

TBA

ALUMINUM WINDOWS LIMITED

TECHNICAL SPECIFICATION MANUAL

Residential & Commercial Aluminium Window and Door Systems

New Zealand Technical Specification • Residential & Commercial Systems

Document Control	Details
Document No.	TBA-TS-001
Version	1.1
Issue	August 2026
Status	Current Public Issue
Review	At least annually and whenever products, standards, test evidence or suppliers change
Related documents	TBA-BPIR-001; TBA-IM-001; TBA-MM-001; TBA-WM-001

DOCUMENT APPLICATION

This document provides consolidated technical information for the selection, specification and manufacture of TBA aluminium window and external door systems for New Zealand projects.

Contents

1. Purpose and Scope
2. Product Range and System Overview
3. Aluminium Profiles and Framing
4. Thermal Break Systems
5. Timber Reveals / Jamb Liners
6. Glazing, Safety Glass and IGU
7. Hardware and Accessories
8. Surface Finishes – Powder Coating
9. Verified Performance Evidence - Residential & Commercial
10. Product System Technical Chapters
11. Design & Selection
12. Quality Control and Factory Controls
13. Technical Data Schedules
14. Technical Reference Documents

1. Purpose and Scope

This Technical Specification provides the principal technical information for TBA customised aluminium windows and external doors, including product configurations, materials, glazing, hardware, surface finishes and verified performance information. It applies to TBA fixed, awning, casement and sliding windows, sliding doors and hinged external doors, as applicable to the project. Product selection and manufacture are based on the approved project requirements, applicable system configuration and relevant technical evidence.

2. Product Range and System Overview

Product type	Description	Primary technical controls
Fixed Window	Non-opening glazed aluminium frame	Size, mullion/transom spans, glass, wind/design pressure, fixings and installation
Awning Window	Top-hinged outward-opening sash	Sash mass, friction stays, locking, seals, drainage and glazing
Casement Window	Side-hinged outward-opening sash	Sash mass, hinges/stays, locking, seals and glazing
Sliding Window	Horizontal sliding sash	Panel mass, rollers, interlocks, locks, drainage and glazing
Sliding Door	Horizontal sliding external door	Panel mass, rollers, interlocks, sill/drainage, locks and glazing
Hinged Door	Single or paired hinged external door	Leaf mass, hinges, locking, threshold, seals and glazing
Commercial façade / curtain wall	Project-specific glazed façade assembly	Project design pressures, mock-up evidence, mullion/transom design, anchors, glazing and engineering

3. Aluminium Profiles and Framing

TBA framing is produced from architectural aluminium extrusions selected to the applicable system drawings and project requirements. JMA supplier certificates identify 6063-T5 and 6063-T6 material and include chemical-composition, mechanical-property and dimensional checks.

Technical item	TBA specification / control
Alloy / temper	6063-T5 and 6063-T6 as identified by JMA supplier certificates and applicable extrusion drawings.
Supplier QA basis	GB/T 5237.4-2017 for the referenced supplier material/profile certificates.
Typical frame wall thickness	Generally 1.8mm for applicable TBA residential frame profiles; final value controlled by the selected profile drawing.
Typical opening sash wall thickness	Generally 1.8 mm for applicable opening sash profiles; final value controlled by the selected profile drawing.
Sliding-door members	Selected sliding-door structural members may use

Technical item	TBA specification / control
	approximately 2.0 mm wall thickness; final section/thickness controlled by the applicable profile drawing.
Mullions / transoms	Section, reinforcement and span selected to suit geometry and project loads.
Drainage	Drainage chambers, sill paths and weeps must remain unobstructed and correspond with the system/installation detail.
Profile documentation	TBA-Aluminum.pdf is retained with extrusion schedules, controlled drawings and material certificates.

Wall thickness alone does not establish structural capacity. Section geometry, span, reinforcement, assembly, glazing, fixings and design pressures must be considered together.

4. Thermal Break Systems

TBA may supply thermally broken and non-thermal-break aluminium systems. Thermal-break geometry and material are controlled by the applicable profile/system drawing. Thermal performance claims apply only to the analysed frame/glazing construction and project assumptions.

TBA thermal analysis for the applicable awning-window configuration uses THERM 7.4.6.0 and WINDOW 7.4.6.0 with ISO 10077-2 environmental conditions. Thermal values are applicable to the frame and glazing configuration covered by the relevant calculation.

5. Timber Reveals / Jamb Liners

Where timber reveals are included, TBA may provide treated radiata-pine reveal/jamb material to suit the project wall construction.

Item	Typical project specification / control
Timber	Radiata pine, finger-jointed or equivalent suitable reveal/joinery stock where specified.
Treatment	H3.1 treated timber where specified for the project.
Finish	Pre-primed for site finishing unless another finish is agreed.
Thickness / depth	Project-specific to suit framing, lining and installation details; reveal dimensions are confirmed on the joinery/shop drawings.
Evidence note	H3.1 treatment is specified where required by the approved project documentation. Treatment grade and timber dimensions are to be confirmed for the applicable project supply.

6. Glazing, Safety Glass and IGU

Glass selection is project-specific and must address structural loading, human-impact safety, thermal, acoustic and solar requirements.

