

## 4521NR ALTUS RESIDENTIAL ALUMINIUM WINDOWS AND DOORS

### 1. GENERAL

This section relates to the fabrication, supply and installation of **Altus NZ Ltd (Altus)** residential aluminium windows and doors, manufactured by **Nulook Windows & Doors**.

It includes:

- WeatherTight™ residential/light commercial aluminium windows and doors
- WeatherTight™ residential Flushline Sliders and Stacker Doors
- SovereignSeries™ residential/commercial aluminium windows and doors
- 41Architectural residential/light commercial aluminium windows and doors
- AllSeasons™ residential aluminium windows and doors (with thermal break)
- Roof Windows
- Specialised Windows
- Conservatories
- Replacement Windows & Doors
- Louvres
- Highbrook Louvres
- Hardware and furniture
- Flashings and sealants

#### 1.1 RELATED WORK

Refer to ~ for ~

#### 1.2 ABBREVIATIONS AND TERMS

SLS	Serviceability limit state
ULS	Ultimate limit state
WANZ	Windows Association of Zealand
PQAS	Powder Coating Quality Assurance System

#### Documents

#### 1.3 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC B1	Structure
<a href="#">NZBC B2/AS1</a>	Durability
<a href="#">NZBC E2/AS1</a>	External moisture
<a href="#">NZBC E2/VM1</a>	External moisture
<a href="#">NZBC F4/AS1</a>	Safety from falling
<a href="#">NZBC H1/VM1</a>	Energy efficiency
<a href="#">NZBC H1/AS1</a>	Energy efficiency
<a href="#">AS/NZS 1580.108.1</a>	Methods of test for paints and related materials - Determination of dry film thickness on metallic substrates - Non destructive methods
<a href="#">AS/NZS 1170.2</a>	Structural design actions - Wind loads
<a href="#">NZS 1170.5</a>	Structural design actions - Earthquake actions - New Zealand
<a href="#">AS/NZS 1734</a>	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
<a href="#">AS/NZS 1866</a>	Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes
AAMA 2604.05	Performance requirements and test procedures for high performance organic coatings on aluminium extrusions and panels
<a href="#">NZS 3604</a>	Timber-framed buildings
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
BS 3900	Methods of tests for paints, Part C5: Determination of film thickness
<a href="#">NZS 4211</a>	Specification for performance of windows
<a href="#">NZS 4223.3</a>	Glazing in buildings - Human impact safety requirements
<a href="#">AS/NZS 4680</a>	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
<a href="#">WANZ Installation Guide</a>	

	The Wanz Guide to Window Installation as described in E2/AS1 Amendment 6
<a href="#">Wanz PQAS</a>	Powder Coating Quality Assurance System
<a href="#">Wanz SFA 3503-03</a>	Anodic Oxide coatings on wrought aluminium for external architectural application (2005)
BRANZ EM6	Evaluation method
BRANZ BU 337	Protecting Window Glass from Surface Damage
US Federal Specification	
<a href="#">TT-S-001543A</a>	Sealing compound, silicone rubber base (for caulking, sealing and glazing in buildings and other structures)
TT-S-00230C	Sealing compound, elastomeric type, single component (for caulking, sealing and glazing in buildings and other structures)

#### 1.4 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work.  
 Altus NZ Ltd product literature  
 Nulook Windows & Doors Specifier's Guide

Manufacturer/supplier contact details:

Company: **Altus NZ Ltd**  
 Web: [www.altus.co.nz](http://www.altus.co.nz)  
[www.nulook.co.nz](http://www.nulook.co.nz)  
 Email: [janet.grosse@altus.co.nz](mailto:janet.grosse@altus.co.nz)  
 Marketing Manager  
 Telephone: 09 272 1700

#### Warranties

#### 1.5 WARRANTY - MANUFACTURER/FABRICATOR

Provide a material manufacturer/fabricator warranty:  
 5 years: For fabrication

Refer to the general section for the required form of 1237WA WARRANTY AGREEMENT and details of when completed warranty must be submitted.

#### 1.6 WARRANTY - INSTALLER

Provide an installer warranty:  
 2 years: For installation

- Provide this warranty in the installer standard form.

