

4520FS FLETCHER ALUMINIUM WINDOWS & DOORS - SCHOOLS

Masterspec sections must be customised to suit the project being specified, by removing irrelevant information and adding project-specific information and selections.

1. GENERAL

This section relates to the manufacture, supply, and installation of FLETCHER ALUMINIUM, Oakley[®] Fisher[®], Nebulite[®], Rylock[®], Vistalite[®] for use in schools:

- aluminium windows
- aluminium doors and frames
- hardware and furniture

Modify or extend the above description to suit the project being specified.

The Oakley[®] system is recommended where the environment has a high to very high wind rating or a more robust window and door system is required under specific design.

The Fisher[®], Nebulite[®], Rylock[®] and Vistalite[®] systems may be used without additional structural support in any area that does not require specific design.

1.1 RELATED WORK

Refer to GLAZING for glazing.

Include cross references to other sections where these contain related work.

Generally glass is supplied and installed as part of the aluminium windows and doors package.

The glazing work section will always need to accompany this work section.

Generally, hardware is supplied and installed as part of the aluminium windows and doors package. However, it will be necessary to confirm preferred selections from the range of standard hardware and furniture offered by the window manufacturer. On major projects hardware may be supplied by a specialist hardware supplier for the window manufacturer to fix. Note also special installations such as electronic locks and hydraulic window opening gear.

1.2 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

SLS	Serviceability limit state
ULS	Ultimate limit state
WANZ	Windows Association of New Zealand

Refer general section INTERPRETATION & DEFINITIONS for abbreviations used throughout the specification.

Documents

1.3 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E2/AS1	External moisture
NZBC F4/AS1	Safety from falling
NZS 3604	Timber Framed Buildings
AS 3715	Metal finishing - Thermoset powder coatings for architectural applications
NZS 4211:1985	Performance of windows
NZS 4223.3	Glazing in buildings - Human impact safety requirements
WANZ	Powder Coating Quality Assurance System

This section uses NZS 4211:1985 as it is referenced in NZBC E2, and NZS 4211:2008 is not used as it is not referenced at time of writing.

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.

RELATED DOCUMENTS

Refer to the following related documents when preparing this section:

AS/NZS 1170	Structural design actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
NZS 3602	Specifying timber and wood-based products for use in building
NZS 3504	Aluminium windows
NZS 4211	Performance of windows
AS/NZS 4284	Testing of building facades

BRANZ BU 349	Finishes for aluminium
BRANZ BU 362	Finishes on architectural hardware
BRANZ BU 369	Fitting tolerances
BRANZ BU 422	Maintenance of aluminium joinery
BRANZ BU 450	Solar-control glass design and installation
BRANZ BU 452	Weatherproofing aluminium doors and windows
BRANZ BU 453	Fasteners selection
BRANZ BU 463	Aluminium windows and E2/AS1
BRANZ BU 465	Domestic flashing installation
BRANZ BU 466	Timber-frame parapets, balustrades and columns
BRANZ BU 467	Principles of flashing design
BRANZ BU 471	Insulating glass units
WANZ	Aluminium Window Handbook
WANZ	Installation code for aluminium joinery products

1.4 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:

Fletcher Aluminium High Performance Architectural Solutions for Windows and Doors
 WANZ Window installation system:
 An Alternative Solution for the installation of Windows and doors
 Part 2: Fletcher Aluminium branded details

If design scope falls outside WANZ or NZBC E2 then specific design is required.

Copies of the above literature are available at

Web: www.oakley.co.nz
 Telephone: 0800 Oakley
 Web: www.fisherwindows.co.nz
 Telephone: 0800 Fisher
 Web: www.nebulite.co.nz
 Telephone: 0800 Nebulite
 Web: www.rylock.co.nz
 Telephone: 0800 4 Rylock
 Web: www.vistalite.co.nz
 Telephone: 0800 Vistalite
 Web: www.designresource.co.nz

It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

Warranties

1.5 WARRANTY

Warrant this work under normal environmental and use conditions against failure of materials and execution

Warranty period: 2 years

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

Check general section WARRANTIES for the date of commencement of warranties; which is normally practical completion of the contract. Refer to the chosen conditions of contract as it may also contain information on warranties/guarantees.

NZS 3504 requires that manufacturers of windows marked to claim compliance with NZS 4211 must warrant their windows will comply for a period of at least two years. However larger contracts may justify a longer term, but any increase in time will have cost implications.

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified Fletcher Aluminium system, or associated components and products.

- 1.7 **QUALIFICATIONS**
Where supply and installation is required by the manufacturer, carry out fixing by the manufacturer or by a firm nominated and approved by the window manufacturer.
Where installation is required by the manufacturer, the manufacturer may wish to have the installation carried out by a specialist installer.
- 1.8 **HARDWARE SAMPLES**
Submit for assessment catalogue cuts and data sheets of all hardware, operating systems and security mechanisms before assembly commences.
- 1.9 **FINISH SAMPLES**
Submit for assessment before fabrication a sample of the specified finish to all exposed window and door sections in the selected colour.
- 1.10 **SHOP DRAWINGS AND INSTALLATION DETAILS**
Provide drawn profiles and preliminary installation details for review.

Shop drawings to show, but not be limited to:

- Construction details (minimum scale 1:10) showing the interface between joinery elements and the building structure.
- Dimensions of all typical elements and of any special sizes and shapes.
- Glazing specification and details.

Refer to the general section SHOP DRAWINGS for the requirements for submission and review and the provision of final shop drawings.

