, heat strengthened or toughened glass: 4 to 12 mm.
- Laminated annealed glass: 8.36 to 25.52 mm.
- Laminated toughened glass: 9.52 to 25.52 mm.

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.

Code: e.g. G1, G2, designation code to locate the glass type.

- LuminaMist™ maximum dimensions:
- Viridian LuminaMist™ 6.38 mm and 8.38 mm thick: 2760 x 4280 mm.
- Viridian LuminaMist™ 10.38 mm and 12.38 mm thick: 2760 x 4600 mm.
- Viridian LuminaMist™ Grey™: 6.76mm thick: 4280 x 2760 mm.
- Viridian LuminaMist™ Soft White™: 6.38 mm, 8.38 mm, 10.38 mm and 8.38 mm thick: 2440 x 3660 mm.

LuminaMist™ thickness:

- Laminated annealed glass: 8.36 to 12.76 mm.
- Laminated toughened glass: 7.52 to 13.52 mm.

Laminated glass schedule

Generic term/application	Product	Colour	Thickness	Process	Code
Laminated – low reflectance	Viridian OptiView™				
Laminated – Switchable glass	Viridian FuturaSwitch™				

Maximum dimensions:

- Viridian OptiView™: 6.38 and 12.38 mm thick: 3302 x 2438 mm.
- Viridian FuturaSwitch™ : 10.02 mm to 22.02 mm thick : 1800 x 3400 mm

Thickness:

- Laminated annealed glass: 8.36 to 12.76 mm.
- Laminated toughened glass: 7.52 to 13.52 mm.

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.

Process: Nominate heat strengthened or toughened.

Refer to **Viridian Architectural Glass Guide** or the product webpages for representations of colours.

Code: e.g. G1, G2, designation code to locate the glass type.

Digital printed glass schedule

Generic term/application	Product	Thickness	Process	Code
Laminated – digital printed	DigiGlass™			
Digital print on glass	PixaGraphic™			

DigiGlass is a decorative laminate glass, consisting of two layers of glass with a photographic image printed directly on a DuPont PVB interlayer.

PixaGraphic™ uses ceramic inks to recreate graphics, artworks, images and logos by directly printing onto the glass surface.

Viridian DigiGlass™ and PixaGraphic™ can be manufactured from VFloat™, toughened safety glass VTough™ or SuperClear™ (low iron glass). Select from the following:

- Opaque: Opaque printed motif with white backing.
- Translucent: Translucent printed motif which may be backlit.
- Clear: Transparent printed motif with approximately 40% printed area.

Thicknesses: Select 7.52 mm, 9.52 mm, 11.52 mm, 13.52 mm, 17.52 mm, 21.52 mm or 25.52 mm.

Glass combinations: Any glass combination including Low E's, performance glass, Décor satin, mirror, low iron, heat strengthened and toughened.

Reflective glass schedule

Generic term/application	Product	Thickness	Process	Code
Reflective silver coating	Viridian MirraEcho™			
Laminated mirror	Viridian MirraShield™			
Safety mirror	Viridian MirraTrust™			
Toughenable mirror	Viridian MiraStar®			
Interactive mirror	Viridian FuturaScreen™			

Code: e.g. G1, G2, designation code to locate the glass type.

Viridian FuturaScreen™ maximum size:

- 3 mm: 3302 x 2438 mm.
- 6 mm: 3210 x 2438 mm.

Viridian FuturaScreen™ combine high reflectivity with high light transmission, it enables digital displays and video screens to be viewable when required, and concealed behind a mirrored surface when not.

Non-laminated solar control glass schedule

Generic term/application	Product	Thickness	Colour	Code
Solar control - tinted	Viridian VFloat™ Toned			
Solar control - tinted	Viridian VFloat™ High Performance Toned			
Solar control with low E coating	Viridian EVantage™			
Solar control with low E coating	Viridian EnergyTech™			
Solar control with reflective coating	Viridian Soltech™			

Specify heat strengthened or toughened glass. Consult with Viridian to determine the appropriate treatment for specific applications. Maximum panel dimension is 3300 x 5100 mm.

Thickness:

- Viridian VTough™ toughened glass: 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm, 15 mm, 19 mm.
- Viridian heat strengthened glass: 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm.

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 to AS 1288 is usually within the competence of the glazing contractor.