Refer to the general section 1237 WARRANTIES for additional requirements.

#### Requirements

#### 1.7 SAMPLES

~

#### 1.8 NO SUBSTITUTIONS

Substitutions are not permitted to any specified **Altus NZ Ltd** aluminium system, or associated components and products.

#### 1.9 QUALIFICATIONS

Work to be carried out by tradesmen experienced, competent and familiar with the materials and techniques specified.

- 1.10 COMPLIANCE  
Windows and doors to be manufactured and installed to [NZBC E2/AS1](#).
- 1.11 SHOP DRAWINGS AND INSTALLATION DETAILS  
Shop drawings to show the general arrangement of the aluminium joinery including, but not be limited to:  
Construction details (minimum scale 1:5) showing the interface between joinery elements and the building structure including: -  
- Jointing details and method of fixing between individual elements and between this installation and adjacent work  
- Interaction between claddings and linings  
- Flashing details  
- Sealants and air seals  
- Non standard fixing details including bracketing
- And where required the following: -  
- Design calculations  
- Producer Statement in the form PS1 Producer Statement Design  
- Rebate sizes  
- Dimensions of all typical elements and of any special sizes and shapes  
- Provision for the exclusion and/or drainage of moisture  
- Provision for adjustment of fixings to ensure true alignment of windows and doors  
- Sealant types and full size sections of all sealants and backing rods  
- Provision for thermal movement  
- Provision for seismic movement and movement under wind loads  
- Sequence of installation  
- Glazing specification and details
- Where requested provide the following additional information  
- Information of Professional Indemnity Insurance held by the person providing the calculations and shop drawings
- Complete shop drawing review before commencing fabrication.
- 1.12 CERTIFICATION  
Provide evidence of a certificate by a laboratory accredited by International Accreditation of New Zealand that the windows and doors offered comply with the requirements of [NZS 4211](#).
- Performance**
- 1.13 PERFORMANCE - WINDOWS AND DOORS  
To [NZS 4211](#), including:  
- deflection, opening sashes, air infiltration, water penetration, ultimate strength, torsional strength of sashes, marking.  
Refer to SELECTIONS.
- 1.14 STRUCTURAL/WEATHER-TIGHTNESS  
The structural and weather-tight performance of the completed joinery, the glazing and infill panels is the responsibility of the window fabricator.
- Performance - Wind (design by contractor)**
- 1.15 DESIGN PARAMETERS - NON SPECIFIC DESIGN  
Design the installation to the wind zone parameters of [NZS 3604](#), table 5.4.  
Refer to SELECTIONS for wind zone.
- 1.16 DESIGN PARAMETERS - SPECIFIC DESIGN  
Design the installation to the wind pressure parameters of [AS/NZS 1170.2](#) Refer to SELECTIONS for ULS and SLS

## Finishes

- 1.17 CERTIFY COATINGS - POWDER COATING  
Certify on request, compliance with this specification and support with control and sampling records. Test for film thickness to BS 3900, part C5, method No. 4, using method (b) or to AS/NZ 1580.108.1 for certifying thickness and method (a) where any dispute arises as to the thickness provided.  
The coating should be applied by an applicator who can certify that the coating has been applied in accordance with the specification.

## 2. PRODUCTS

- 2.1 WINDOWS  
Refer to SELECTIONS for type and finish.
- 2.2 DOORS  
Refer to SELECTIONS for type and finish.
- 2.3 ROOF WINDOWS  
Refer to SELECTIONS for type and finish.
- 2.4 CONSERVATORIES  
Refer to SELECTIONS for type and finish.
- 2.5 REPLACEMENT WINDOWS AND DOORS  
Refer to SELECTIONS for type and finish.
- 2.6 LOUVRES  
Refer to SELECTIONS for type and finish.

## Materials

- 2.7 ALUMINIUM EXTRUSIONS  
Alloy designation to comply with [AS/NZS 1866](#). Branded and extruded for anodising or powder coating. Further information on anodising will be available later in the year.
- 2.8 ALUMINIUM SHEET AND STRIP  
Complying with [AS/NZS 1734](#) of suitable thickness. Rolled for anodising or powder coating. Further information on anodising will be available later in the year.  
Alloy designation: 5251 - H16 or 5005 - H16
- 2.9 STAINLESS STEEL SHEET AND STRIP  
Type: 316 austenitic steel  
Finish grade: 2B (satin lustre)
- 2.10 GLASS  
Refer to the glazing section for glass types and installation.