Add further detail on the precise form and extent of shop drawings where appropriate.

Modify this clause to conform with the appropriate timing for the project. In some cases, preliminary details may need to be supplied at the pricing stage, with final shop drawings by the successful supplier/fabricator only.

Performance

- 1.11 **PERFORMANCE - WIND**
Construct windows, exterior doors and frames to withstand design wind pressures to NZS 3604.
Delete next clause if using the above.
- 1.12 **SPECIFIC DESIGN**
The windows, doors, their installation and all fixings to comply with NZS 4211:1985.
Refer to SELECTIONS for ULS and SLS
Refer to SELECTIONS for Air leakage level.
Where new or unusual window designs are involved consider adding testing requirements to AS/NZS 4284.
State design wind pressures by using floor levels, typical face and corner design wind pressures if available. Specifying in this way will remove the need to be specific about a whole range of items. NZS 4211:2008 section 8 uses the term Air Infiltration and has a different method of calculation. NZS 4211:2008 section 9 also has requirements for Water Penetration.
Delete this clause if complying with WIND PERFORMANCE clause.
- 1.13 **PERFORMANCE - STRUCTURAL/WEATHER-TIGHTNESS**
The structural and weather-tight performance of the completed joinery, the glazing and infill panels is the responsibility of the window manufacturer.
It is common for the window supply company to be made responsible for the complete window installation, including the structural and weathertight performance of the glass and glazing system. NZS 4211 is very precise about design wind pressure. See table 15. Glass type would be specified elsewhere (e.g. on drawn schedules) and listed here.
If this clause is not used and the glazing is the responsibility of another trade, then GLAZING will need to be specific about responsibility and guarantees.
Where appropriate consider requiring a maintenance programme in written and graphic form upon completion of the aluminium window and door installation.

2. PRODUCTS

2.1 WINDOWS

Refer to SELECTIONS for type and finish.

2.2 DOORS

Refer to SELECTIONS for type and finish.

2.3 FLASHINGS GENERALLY

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.

It is now WANZ policy that their members include flashings with every window quote, whether specified or not.

2.4 GLASS

Refer to GLAZING for type and thickness.

2.5 REVEALS - TIMBER PAINTED

Timber reveals for paint finish with all sides primed grooved for wall linings or flush finished for architraves.

2.6 REVEALS - ALUMINIUM

Aluminium reveals fitted to frame via thermal break.

Components - for direct fix systems

2.7 SILL PAN FLASHING

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.

2.8 WANZ SUPPORT ANGLE

Support angle for use with the sill pan for deeper claddings to transfer the weight of the window back to the frame.

If design scope falls outside WANZ or NZBC E2 then specific design is required.

Components - for cavity systems

2.9 WANZ CAVITY CLOSER

Flashing device to close the cavity above the window or door unit to direct water that occasionally penetrates the wall cladding into the cavity spaces adjacent to the window.

2.10 WANZ SUPPORT BAR

Extruded aluminium support bar with built in drainage and ventilation to NZBC E2, to provide continuous support to the window unit.

Components

2.11 HARDWARE AND FURNITURE

Hinges, stays, catches, fasteners, latches, locks and furniture as offered by FLETCHER ALUMINIUM. Refer to SELECTIONS for type and finish. Key alike all lockable hardware able to be keyed alike.

Modify or omit this clause when some or all hardware is provided for elsewhere, in this or other sections.

2.12 SAFETY STAYS

Stainless steel non releasable restrictors to limit window opening to NZBC F4/AS1, Table 2, Acceptable opening sizes for barriers.

2.13 WEATHERING SEALANT

Building sealant used in accordance with manufacturer's instructions for weather sealing glass to glass joints.

It is not advisable to mix sealants in the one installation. For example polyurethane and silicone are incompatible, preventing cure.

Use polyurethane sealant next to thin dimension stone panels supported on curtain walling. Silicone sealants can bleed into natural stonework causing coloured stains, Water run-off from silicone sealant can also cause streaking on glass which is difficult if not impossible to clean off.

Finishes

- 2.14 ANODISED ALUMINIUM
Refer to SELECTIONS for type.
- 2.15 EXTERNAL COATED ALUMINIUM
Polyester Duralloy powder coating in accordance with WANZ Powder Coating Quality Assurance System for architectural aluminium products and AS 3715.

3. EXECUTION

Conditions - generally

- 3.1 DELIVERY
Do not deliver to site any elements which cannot be unloaded immediately into suitable conditions of storage.
- 3.2 UNLOADING
Unload, handle and store elements in accordance with FLETCHER ALUMINIUM requirements.
- 3.3 AVOID DISTORTION
Avoid distortion of elements during transit, storage and handling.
- 3.4 PREVENT DAMAGE
Prevent prefinished surfaces rubbing together, and contact with mud, plaster and cement. Keep paper and cardboard wrappings dry.

Assembly

- 3.5 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.
- 3.6 HARDWARE GENERALLY
Factory fit all required and scheduled hardware. Account for all keys and deliver separately to the site manager.
- 3.7 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.
- 3.8 TIMBER REVEALS
Before fixing to aluminium frames, ensure that timber reveals which are being painted have been primed on all surfaces.
Use only when necessary. See NZS 3504, clause 5.2.

Conditions - fixings and fastenings

- 3.9 SUPPLY OF FIXINGS
Use only fixings and fastenings recommended by the manufacturer of the component being fixed and to comply with the design wind pressure stated in the STANDARD OF PERFORMANCE clause.

- 3.10 EXPOSED FIXINGS AND FASTENINGS
Ensure fixings and fastenings exposed to the weather are of aluminium, or Type 316 stainless steel.