Colour:

- Viridian VFloat Toned™: Select Grey, Green or Bronze.
- Viridian VFloat High Performance Toned™: Select SuperGrey, SuperGreen or SuperBlue.
- Viridian EVantage™: Select Grey, Bronze, BlueGreen, Clear, SuperBlue or SuperGreen.
- Viridian EnergyTech™: Select from Clear, Green, Grey or Supergreen.
- Viridian Soltech™: Grey or Neutral.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Laminated solar control glass schedule

Generic term/application	Product	Thickness	Colour	Code
Solar control – low E laminate	Viridian ComfortPlus™			
Solar control – low E laminate	Viridian EVantage™			
Solar control – low E laminate	Viridian EnviroShield Performance™*			

Viridian produce an extensive range of energy management glasses which includes many combinations of glasses, interlayers, coatings and insulating cavities. Consult with Viridian for advice on the most appropriate product for a given application.

*Nominate Viridian Enviroshield Performance ITO or Enviroshield Performance XIR.

Specify heat strengthened or toughened glass. Consult with Viridian to determine the appropriate treatment for specific applications.

Maximum dimensions: Refer to the product webpages for sizes available for each product.

Thickness:

- Viridian VLam™ laminated glass: 6.38 to 12.38 mm.
- Viridian VLam™ toughened laminated glass: 7.52 to 39.52 mm.
- Viridian ComfortPlus™: Laminated: 6.38 to 12.38 mm. Toughened laminated: 7.52 mm to 12.38 mm.
- Viridian EVantage™: Laminated: 10.38 to 17.52 mm. Toughened laminated: 11.52 mm to 17.52 mm.
- Viridian Enviroshield Performance ITO™: 6.76 mm to 12.76 mm.
- Viridian Enviroshield Performance XIR™: Laminated: 6.76 to 21.52 mm. Toughened laminated: 7.52 to 21.52 mm.

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 to AS 1288 is usually within the competence of the glazing contractor.

Colour:

- Viridian ComfortPlus™: Select from Clear 82, Grey 40, Green 71, Neutral 59, Green 49, Grey 37, SuperGreen 49 or SuperBlue 44.
- Viridian EVantage™: Select Grey, Bronze, BlueGreen, Clear, SuperBlue or SuperGreen.
- Viridian Enviroshield Performance™ ITO: Select ITO Clear 74, ITO Green 67, ITO Neutral 54, ITO Grey 33, ITO SuperGreen 45 or ITO SuperBlue 40.
- Viridian Enviroshield Performance™ XIR: Select XIR Clear 71, XIR Clear 70, XIR Blue 57, XIR Green 53, XIR Bronze 41 or XIR Grey 34.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Insulating glass unit (IGU) schedule

Properties	A	B	C
Product	Viridian ThermoTech™	Viridian ThermoTech Low E™	Viridian PerformaTech™
Outer pane: Glass type			
Outer pane: Thickness (mm)			
Outer pane:			

Properties	A	B	C
Colour/coating type			
Inner pane: Glass type			
Inner pane: Thickness (mm)			
Inner pane: Colour/coating type			
Spacer width (mm)			
Gas filling: Type			
Secondary seal			
Glass colour			
Low E coating			
Reflective coating			

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 the manufacturers for available combinations. If the units are intended for noise reduction, it may be necessary to specify 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: Select Thermoplastic Spacer (Viridian ThermoTech TPS®) or Metal.

Spacer width:

- Metal Spacer: Select from 6 mm, 8 mm, 10 mm, 12 mm, 16 mm, or 18 mm.
- Thermoplastic spacer: Thickness between 6 to 18 mm in 0.1 mm increments.

Gas filling:

- Select air with metal spacers.
- Select argon with thermoplastic spacers.

Secondary seal: Select from:

- Polysulfide (standard).

Structural silicone. If the edge seal (secondary seal) of the IGU is used in a structural silicone glazing system, or is subject to UV or sunlight, structural silicone must be used. For structural glazing applications utilising IGUs with thermoplastic spacers, Dow Corning 991 or 995 must be used as the weather sealant or structural glazing sealant. Advise Viridian of this at the time of order. It is the glazier's responsibility to consult with the sealant supplier to ensure the sealant used is compatible with the glass supplied, especially laminated and insulating glass units (IGUs).