## Reveals

- 2.11 REVEALS - TIMBER PAINTED  
Timber reveals for paint finish with all sides primed grooved for wall linings or flush finished for architraves.
- 2.12 REVEALS - ALUMINIUM  
Aluminium reveals fitted to frame via thermal break (exception being AllSeasons Suite due to inbuilt thermal break).

- 2.13 REVEALS - PVC  
Prefinished thermoplastic PVC reveals grooved for wall linings.

### Flashings

- 2.14 FLASHINGS GENERALLY  
To [NZBC E2/AS1](#), 9.1.10 **Windows and Doors**. Material, grade and colour of head flashings to match the window frames. Ensure that materials used for head, jamb and sill flashings are compatible with the window frame materials and fixings and cladding materials.

### Materials - roof windows

- 2.15 ROOF WINDOWS  
Refer to SELECTIONS/drawings for type and finish.

### Components for installation - direct fix systems

- 2.16 SILL PAN FLASHING  
To [NZBC E2/AS1](#), 9.1.10.5 **Windows and Door Sills**. Flashing for direct fix claddings to collect and drain water that may penetrate through the window or door unit. Size to extend from the inner most point of the aluminium frame out over the external face of the cladding.

- 2.17 SUPPORT ANGLE  
A Standard aluminium support angle for use below the sill pan for deeper claddings to transfer the weight of the window back to the building framing. Size to suit cladding thickness.

### Components for installation - cavity systems

- 2.18 STANDARD CAVITY CLOSER  
A device constructed from either aluminium or PVC to close the cavity above the window or door unit, between the cladding and head flashing, to provide ventilation in accordance with [NZBC E2/AS1](#) to the spaces above the window or door.

- 2.19 SILL SUPPORT BAR  
Extruded aluminium support bar with built in drainage and ventilation to [NZBC E2/VM1](#), [NZBC B2/AS1](#) and BRANZ Evaluation Method EM6, to provide continuous support to the window unit. Size to suit cladding type.

### Components

- 2.20 GLAZING GASKETS  
Thermoplastic rubber or PVC. Do not stretch glazing gaskets during installation. Measure and cut gaskets 5-10% over length before installation.
- 2.21 HARDWARE AND FURNITURE  
Hinges, stays, catches, fasteners, latches, locks and furniture as offered by the window and door manufacturer. Refer to SELECTIONS for type and finish. Key alike all lockable window hardware able to be keyed alike.
- 2.22 SAFETY STAYS  
Stainless steel non releasable restrictors to limit window opening to [NZBC F4/AS1](#), Table 2, Acceptable opening sizes for barriers.
- 2.23 FIXING BRACKETS  
Designed by manufacturer to specific design.

- 2.24 WEATHERING/INSTALLATION SEALANT  
Building sealant used in accordance with manufacturer's instructions for weather sealing aluminium frames to the cladding, complying with US Federal Specification TT S 0011534A, or a one-part polyurethane moisture curing, elastic joint sealant of medium modulus ( $\pm 25\%$  movement) to US Federal Specification TT S 00230C.

### Finishes

- 2.25 INTERPON D1000 POWDER COATING  
Single coat polyester based powder coating to AS 3715, AIMF Qualicoat Class 1.5, AAMA 2603 and WANZ Specification for powder coatings on architectural aluminium products. Refer to SELECTIONS for finish and colour.
- 2.26 INTERPON D1010 PREMIUM POWDER COATING  
High durability polyester powder coatings for architectural aluminium extrusions, components and products to exceed AS3715, AAMA 2603 and WANZ on architectural aluminium products. Refer to SELECTIONS for finish and colour.
- 2.27 INTERPON D2015 ULTRIVA™ POWDER COATING  
Advanced durability polyester powder coatings for architectural aluminium providing levels of weathering resistance exceeding AAMA 2604 for powder coatings on architectural aluminium extrusions, components and products. Refer to SELECTIONS for finish and colour.
- 2.28 INTERPON D3000 FLUOROMAX® POWDER COATING  
Fluorocarbon polymer hyper durable powder coating with chemical resistance, anti-corrosion and mechanical properties to AAMA 2605. Refer to SELECTIONS for finish and colour.
- 2.29 ACID ETCH (AE) ANODISED ALUMINIUM  
To [WANZ SFA 3503-03](#). Refer to SELECTIONS for thickness and colour.
- 2.30 TRADITIONAL ANODISED ALUMINIUM  
To [WANZ SFA 3503-03](#). Refer to SELECTIONS for thickness and colour.