Installation

- 3.11 CORROSION PROTECTION
Before fixing, apply suitable barriers of bituminous coatings, stops or underlays between dissimilar metals in contact, or between aluminium in contact with concrete.

- 3.12 CONFIRM PREPARATION OF WALL OPENINGS
Confirm that 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 Building wrap to wall openings.

- claddings neatly finished off to all sides of openings

- installation of flashings (those which are required to be installed prior to frames).

Refer to the Windows Association of New Zealand website (www.wanz.org.nz) for information on the WANZ WIS Window Installation System. This covers the WANZ recommendations on the preparation of window/door openings, minimum clearances between rough openings and the window/door frame, dressing of the wall wrap into the prepared opening, application of flexible flashing tape to the sill and top corners of the opening, installation of window/door frames and flashings, sealing of the window/door frame into the opening to create a pressure equalisation cavity, installation of flashings and the maintenance of appropriate clearances between the frame and the surrounding construction.

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

Fix frames rigidly in place without distortion, to the FLETCHER ALUMINIUM'S and WANZ Aluminium window handbook requirements, plumb, true to line and face, weathertight and with all openings operating freely.

- 3.14 INSTALLATION DIRECT FIX
Install to WANZ Installation System and Fletcher Aluminium branded details and drawings including sill pans to window and door units.

- 3.15 INSTALLATION CAVITY CONSTRUCTION
Install to WANZ Installation System and Fletcher Aluminium branded details and drawings including WANZ cavity closers, support bars and support angles.

- 3.16 DRAINAGE
Provide anti-condensation channels to window sills. Sills to sashes and fixed lights to incorporate positive drainage to the exterior.

- 3.17 INSTALL FLASHINGS
Liaise with and agree flashing detail requirements with the cladding manufacturer/installer. Install flashings to heads, jambs and sills of frames as supplied and required by the cladding 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 upstand 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 the unit by 30mm minimum at each end.

A 30mm over-sail is recommended by WANZ, this may vary depending on cladding and jamb details, refer to NZBC E2/AS1 for options and modify this clause.

Head, jamb and sill flashings are always advisable to ensure weathertightness; and must be used in high and very high wind zones where face sealed claddings are used and where there is insufficient physical protection provided in the form of roof overhangs or canopies.

Ensure that flashings are fully detailed, preferably as 3-dimensional diagrams, to ensure that they are fabricated and installed in a manner that will avoid the ingress of moisture.

3.18 COMPLETE AIR SEAL

To NZBC E2/AS1:9.1.6 Air seals. Form an air-tight seal by means of a proprietary expanding foam or sealants used with 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.

Formation of an air seal around all penetrations in the building envelope will greatly reduce the likelihood of water ingress occurring; especially when employed in combination with well designed joinery frames and appropriately detailed and installed flashings. Refer to the Guidance Note above under CONFIRM PREPARATION OF WALL OPENINGS regarding the WANZ WIS.

Completion

3.19 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.

Always use this clause. It describes the basic cleaning operation carried out at the time of installation. The expectation is that at that time the installer will leave the site. Note that subsequent damage is a difficult issue on all contracts.

3.20 PROTECTIVE COVERINGS

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.

Modify this clause to suit project requirements. Protective coverings and coatings are not usually supplied automatically. Additional protective coverings are required to protect from following work such as plastering and painting.

3.21 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.

Modify this clause to suit. Whiting is used to protect internal finishes exposed to the sun. Along with glazing signs and tape, it also acts as a safety device by clearly indicating during the balance of the construction phase that glass has been installed.

This clause does not refer to the NZS 4223 requirement for "manifestations" required for post-construction building use where a glass door or panel could be mistaken for an unimpeded path of travel.

3.22 MANIFESTATIONS

To NZS 4223.3, 303.1: Manifestation (making glass visible).

Modify this clause to describe project requirements for safety or appearance.

Note that both NZS 4223.3 and NZBC F2 clause F2.3.2 set minimum standards for delineating glass "capable of being mistaken for an unimpeded path of travel." While this issue is best resolved in the basic design of the installation, in some cases applied signs, decals, sandblasting or attached rails are necessary. Consider and specify accordingly.

Completion

3.23 REMOVE

Remove safety indicators and protective coverings, and wipe down all joinery thoroughly to leave it perfectly clean. Remove debris, unused materials and elements from the site.

3.24 CONFIRM

Confirm the proper operation of hardware and operating systems on completion of the installation and again at completion of the contract works.

4. SELECTIONS

Substitutions are not permitted to the following, unless stated otherwise.

SELECTIONS is for providing details of the actual selections to be included in the contract works including model numbers, colours and other information necessary to ensure that the correct materials are supplied and installed

Performance

4.1 WIND ZONE - DESIGN TO NZS 3604

Building wind zone: ~ (as determined from table 5.1 of NZS 3604)

The supply of this information is very important for the design of the window frame, window/door members and the proper selection of glass. It must be provided in all instances. Building wind zones include:

- L (Low wind speed of 32 m/s)	0.65 kPa ULS (Ultimate limit state)
- M (Medium wind speed of 37 m/s)	0.85 kPa ULS
- H (High wind speed of 44 m/s)	1.20 kPa ULS
- VH (Very high wind speed of 50 m/s)	1.55 kPa ULS

Above 50 m/s specific design information must be provided.

4.2 SPECIFIC DESIGN TO NZS 1170.2

ULS: 1550 kPa

SLS: ~

Delete this SELECTION if using WIND ZONE-design to NZS 3604.