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 to AS 1288 is usually within the competence of the glazing contractor.

Glass colour: Select Clear, Grey, Green, Bronze, SuperGrey, SuperGreen, SuperBlue. Nominate the pane to be coloured.

- Viridian PerformaTech™ Clear 206, Silver 196, Silver 236.

Low E coating: Select Viridian EnergyTech™, SolTech™, ComfortPlus™, ComfortHush™, EVantage™, Renew™ or Enviroshield Performance™ XIR. The orientation of coated faces depends on the application – consult with Viridian. Nominate coating to one or two panes.

Code: e.g. G1, G2, designation code to locate the glass type. Repeat the table for each designation code.

Easy cleaning glass schedule

Generic term/application	Product	Thickness	Colour	Code
Self-cleaning	Viridian Renew™			

Generic term/application	Product	Thickness	Colour	Code
Easy cleaning	Viridian DuraClean™			

Viridian Renew™:

- Product application: Self-cleaning, external applications only.
- Thickness: Select from 6.38 mm, 8.38 mm, 10.38 mm or 12.38 mm.
- Colour: Select from Clear, Grey, Green, Bronze or SuperGreen.
- Code: e.g. G1, G2, designation code to locate the glass type.

Viridian DuraClean™:

- Product application: Easy cleaning product, shower screen only.

4.3 GLASS COMPONENTS

Mirror schedule

Property	M1	M2	M3
Product			
Size W x H (mm)			
Thickness (mm)			
Mirror type			
Edge processing			
Colour			
Glass type			
Fixing			
Frame: Material			
Frame: Finish			
Frame: Colour			
Heating/demisting installation: Product			

M1, M2, M3: 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 Viridian MirraEcho™ or Viridian MirraTrust™.

Size W x H (mm): Note the diameter if the mirror is circular. Check AS 1428.1 for disabled person's facilities. The BCA also cites AS 1428.1-2001.

Thickness:

- Viridian MirraEcho™: Select from 3 mm, 4 mm, 5 mm, 6 mm, 6.38 mm, 8.38 mm or 10.38 mm.
- Viridian MirraTrust™: Select from 3 mm, 4 mm, 5 mm or 6 mm.

Colour:

- Viridian MirraEcho™: Select from Silver, Bronze or Grey.
- Viridian MirraTrust™.: Select Silver with a vinyl safety backing.

Edge processing: e.g. Ground, pencil, polished pencil edge, bevelled. Specify rough arris if edges are concealed.

Glass type: Grade A safety glass or annealed glass with backing, or annealed glass if it is protected by fixed joinery to AS 1288 clause 5.8.1.

See NATSPEC TECHnote PRO 006 for guidance on specifying glass in buildings.

Processing: Edge treatment: Ground arris.

Fixing: Screw, frame bead or clip fixing. Document the size and location of holes for screw fixings.

Shower screen schedule

Property	Ss1	Ss2	Ss3
Configuration			
Size W x D x H (mm)			
Frame type			
Door type			
Glass type	Viridian VTough™	Viridian VTough™	Viridian VTough™
Hardware			

Ss1, Ss2, Ss3: 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.

Configuration: e.g. straight run, door with return to right hand side or document on the drawings.

Size: Specify overall size for simple screens. Document others on the drawings.

Frame type: Extruded aluminium, PVC-U, Stainless steel, Frameless.

Door type: Sliding, Hinged, Pivot. State if more than one door leaf.

Glass type: Laminated or Toughened. See AS 1288 *Framing of doors and panels*. Specify colour and pattern if required.

Hardware: Pull handles on both sides of sash, or of leading sash in multiple sash arrangements.

Glass shelving schedule

Property	Gs1	Gs2	Gs3
Size W x H (mm)			
Glass type			
Thickness (mm)			
Edge treatment			
Fixing			

Gs1, Gs2, Gs3: 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.

See Guidance for **Mirrors schedule**.

4.4 STRUCTURAL BALUSTRADES FOR LESS THAN 1000 MM LEVEL DIFFERENCE

Refer to BCA 3.9.2 for Class 1 and Class 10 buildings.

Frameless cantilevered glass

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.1.