## 3. EXECUTION

### Conditions - generally

- 3.1 DO NOT DELIVER  
Do not deliver to site any elements which cannot be unloaded immediately into suitable conditions of storage.
- 3.2 UNLOAD WINDOW JOINERY  
Unload, handle and store elements in accordance with the window manufacturer's requirements.
- 3.3 AVOID DISTORTION  
Avoid distortion of elements during transit, storage and handling.
- 3.4 PREVENT DAMAGE  
Store windows and doors on site in a clean and dry environment in such a manner as to prevent damage to prefinished surfaces. Stack the units in a vertical position resting on their sills, with layers interleaved between to prevent rubbing. Keep paper and cardboard wrappings dry.
- 3.5 PROPRIETARY ELEMENTS  
Fix in accordance with the window manufacturer's requirements.

3.6 PROTECTIVE COVERINGS  
Retain protective coverings and coatings to BRANZ BU 337 and keep in place during the fixing process. Provide protective coverings and coatings where required to prevent marking of surfaces visible in the completed work and to protect aluminium joinery from following trades. Remove protection on completion.

3.7 ADDITIONAL PROTECTION  
Supply and fix additional protection as necessary to prevent marking of surfaces which will be visible on completed work.

#### **Conditions - fixings and fastenings**

3.8 SUPPLY OF FIXINGS  
Use only fixings and fastenings recommended by the manufacturer of the component being fixed and to comply with the ULS wind pressure stated in SELECTIONS. Ensure fixings and fastenings exposed to the weather are of aluminium, or Type 316 stainless steel or if not exposed to the weather may they be hot-dip galvanized steel with a coating weight of 610 g/m<sup>2</sup> complying with [AS/NZS 4680](#).

3.9 INSTALLATION FIXING  
To [NZBC E2/AS1](#), 9.1.10.8, **Attachments for windows and doors**. Fix windows/doors through reveal to frame with a pair of 75 x 3.15mm minimum galvanised jolt head nails or a pair of 8 gauge x 65mm minimum stainless steel screws. Fix at a maximum of 450 centres along all reveals and a maximum of 150mm from reveal ends. Ensure fixings do not penetrate metal flashings.  
Install packers between reveals and framing at fixing points. Temporary packers fitted to head but removed after fixing reveal.

#### **Assembly**

3.10 FABRICATION  
Fabricate frames as detailed on shop drawings. Install glazing, hinges, stays and running gear as scheduled. Provide temporary bracing and protection. Temporarily secure all opening elements for transportation.

3.11 TIMBER REVEALS  
Before fixing to aluminium frames, ensure that timber reveals which are being painted have been primed on all surfaces. Securely fix reveals through aluminium fin.

3.12 HARDWARE GENERALLY  
Factory fit all required and scheduled hardware. Account for all keys and deliver separately to the site manager.

3.13 SAFETY STAYS  
Factory fit safety stays to all windows scheduled for safety stays and to all windows where safety stays are required to comply with [NZBC F4/AS1](#) 4.0, Opening windows.

#### **Installation - windows and doors**

3.14 SUPPLY OF FIXINGS  
Use only fixings and fastenings recommended by the manufacturer of the component being fixed and to comply with the ULS wind pressure stated in SELECTIONS.

3.15 EXPOSED FIXINGS AND FASTENINGS  
Ensure fixings and fastenings exposed to the weather are of aluminium, or Type 304 stainless steel.

3.16 PROTECTED FIXINGS AND FASTENINGS  
Fixings and fastenings not exposed to the weather may be hot-dip galvanized steel with a coating weight of 610 g/m<sup>2</sup> complying with [AS/NZS 4680](#).