NZS 4211:2008 section 8 uses the term Air Infiltration and has a different method of calculation. NZS 4211:2008 section 9 also has requirements for Water Penetration.

4.3 STANDARD OF PERFORMANCE

Air leakage level: Level 2 (as determined by section 11 of NZS 4211:1985)

Information required where window manufacturer is designing windows

Level 8 is recommended for general use

Level 2 is recommended for air conditioned buildings and in other demanding situations

Level 17 is suitable only for undemanding situations

Note levels refer to maximum air leakage in litres/second.m²

NZS 4211:2008 section 8 uses the term Air Infiltration and has a different method of calculation.

NZS 4211:2008 section 9 also has requirements for Water Penetration.

4.4 SEISMIC SUB-FRAMES

The following units to have seismic sub-frames.

Windows No: Seismic movement to be provided for

~ ~mm

List window numbers. Obtain from the structural engineer the extent of seismic movement to be provided for and state this in mm.

Seismic frames should be used where required by engineer

FLETCHER ALUMINIUM commercial windows and doors for schools

This system is recommended where the environment has a very high wind rating or a more robust window and door system is required.

4.5 ACCEPTABLE SUPPLIERS

Fabrication and supply of **FLETCHER ALUMINIUM** windows and doors by one of the following.

Fabricator Contact details

~

Refer to Fletcher Aluminium website for fabricators listed in regions. www.fletcheraluminium.co.nz

4.6 ACCEPTABLE SUPPLIERS AND INSTALLERS

Fabrication, supply and installation of the specified **FLETCHER ALUMINIUM** windows and doors by one of the following.

Fabricator / installer Contact details

~

Refer to Fletcher Aluminium WEBSITE for fabricators listed in regions.
www.fletcheraluminium.co.nz.
Installation of joinery is on request to specific fabricators

4.7 UNIVERSAL WINDOW AND DOOR SYSTEM

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Glass: Refer to GLAZING for type and thickness
Seismic frame: Not required
Sill track infills: Not required
Sill trays: Not required
Finish option: Powder coat
Seismic frame - Specify if required
Sill track infills - Specify if required
Sill trays - Specify if required
Double glaze up to 25mm

4.8 UNIVERSAL HINGED DOORS

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm wide
Top rail: 100mm wide
Bottom rail: 100mm wide
Glazing Bead: ~
Glass: Refer to GLAZING for type and thickness
Stiles width options: None
Finish option: Powder coat
Top rail option: 63mm wide
Bottom rail option: 63mm wide
Glazing bead profile options: Sloping beads, Square beads
Flat bead only option for double glazed units. Glazing beads used on top & bottom rail only - stile is pocketed
Single glaze up to 10mm,
Double glaze up to 25mm

4.9 UNIVERSAL INSIDE SLIDING DOOR

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm
Top rail: 100mm
Bottom rail: 100mm
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
External sliders are free draining and therefore have a greater performance rating
Finish option: Powder coat
Stile option: None
Top rail option: None
Bottom rail option: None
Glazing bead profile options: Sloping beads, Square beads
Sashes available in this unit
Glazing beads used on top & bottom rail only, stile is pocketed
Flat bead only option for double glazed units
Single glaze up to 10mm
Double glaze up to 25mm

4.10 UNIVERSAL OUTSIDE SLIDING DOOR

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm
Top rail: 100mm
Bottom rail: 100mm
Glazing bead: ~

Glass: Refer to GLAZING for type and thickness
Finish option: Powder coat
Stile option: None
Top rail option: None
Bottom rail option: None
Glazing bead profile options: Sloping bead, Square bead
Glazing beads used on top & bottom rail only, stile is pocketed
Flat bead only option for double glazed units
Single glaze up to 10mm
Double glaze up to 25mm

4.11 UNIVERSAL OUTSIDE SLIDING STACKING DOOR

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm
Top rail: 100mm
Bottom rail: 100mm
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
Finish option: Powder coat
Stile option: None
Top rail option: None
Bottom rail option: None
Glazing bead profile options: Sloping bead, Square bead
Glazing beads used on top & bottom rail only, stile is pocketed
Flat bead only option for double glazed units
Single glaze up to 10mm
Double glaze up to 25mm

4.12 UNIVERSAL INSIDE SLIDING STACKING DOOR

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm
Top rail: 100mm
Bottom rail: 100mm
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
Finish option: Powder coat
Stile option: None
Top rail option: None
Bottom rail option: None
Glazing bead profile options: Sloping bead, Square bead
Glazing beads used on top & bottom rail only, stile is pocketed
Flat bead only option for double glazed units
Sashes available in this unit
Single glaze up to 10mm
Double glazed up to 25mm

4.13 UNIVERSAL DUO SLIDER

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Stiles: 63mm
Top rail: 100mm
Bottom rail: 100mm
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
Finish option: Powder coat
Stile option: None
Top rail option: None
Bottom rail option: None
Glazing bead profile options: Sloping bead, Square bead
Glazing beads used on top & bottom rail only, stile is pocketed
Flat bead only option for double glazed units

*Two panels only - both slide
Single glaze up to 10mm
Double glaze up to 25mm*

4.14 SENTRY SLIDING DOORS

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 55mm
Finish: Anodised
Stiles: 71mm
Top rail: 96mm
Bottom rail: 116mm
Opening direction: Out
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
*Finish option: Powder coat
Stile option: 96mm for double glazing
Top rail option: None
Bottom rail option: None
Opening direction option: In
Glazing bead profile options: Sloping bead, Square bead (no choice for double glazing)
Glazing beads used on top & bottom rail only, stile is pocketed
Single glaze up to 8mm
Double glaze up to 25mm*