Panel size (mm): [complete/delete]

Pocket fixing: [complete/delete]

- Pocket size: [complete/delete]

- Pocket set-back from concrete face: [complete/delete]

- Glazing and seating materials: [complete/delete]

Edit fixing method as appropriate. Preferably include the requirements on the drawings and delete the subclause.

Non-load supporting handrail: [complete/delete]

Select a product or delete as appropriate.

Two edge support (two opposite edges)

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.2.

Panel width (span) (mm): [complete/delete]

Post and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Non-load supporting handrail: [complete/delete]

Select a product or delete as appropriate.

Three edge support (bottom and two sides)

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.2.

Panel width (span) (mm): [complete/delete]

Post, bottom rail and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Non-load supporting handrail: [complete/delete]

Select a product or delete as appropriate.

4.5 STRUCTURAL BALUSTRADES FOR LEVEL DIFFERENCES EQUAL OR GREATER THAN 1000 MM

Frameless cantilevered glass with interconnected handrail

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.1.

Panel size: [complete/delete]

Pocket fixing: [complete/delete]

Pocket size: [complete/delete]

Pocket set-back from concrete face: [complete/delete]

Glazing and seating materials: [complete/delete]

Edit fixing method as appropriate. Preferably include the requirements on the drawings and delete the subclause.

Interlinking handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

Two edge support (two opposite edges) with interconnected handrail

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.2.

Panel width (span): [complete/delete]

Post type and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Interlinking handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

Three edge support (bottom and two sides) with interconnected handrail

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass height: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.2.

Panel width (span): [complete/delete]

Post and bottom rail type, and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Interlinking handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

4.6 INFILL BALUSTRADES

Four edge support

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass panel size: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.3.

Balustrade height: [complete/delete]

Post and bottom rail type, and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Structural handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

Two edge support continuous edge fixing

Glass product: [complete/delete]

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass panel size: [complete/delete]

Design load kN/m: [complete/delete]

Glass thickness: To AS 1288 Table 7.3.

Edge support arrangement: [complete/delete]

Select bottom rail and handrail support or post support.

Balustrade height: [complete/delete]

Post and frame type, and glass edge fixing: [complete/delete]

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Structural handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

Two edge support (mechanical fixings)**Glass product: [complete/delete]**

Select Viridian VTough™ or VLam™ (select either laminated heat strengthened glass or laminated toughened glass).

Glass panel size: [complete/delete]**Design load kN/m: [complete/delete]**

Glass thickness: To AS 1288 Table 7.3.

Edge support arrangement: [complete/delete]

Select bottom rail and handrail support or post support.

Balustrade height: [complete/delete]**Post type: [complete/delete]**

Describe, refer to detail or select a product. Nominate channel edge fixing or patch fixing.

Post fixing: [complete/delete]

Describe or refer to details.

Patch fixings: [complete/delete]

Describe, select a product or refer to details.

Structural handrail: [complete/delete]

Describe, refer to detail or select a product. Note fixing.

REFERENCED DOCUMENTS**The following documents are incorporated into this worksection by reference:**

AS 1170		Structural design actions
AS/NZS 1170.1	2002	Permanent, imposed and other actions
AS 1288	2006	Glass in buildings - Selection and installation
AS/NZS 2208	1996	Safety glazing materials in buildings
AS/NZS 2343	1997	Bullet-resistant panels and elements
AS/NZS 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
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
AAMA 800	2016	Voluntary specifications and test methods for sealants
ASTM C920	2014	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	2005	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 ISO 717		Acoustics - Rating of sound insulation in buildings and of building elements
AS/NZS ISO 717.1	2004	Airborne sound insulation
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 1428.1	2009	General requirements for access - New building work
AS 2047	2014	Windows and external glazed doors in buildings
AS 3555		Building elements - Testing and rating for intruder resistance
AS 3555.1	2003	Intruder-resistant panels
SAA HB 125	2007	The glass and glazing handbook (including guide to AS 1288, Glass in buildings - Selection and installation)
BCA 3.9.2	2016	Acceptable construction - Safe movement and access - Barriers and handrails
BCA Spec A2.3	2016	General provisions - Fire-resistance of building elements
NATSPEC DES 015	2007	BCA - NCC Volume One Energy efficiency provisions

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	2016	Specifying ESD
NFRC 100	2014	Procedure for determining fenestration product U-factors
NFRC 200	2014	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