### 3.17 CORROSION PROTECTION

Before fixing, apply suitable barriers of **bituminous coatings**, stops or underlay between dissimilar metals in contact, or between aluminium in contact with concrete.

### 3.18 CONFIRM PREPARATION OF EXTERIOR WALL OPENINGS

Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames. Do not proceed with the window and door installation until required preparatory work has been completed.

Required preparatory work includes the following:

- wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames to **NZBC E2/AS1:9.1.5 Wall underlay to wall openings**.
- Full height 20mm jamb battens to **NZBC E2/AS1** figure 72A (direct fix only)
- claddings neatly finished off to all sides of openings
- cladding may be installed after window installation
- installation of flashings (those which are required to be installed prior to frames).
- application of waterproof sealer to all building door and window sills in concrete floor or concrete sill situations. To building door sills only, apply a suitable membrane over the sealer
- all in accordance with the shop drawings, where applicable.

### 3.19 INSTALLATION

Fix to comply with the reviewed shop drawings and installation details including flashings and bedding compounds, pointing sealants and weathering sealants.

### 3.20 INSTALLATION DIRECT FIX

Install to E2/AS1, window manufacturers details and drawings including sill pans and support angles if required to window and door units.

### 3.21 INSTALLATION CAVITY CONSTRUCTION

Install to **NZBC E2/AS1** and window manufacturers details and drawings including cavity closers, sill support bars and support angles.

### 3.22 INSTALL FLASHINGS

Install flashings to heads, jambs and sills of frames and required by the window manufacturer and as detailed on the drawings. Finish head flashings to match window finish.

Place all flashings so that the head flashing weathers the jamb flashings, which in turn weathers over the up stand of the sill flashing. Ensure that sill flashings drain to the outside air.

Except where window/door frames are recessed, ensure that head flashings over-sail unit by 20mm minimum plus any jamb scribe width at each end, as per E2/AS1.

### 3.23 COMPLETE AIR SEAL

To **NZBC E2/AS1:9.1.6 Air seals**. Form an air-tight seal by means of proprietary expanding foam or sealants used with polyethylene foam (PEF) backing rods, applied between the window / door reveal and structural framing to a depth of 10 - 20mm, to provide a continuous air tight seal to the perimeter of the window or door.

### 3.24 FIX HARDWARE

Fix all sash and door hardware and furniture as scheduled.

## Installation - roof windows



- 3.25 **INSTALL ROOF WINDOWS**  
Check that the trimmed openings are formed and constructed to suit the required units. Do not proceed until roof and structural openings are properly formed. Install flashings and over flashings as detailed and required to make installation completely weatherproof. Install and fix the roof window units strictly in accordance with the roof window manufacturer's requirements and installation instructions. Ensure roof windows, pitch is on accordance with manufacturers minimum requirements.

- 3.26 **ROOF WINDOW ACCESSORIES AND OPERATING SYSTEMS**  
Install selected accessories and hardware. Install and complete all operating systems.

#### **Application - jointing and sealing**

- 3.27 **SEAL FRAMES ON SITE**  
Seal frames to each other and to adjoining structure and finishes, all as required by the window and sealant manufacturer and to make the installation weather tight.

In Very High and Extra High wind zones, seal between underside of head flashing and top edge of window head flange in accordance with [NZBC E2/AS1 9.1.10.4 Head flashings](#) Fig 71 (c). Do not seal the junction between the sill member and the cladding or sill flashing which must remain open.

- 3.28 **PREPARE JOINTS**  
Ensure joints are dry. Remove loose material, dust and grease. Prepare joints in accordance with the sealant manufacturer's requirements, using required solvents and primers where necessary. Mask adjoining surfaces which would be difficult to clean if smeared with sealant.

- 3.29 **BACK UP**  
When using back-up materials do not reduce depth of joint for sealant to less than the minimum required by the manufacturer of the sealant. Insert polyethylene foam (PEF) rod or tape back-up behind joints being pointed with sealant.

- 3.30 **SEALANT FINISH**  
Tool sealant to form a smooth fillet with a profile and dimensions required by the sealant manufacturer. Remove excess sealant from adjoining surfaces, using the cleaning materials nominated by the sealant manufacturer and leave clean.