4.15 SENTRY BI-FOLD DOORS

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 55mm
Finish: Anodised
Stiles: 71mm
Top rail: 96mm
Bottom rail: 116mm
Opening direction: Out
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
*Finish option: Powder coat
Stile option: 96mm for double glazing
Top rail option: None
Bottom rail option: None
Opening direction option: In
Glazing bead profile options: Sloping bead, Square bead (no choice for double glazing)
Glazing beads used on top & bottom rail only, stile is pocketed
Single glaze up to 8mm
Double glaze up to 25mm*

4.16 UNIVERSAL AWNING WINDOW - OPEN OUT SASH

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Mullions and transoms: ~
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness
*Finish option: Powder coat
Mullion & transom options: Standard, Finned, Heavy duty box
Glazing bead options: Sloping bead, Square bead
Flat bead only option for double glazed units. May be internally glazed for security or reglazing access
Single glaze up to 8mm
Double glaze up to 25mm*

4.17 UNIVERSAL AWNING WINDOW - OPEN IN SASH - (HOPPER)

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Mullions and transoms: ~
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness

Finish option: Powder coat
Mullion & transom options: Standard, Finned, Heavy duty box
Glazing bead options: Sloping bead, Square bead
Flat bead only option for double glazed units
May be internally glazed for security or reglazing access
Single glaze up to 8mm
Double glaze up to 25mm

4.18 UNIVERSAL CASEMENT WINDOW

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Opening direction: Out
Mullions and transoms: ~
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness

Finish option: Powder coat
Mullion & transom options: Standard, Finned, Heavy duty box
Glazing bead options: Sloping bead, Square bead
Flat bead only option for double glazed units. May be internally glazed for security or reglazing access
Single glaze up to 8mm
Double glaze up to 25mm

4.19 UNIVERSAL SLIDING WINDOW

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 39mm
Finish: Anodised
Glazing: Pocket glazed
Finish: ~
Glass: Refer to GLAZING for type and thickness

Finish option: Powder coat
Glazing options: None - flat bead only option for double glazed units
May be internally glazed for security or reglazing access
Panel options: Single slider, Duo sliding, Bi-parting
Single glaze up to 8mm
Double glaze up to 18mm

4.20 SENTRY BI-FOLD WINDOWS

Brand: Fletcher Aluminium **Oakley**[®]
Suite: 55mm
Finish: Anodised
Opening direction: Out
Stiles: 71mm
Top rail: 96mm
Bottom rail: 116mm
Glazing bead: ~
Glass: Refer to GLAZING for type and thickness

Finish option: Powder coat
Opening direction option: In
Stile option: 96mm for double glazing
Top rail option: None
Bottom rail option: None
Glazing bead options: Sloping bead, Square bead
Flat bead only option for double glazed units. This unit cannot be glazed internally
Single glaze up to 8mm
Double glaze up to 25mm

4.21 OAKLEY PIVOT WINDOW

Brand: Fletcher Aluminium **Oakley**[®]
Suite: Pivot window
Finish: Anodised
Frame: 52mm
Sash: Box
Glazing bead: ~

Finish option: Powder coat

Pivot lock included
Frame option: None
Sash option: None
Glazing bead options: Sloping bead, Square bead
Flat bead only option for double glazed units. May be internally glazed for security or reglazing access
Single glaze up to 8mm
Double glaze up to 25mm

FLETCHER ALUMINIUM Pacific residential windows and doors for schools

This system may be used if it meets design requirements and a residential system is considered acceptable. Fletcher Aluminium do recommend that Oakley commercial be used for schools.

Window and door system

4.22 AWNING WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: In frame passive ventilation system
Sash: Pocket glazed or beaded
Finish: Anodised
Glass: Refer to GLAZING for type and thickness
Frame option: Non-ventilating
Sash option: Beaded sash available for single & double glazed up to 25mm IGU
Finish option: Powder coated
Double glazing: Up to 25mm
Recommended max sash size 1500mm high x 800mm wide (depends on weight & wind load)

4.23 CASEMENT WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: In frame passive ventilation system
Sash: Pocket glazed/beaded
Finish: Anodised
Glass: Refer to GLAZING for type and thickness
Frame option: Non-ventilating
Sash option: Beaded
Finish option: Powder coat
Double glazing: Up to 25mm
Casement windows should have a ratio of 2 to 1 to ensure that they operate smoothly. e.g. 1200mm high x 600mm wide
Casements over 1500mm high should be made with a heavier section, this is for strength and allows for a central morticed lock (most people cannot reach top fasteners that are too high)
Special Feature - There is an adaptor available where mullionless casements are required, this adaptor will also take a centred mortice lock

4.24 STANDARD HORIZONTAL SLIDING WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: Flat face
Sash: Pocket glazed
Finish: Anodised
Lock: Truth cam lock
Glass: Refer to GLAZING for type and thickness
Frame option: None
Sash option: None
Finish option: Powder coated
Lock option: None, Truth lock can be powder coated in matching colours
Configuration - 2 x panel single slider, double slider (both slide, 3 x panel single slider, twin slider, 4 x panel bi-parting slider. Recommended max height 1200mm
Adaptor available to allow sliding window to be put in other window & door units

4.25 PREMIUM HORIZONTAL SLIDING WINDOW

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm premium window
Frame: Flat face

Sash: Beaded
Finish: Anodised
Lock: Truth cam lock
Glass: Refer to GLAZING for type and thickness
Sash option: None
Finish option: Powder coated
Lock option: None

Configuration - 2 x panel single slider, 3 x panel single slider with over light. Difference between this and standard horizontal slider is the heavier beaded frame

4.26 SASHLESS VERTICAL SLIDING WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Type: Aneeta™
Frame: ~
Lock: Integrated
Finish: Anodised
Glass: Refer to GLAZING for type and thickness
Frame: Any window or door frame
Lock option: None - lock is integrated- can be locked in closed and open position
Finish option: Powder coated

Ideal usage - because there is no protrusion this is a safe product for schools. Where ever there is a call for ventilation and unobstructed views are a consideration. To replace old sashes in existing frames. In door frames in rooms that have no windows to comply with ventilation regulations.

Windows facing small decks or where ever there is no room for a sash to protrude.

Configurations - 2, 3, and 4 panel (fixed and counterbalanced)

Double glazing - Up to 16mm (available in 2 panel only)

Maximum size - 4 metres high and 1.6 metres wide (depends on wind load & glass weight)

4.27 DOUBLE HUNG WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: Flat face
Sash: Pocket glazed/beaded
Lock: Truth Cam lock
Finish: Anodised
Glass: Refer GLAZING for type and thickness
Type option: Single sash
Frame option: None
Sash option: Beaded
Lock option: None
Finish option: Powder coated
Glazing: Can be double glazed

Special feature - Spring balance used instead of spiral balance.

Size will depend on weight and wind load. A ratio of 1.5 to 1 with a minimum of 1 to 1 is required to ensure the balances operate smoothly

4.28 FOLDBACK® BI-FOLDING WINDOWS

Brand: Fletcher Aluminium Pacific residential series
Platform: 40mm
Model: Fully framed
Rolling gear: Top hung
Sill type: Flush
Frame: Flat face
Panel: Pocket glazed/beaded
Finish: Anodised
Glass: Refer GLAZING for type and thickness
Model option: Outline version, head is exposed or can be integrated into soffit
Sill option: Standard
Frame option: None
Panel option: Beaded
Double gazing: Up to 25mm
Finish option: Powder coated

Special feature - Allows panels to fold back against outside cladding. Opens 180 degrees

Opening direction - Out only

Configurations- Up to 6 panels - 3 panels folding each way.

Panel sizes - Height 1.6 metres x width 800mm (depends on wind load)

- 4.29 STANDARD BI-FOLDING WINDOWS
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 40mm
 Rolling gear: Top hung
 Opening direction: Out
 Sill type: Flush
 Frame: Flat face
 Panel: Pocket glazed
 Finish: Anodised
 Glass: Refer GLAZING for type and thickness
Opening direction option: Open in
Sill option: Standard
Panel option: Beaded
Finish option: Powder coated
Glazing - Double glaze up to 25mm
Note - Opens 90 degrees
Configurations - Up to 6 panels
Panel Size - Height 1.6 metres x width 800mm (depends on wind load)
- 4.30 ROOF WINDOWS
 Brand: Fletcher Aluminium Pacific residential series
 Finish: Anodised
 Opening unit: Double glazed only
 Opener Brand: Interlock skylight operator
 Opener Type: Manual P4450 complete with operating pole
Type: Suitable for areas that need light and/or ventilation from above
Fixed unit option: Single & double glazed
Double glazing: Up to 25mm
Finish Option: Powder coated
Opener type option: Interlock electronic Sky-op (this is available with a rain detector if required)
Aesthetics - No aluminium framing visible from inside
- 4.31 SPECIAL WINDOWS
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 35mm
 Frame: In frame passive ventilation
 Sash: Pocket glazed
 Finish: Anodised
 Base: ~
 Glass: Refer GLAZING for type and thickness
Frame option: Standard
Sash option: Beaded
Finish option: Powder coated
Base options: Marine ply, H3 treated pine or other on request
Double glazing - Up to 25mm
Type - Box windows, Bay windows, Greenhouse windows. These windows are all custom-made to suit requirements. Sizes will depend on glass weights and wind loads
- 4.32 LOUVRE WINDOWS
 Brand: Altair™ by Breezway
 Type: Adjustable
 Blade type: Glass
 Blade depth: 152mm
 Operation: Manual
 Finish: Anodised
Blade type options: Cedar, Aluminium
Size option: 102mm
Operation options: Remote control manual, remote control electronic
Finish options: Powder coat colours with black clips and handles
Powder coat colours with colour matched clips and handles on request
Features - Standard left hand handle (as viewed from inside) can be specified as right hand
Remote control handle can be specified
100mm restricted opening can be specified where limited opening is required
Variable handle position where handles are difficult to reach in standard position