#### **Cleaning**

- 3.31 **REMOVE TRADE DEBRIS**  
Remove trade debris by appropriate means on a floor by floor basis as each floor is completed and again before any work is covered up by others. Arrange for general removal.

- 3.32 **TRADE CLEAN**  
Trade clean window frames, operable windows and doors, glass and other related surfaces inside and out at the time of installation to remove marks, dust and dirt, to enable a visual inspection of all surfaces.

#### **Completion**

- 3.33 **PROTECTIVE COVERINGS**  
Retain protective coverings and coatings and keep in place during the fixing process. Provide protective coverings and coatings where required to prevent marking of surfaces visible in the completed work and to protect aluminium joinery from following trades. Remove protection on completion.

- 3.34 **REPLACE**  
Replace damaged, cracked or marked elements.

- 3.35 PROTECTION  
Protect finishes against damage from adjacent and following work.
- 3.36 IN-SITU TOUCH-UP TO POWDER COATED ALUMINIUM  
In situ touch-up of polyester or fluoropolymer coated aluminium is only permitted to minor surface scratching. Otherwise replace all damaged material.
- 3.37 SAFETY  
Indicate the presence of transparent glasses for the remainder of the contract period, with whiting, tape or signs compatible with the glass type. Indicators other than whiting must not be applied to the glass surface. Masking tape must not be used for this purpose.
- 3.38 MANIFESTATIONS  
Apply manifestations to comply with [NZS 4223.3](#), 303.1 Manifestations.

#### 4. SELECTIONS

For further details on selections go to [www.altus.co.nz](http://www.altus.co.nz)  
Substitutions are not permitted to the following, unless stated otherwise.

- 4.1 NOMINATED FABRICATOR  
The nominated fabricators for this section of work are;  
Brand: ~  
Branch: ~ Nulook Windows and Doors  
Contact: ~  
Email: ~  
Telephone: ~
- 4.2 SUPPLY AND INSTALLATION  
Supply and installation of the specified **Altus NZ Ltd** aluminium joinery system by one of the following options.  
Supply only: By fabricator  
Supply and installation: By fabricator  
Installation only: By main contractor

#### Performance

- 4.3 THERMAL PERFORMANCE  
R-value: ~ (as determined from [NZBC H1/VM1](#) or [H1/AS1](#))
- 4.4 AIR INFILTRATION  
For [NZS 4211](#), table 3 **Air infiltrations**.  
Non-air conditioned zones: ~  
Air conditioned zones: ~

#### Performance - Wind (design by contractor)

- 4.5 DESIGN PARAMETERS – NON SPECIFIC DESIGN  
Building wind zone ~ (refer to [NZS 3604](#), table 5.4)
- 4.6 DESIGN PARAMETERS - SPECIFIC DESIGN  
The factored design wind pressures are to [AS/NZS 1170.2](#).  
SLS ~ Pa  
ULS ~ Pa

#### Finishes

- 4.7 POWDER COAT FINISH  
Manufacturer: Interpon Powder Coatings

Brand/type: ~  
 Thickness: ~  
 Finish: ~  
 Colour: ~

- 4.8 ANODISED FINISH  
 Finish: ~  
 Thickness grade: ~  
 Colour: ~

### Glazing

- 4.9 GLASS  
 Type/thickness: Refer to glazing section/s for type and thickness.

### Hardware

- 4.10 WINDOW HARDWARE  
 Window fastener: ~

Location	Item
~	Safety stays - non releasable
~	Safety stays - disconnectable
~	Sash locks
~	Louvres
~	Multi-point Locking

- 4.11 DOOR HARDWARE  
 Locks & handles: ~

Location	Item
~	Parliament hinges
~	Hold back devices
~	Patio bolts
~	Door restrictors
~	Twin bolt bifold lock
~	Multi-point Lock
~	Single-point Lock

- 4.12 HARDWARE FINISH  
 Finish: Powder coat  
 Colour: ~

- 4.13 MANIFESTATIONS  
 Location: ~  
 Type/details: ~

### Flashings and Sealant

- 4.14 FLASHINGS  
 Material/type: ~  
 Pattern: Formed to suit details provided

- 4.15 WEATHERING SEALANT  
 Type: 1-part polyurethane moisture curing, elastic joint sealant  
 Colour: ~