- 4.33 HINGED OUT DOORS - SINGLE AND FRENCH DOORS
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 40mm
 Frame: Flat face
 Sill: Flush
 Panel Sections: Wide pocket rails and stiles
 Finish: Anodised
 Glass: Refer GLAZING for type and thickness
Special feature: Flush sill clean uncluttered lines
Frame option: None
Sill option: Standard
Panel sections: Beaded rails and stile
Stiles option: Narrow stile
Finish option: Powder coated
Max panel height 2.5 metres, width 900mm, (depends on wind load). For door sizes outside these specs, refer to Fletcher Aluminium Oakley Commercial section.
- 4.34 HINGED IN DOORS - SINGLE AND FRENCH DOORS
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 40mm
 Frame: Flat face
 Sill: Standard
 Panel Sections: Wide pocket rails and stile
 Finish: Anodised
 Glass: Refer GLAZING for type and thickness
Frame option: None
Sill option: None
Panel Sections: Beaded rails and stile
Stiles option: Narrow stile
Finish option: Powder coated
Max panel height 2.5 metres, width 900mm, (depends on wind load). For door sizes outside these specs, refer to Fletcher Aluminium Oakley Commercial section
- 4.35 FOLDBACK® BI-FOLDING DOORS
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 40mm
 Special feature: Allows panels to fold back against outside cladding
 Model: Fully framed version (head is encased in aluminium pelmet)
 Rolling gear: Top hung
 Opening direction: Out only
 Sill Type: Flush
 Frame: Flat face
 Panels: Pocket glazed/beaded
 Finish: Anodised
 Glass: Refer GLAZING for type and thickness
Model option: Outline version, head is exposed or can be integrated into soffit
Opening direction option: None
Frame option: None
Panel option: Beaded
Finish: Powder coated
Configurations - Up to 6 panels - 3 panels folding each way. Height 2.4 metres, width 800mm (depends on wind load and glass weights)
Special feature - Allows panels to fold back against outside cladding - 180 degrees
Double glaze up to 25mm
- 4.36 STANDARD BI-FOLD DOOR
 Brand: Fletcher Aluminium Pacific residential series
 Platform: 40mm
 Rolling gear: Top hung
 Sill Type: Flush
 Frame: Flat face
 Panels: Pocket glazed/beaded
 Opening direction: Out
 Finish: Anodised
 Glass: Refer GLAZING for type and thickness

Opening direction option: Open in
Frame option: None
Panel Option: Beaded
Finish Option: Powder coated
Configurations - Up to 6 panels
Opens 90 degrees
Height 2.4 metres, width 800mm (depends on wind load and glass weights)
Double glaze up to 25mm

4.37 EUROSLIDER™ SLIDING DOOR

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Sill type: Flush
Frame: Flat face
Panels: Pocket glazed/beaded
Finish: Anodised
Glass: Refer GLAZING for type and thickness

Panel Option: Beaded
Finish Option: Powder coated

Height 2.4 metres, width 1.2 metres per panel. e.g. 2 panels = 2.4 metres, 3 panels = 3.6 metres, 4 panels = 4.8 metres. Sizes are dependant on wind loading and glass weights.

Double glaze up to 18mm

Refer to Fletcher Aluminium Oakley windows and doors for larger units.

Special feature - Flat surface sill eliminates build up of dirt and debris. Concealed top hung tracking systems makes it impossible to lift and slip off the door. Doors slide externally for greater weather tightness

4.38 EUROSTACKER™ SLIDING DOOR

Brand: Fletcher Aluminium Pacific residential system
Platform: 35mm
Sill type: Flush
Frame: Flat face
Panels: Pocket glazed/beaded
Finish: Anodised
Glass: Refer GLAZING for type and thickness

Panel Option: Beaded
Finish Option: Powder coated

Height 2.4 metres, width 1.2 metres per panel. Only 3 panels = 3.6 metres. Sizes are dependant on wind loading and glass weights.

Double glaze up to 18mm

Refer to Fletcher Aluminium Oakley windows and doors for larger units.

Special feature - Flat surface sill eliminates build up of dirt and debris. Concealed top hung tracking systems make it impossible to lift and slip off the door. Doors slide externally for greater weather tightness

4.39 SLIDING DOORS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: Flat face
Panels: Pocket glazed/beaded
Finish: Anodised
Glass: Refer GLAZING for type and thickness

Panels option: Beaded
Finish option: Powder coated

Height 2.4 metres width 1.2 metres per panel. (e.g. 2 panel 2.4 metres 3 panel 3.6 metres, 4 panel 4.8 metres). Sizes are dependent on wind loading and glass weights

Out side of the above spec please refer to Fletcher Aluminium Oakley Commercial section

Double glazed 18mm

4.40 SLIDING STACKER DOORS

Brand: Fletcher Aluminium Pacific residential series
Platform: 35mm
Frame: Rounded face
Panels: Pocket glazed/beaded
Finish: Anodised
Glass: Refer GLAZING for type and thickness

Panel option: Beaded
 Finish option: Powder coated
 Panel size spec - 2.4 metres high 1.2 metres wide, (e.g. 3 panel = 3.6 metres, up to 6 panel 7.2 metres)
 Panel sizes are dependant on wind loading and glass weights. Outside of the above spec please refer to Fletcher Aluminium Oakley Commercial section
 Double glazed 18mm

Components

- 4.41 JAMB REVEALS, TIMBER
 Species/grade: Radiata pine
 Thickness: 19mm
 Treatment: H3.1
 Finish: Pre-primed radiata pine (for paint)
 Type: ~
Species/grade: Rimu and other timbers are available
Thickness option: 19mm to 30mm
Treatment: NZS 3602 requires certain timbers be treated
Finish: Clear or paint
Unless specified otherwise, timber reveals are generally supplied pre-primed for an opaque finish
Jamb liners can be standard, in which case separate architraves are required. Jamb liners can be grooved in this case the section between the groove and edge forms its own architrave
- 4.42 JAMB REVEALS, ALUMINIUM
 Brand/type: 18mm grooved
 Finish: Anodised
Type option: 45mm architrave available (suitable for wet areas)
Finish option: Powder coated
- 4.43 PANELS
 Brand/type: Entrance door panels
 Finish: Powder coat
Specify type, typical options include fibre cement board. Aluminium faced plywood, Aluminium composite panels. Available in 2 panel glazed, 4 panel and 8 panel with or without side lights.

Finishes

- 4.44 FINISH, ANODISED
 Thickness grade: 12 microns
 Colour: Natural silver
State thickness grade (e.g. 25, 20, 15, or 12 microns). 20 microns is usually specified for quality installation though 12 microns is suitable for domestic joinery. Selection of micron can depend on the environment e.g. exposed to salt air. State colour - natural silver is usually specified. For this finish the aluminium has been etched to provide a satin finish. Other options include Bronze, Black Natural Silver, Light bronze, Medium bronze. It may be necessary to specify a form of removable, or temporary protection pending completion of the building (e.g. lacquers, strippable coatings).
- 4.45 FINISH, POWDER COATING
 System: Duralloy
 Film integrity: 10 years
 Colour integrity: 7 years
 Colour: ~
 Thickness: Average of 80 microns with a minimum of 50 microns
System option: Duratec, Film integrity 15 years, Colour integrity 15 years (required for above 3 stories and within sea spray zone).
Colour - Standard, stocked colours to premium non-stocked colours
Thickness - Depends on the particular circumstances with a minimum of 50 microns.

Louvres

- 4.46 LOUVRES, OAKLEY FIXED 110mm BLADE
 Type: Channel frame louvres
 Blade: 300198
 Frame: 300199
Refer to Section 10 page 10.3, Oakley Technical Manual

- 4.47 LOUVRES, OAKLEY FIXED 52mm BLADE
 Type: Channel frame louvres
 Blade: 300194
 Frame: 300193
Refer to Section 10 page 10.3, Oakley Technical Manual
- 4.48 LOUVRES, FLAT PANEL FRAME LOUVRES
 Type: 95mm blade 301828 applied to flat
Refer to Section 10 page 10.4, Oakley Technical Manual
 Type options:
 150mm blade 301783 - Can be applied to flat or angle 100mm x 3mm. This gives a double louvre look with longer louvres
 63mm blade 304506 - Can be applied to flat or angle 40mm x 3mm
 120mm blade 308078 - This is a feature applied to flat or angle blade for aesthetics
 Type option: Angle 75mm x 3mm
 Blade spans depends on number of supporting mullions behind blades
- 4.49 LOUVRES, ADJUSTABLE
 Brand: Breezway Altair
 Type: Glass
 Blade depth: 152mm
 Operation: Manual
 Finish: Silver anodised 25 micron
 Features: ~
 Type options: Cedar, Aluminium
 Size option: 102mm
 Operation options: Remote control manual
 Remote control electronic
 Finish option: Powder coat colours with black clips and handles
 Colours with clips and handles colour matched on request
 Features:
 Standard left hand handle (viewed from inside) can be specified as right hand
 Remote control handle can be specified
 100mm restricted opening can be specified where limited opening is required
 Variable handle position, where handles are difficult to reach in standing position
- Hardware**
- 4.50 EGRESS LOCK, OFFICE CLASSROOM LOCKING LATCH
 Brand: Legge Pacific 995 MF Series
 Type: V31/V32
 Backset: 23mm (38mm overall)
 Outside: Key locks & unlocks handle
 Inside: Inside handle always operative
 Finish: Silver
 Master keying: Required
 Finish option: Bronze
 Warranty - 10 years
- 4.51 EGRESS LOCK, CLASSROOM LOCK
 Brand: Legge Pacific 990MF Series
 Type: V29/V30
 Backset: 60mm (84mm overall)
 Outside: Key locks & unlocks handle
 Inside: Inside handle always operative
 Finish: Silver
 Master keying: Required
 Finish option: Bronze
 Warranty - 10 years
- 4.52 DOOR CLOSERS, EXTERNAL DOORS
 Brand: Ingersoll-Rand LCN1461 adjustable 1- 6 strength
 Fire rated: Tested to AS/NZS 1905 Part1
 Finish: Metal

Finish options: Polished brass, Polished stainless steel, Satin stainless
Warranty - 10 years

- 4.53 DOOR CLOSERS, INTERNAL DOORS
Brand: Ingersoll-Rand LCN 524 adjustable 1- 4 strength
Fire rated: Tested to AS/NZS 1905 Part1
Finish: Metal
Finish options: Polished brass, Polished stainless steel, Satin stainless
Warranty - 10 years
- 4.54 DOOR CLOSERS, FULL HEIGHT HEAVY INTERNAL DOORS
Brand: Ingersoll-Rand 1461t adjustable 1- 4 strength
Fire rated: Tested to AS/NZS 1905 Part 1
Finish: Metal
Finish options: Polished brass, Polished stainless steel, Satin stainless
Warranty - 10 years
- 4.55 COMMERCIAL PUSH PAD EXIT DEVICES, SINGLE DOORS
Brand: Ingersoll-Rand Von Duprin 22 series
Type/size: 914mm VD22EO Rim device exit only
914mm VD2227EO (Vertical rod device exit only)
Fire rated: Yes
Finish: Aluminium
Accessories: ~
Accessories include knobs, levers, night latch, thumb piece, and alarm kit
- 4.56 COMMERCIAL PUSH PAD EXIT DEVICES, DOUBLE DOORS
Brand: Ingersoll-Rand
Type: Rebated door exit only
Size/model: 914mm VDDR22
914mm VDDD2227 (Non-rebated door exit only)
Fire rated: Yes
Finish: Aluminium
Accessories: ~
Accessories include knobs, levers, night latch, thumb piece, and alarm kit
Warranty - 5 years