### Reveals

- 4.16 WINDOW AND DOOR REVEALS - TIMBER  
 Timber species: ~  
 Grade/treatment: ~

Thickness: ~mm  
 Reveals: ~  
 Finish: ~

4.17 ALUMINIUM REVEALS - ADAPTOR/INFILLS  
 Type: ~  
 Finish: ~

4.18 WINDOW AND DOOR REVEALS - PVC  
 Brand/type: ~  
 Thickness: 19mm  
 Reveals: Grooved for wall linings

**Window and door system - WeatherTight™**

4.19 AWNING AND/OR CASEMENT WINDOWS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.20 SLIDING WINDOWS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.21 LIGHTWEIGHT SLIDING WINDOWS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.22 STD & INLINE BIFOLD WINDOWS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.23 INSERT WINDOWS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.24 STD & INLINE BIFOLD DOORS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

4.25 HINGED & FRENCH DOORS  
 Suite: **WeatherTight™**  
 Door No.: ~  
 Glazing system: ~

4.26 SLIDING & STACKER DOORS  
 Suite: **WeatherTight™**  
 Door No.: ~  
 Glazing system: ~

4.27 FLUSHLINE SLIDER AND STACKER  
 Suite: **WeatherTight™**  
 Door No.: ~  
 Glazing system: ~

- 4.28 URBANSLIDER / STACKER  
 Suite: **WeatherTight™**  
 Door No.: ~  
 Glazing system: ~
- Window and door system - SovereignSeries™**
- 4.29 AWNING AND/OR CASEMENT WINDOWS  
 Suite: **SovereignSeries™**  
 Window No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.30 INLINE BI-FOLD DOOR / WINDOWS  
 Suite: **SovereignSeries™**  
 Window No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.31 HINGED & FRENCH DOORS  
 Suite: **SovereignSeries™**  
 Window No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.32 SLIDING & STACKER DOOR / WINDOWS  
 Suite: **SovereignSeries™**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- Window and door system - AllSeasons™**
- 4.33 AWNING & CASEMENT WINDOWS  
 Suite: **AllSeasons™**  
 Window No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.34 STACKER & SLIDING DOORS  
 Suite: **AllSeasons™**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.35 HINGED DOOR  
 Suite: **AllSeasons™**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.36 BI-FOLD DOOR / WINDOW  
 Suite: **AllSeasons™**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~

### Roof windows

- 4.37 GLAZED ROOF WINDOWS  
 Suite: **Millennium™Roof Windows**  
 Type: ~  
 Roof window No.: ~  
 Hardware: ~

### Conservatories

- 4.38 CONSERVATORIES  
 Suite: **WeatherTight™ or SovereignSeries™**  
 Design: Custom made, refer to drawings  
 Glazing system: ~  
 Finish: ~

### Replacement Windows & Doors - WeatherTight™

- 4.39 REPLACEMENT WINDOWS & DOORS  
 Suite: **WeatherTight™**  
 Window No.: ~  
 Glazing system: ~

### Window and door system – 41Architectural

- 4.40 AWNING & CASEMENT WINDOWS  
 Suite: **41Architectural**  
 Window No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.41 STACKER & SLIDING DOORS  
 Suite: **41Architectural**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.42 HINGED DOOR  
 Suite: **41Architectural**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~
- 4.43 BI-FOLD DOOR / WINDOW  
 Suite: **41Architectural**  
 Door No.: ~  
 Reveal/plasterboard adaptor: ~  
 Glazing system: ~

## Louvres

- 4.44 LOUVRES  
Brand: **Breezway Altair™**  
Louvre No: ~  
Blade material: ~  
Blade type: ~  
Blade depth: ~  
Operation: ~  
Frame Finish: ~  
Blade Finish: ~  
Features: ~
- 4.45 LOUVRES  
Brand: **Highbrook Louvre**  
Louvre No: ~  
Blade material: ~  
Blade type: ~  
Blade depth: ~  
Operation: ~  
Frame Finish: ~  
Blade Finish: ~  
Features: ~