Item	Specification / evidence
Safety glass	Intertek SAI Global StandardsMark SMK41054 for Jiangmen Junfa Safety Glass Co., Ltd.; AS/NZS 2208:1996 / AS 2208:2023 scope; schedule includes toughened, laminated and toughened-laminated safety glass types.
IGU	Intertek SAI Global StandardsMark SMK41055 – AS/NZS 4666:2012 for insulating glass units. Project glazing design, glass make-up and installation requirements are confirmed separately for the applicable project.
Typical IGU make-ups	Examples used by TBA include 5 / 12 spacer / 5, 4 / 14 spacer / 4 and 6 / 12 spacer / 6; pane type, safety requirement, coating, spacer and gas remain project-specific.
Low-E / warm-edge / gas	Specified where required by the project H1/thermal design.
Glazing certificate	TBA-Glazing Certificate(1).pdf is retained as project-specific glazing declaration/evidence and linked to glass make-up, safety locations and traceability where applicable.
Project control	Glass schedule, identification, safety locations and installation must correspond with approved project documentation.

7. Hardware and Accessories

TBA uses project-selected operating hardware, including HOPO components where scheduled. Component selection is based on the applicable opening type, sash or panel size and mass, operating duty, security and weather-performance requirements.

Component / evidence	Supplier test information / selection control
HOPO AH207 handle	JG/T 124-2017 supplier report includes appearance, coating thickness/adhesion, operating torque, 25,000-cycle repeated operation, torsion and pull resistance; reported conclusion compliant with the tested standard.
Double-sided door handle assembly	JG/T 393-2012 supplier report includes operating torque, free displacement, allowable deformation, 100,000-cycle repeated operation and 600 N damage-resistance testing.
Locking points / keepers	Supplier evidence retained; select to suit opening type, size, duty, security and weather requirements.
Hinges	Supplier component evidence retained; capacity to suit sash/door size and mass.
Sliding lock body / rollers	Select to suit panel mass, operating duty and security requirements.
Friction stays / restrictors	Select to suit sash geometry/mass and project opening/safety requirements.
Seals / gaskets	Replaceable compatible seals/gaskets selected for system materials and weather performance.

8. Surface Finishes – Powder Coating

Architectural powder coating is selected to suit project colour, exposure and warranty requirements.

Technical item	Verified / controlled information
Powder manufacturer / range	AkzoNobel Interpon D1010 where specified.
Warranty evidence	AkzoNobel guarantee ANCC202510004 dated 15 October 2025.
Warranty period	15-year Silver Global Warranty for the identified project/batches, subject to written terms, approved application, maintenance and exclusions.
Film thickness evidence	JMA supplier certificate pages record local powder-coating thickness not less than 60 µm for the referenced batches/profile certificates.
Colour / gloss	Per approved project schedule.
Exposure	Confirm project environment and coating warranty scope; aggressive marine/industrial exposure may require enhanced provisions.
Maintenance	Follow TBA maintenance manual and coating-supplier requirements; avoid incompatible chemicals, abrasive damage, unapproved touch-up/recoating and incompatible sealants/mastics.

9. Verified Performance Evidence - Residential & Commercial

TBA holds verified performance test evidence for representative residential window and external-door systems and for a commercial facade mock-up. The principal test data is consolidated below to provide a single performance reference for the applicable TBA systems.

Application	Report	Tested system / configuration	Test specimen / mock-up	Test basis	Pressure / performance scope
Residential	HZR22L09-1A	PMU101 - fixed vision + hinged/swing door	2200 W x 2440 H mm	NZS 4211:2008 with AS 4420 series	High Wind: SLS +/-0.97 kPa; ULS +/-1.36 kPa
Residential	HZR22L11-1A	PMU201 - fixed vision + awning window	2200 W x 2140 H mm	NZS 4211:2008 with AS 4420 series	High Wind: SLS +/-0.97 kPa; ULS +/-1.36 kPa
Residential	HZR22L10-1A	PMU301 - fixed + operable sash + sliding door	3300 W x 2440 H mm	NZS 4211:2008 with AS 4420 series	Medium / High Wind; High Wind SLS +/-0.97 kPa; ULS +/-1.36 kPa
Commercial	HZR21M03-1A	Project facade / curtain-wall mock-up including glazed openings and sliding elements	7905 W x 4970 H mm	AS/NZS 4284:2008 + project test sequence	SLS +1.25 / -1.80 kPa; ULS +1.85 / -2.66 kPa

The three NZS 4211 reports include air-infiltration, water-penetration and structural/serviceability testing for the listed residential specimens. The AS/NZS 4284 report records the performance of the listed commercial facade mock-up. For project use, the proposed window, door or facade configuration is checked against the relevant tested construction, dimensions, member spans, glazing, hardware, fixings and design pressures. Where the proposed configuration is outside the applicable tested scope, additional technical assessment or project-specific engineering is required before manufacture.

10. Product System Technical Chapters

10.1 Fixed Window System

Non-opening glazed aluminium frame.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Unit size, mullion/transom spans, glass panel size/mass, design pressure, drainage and fixings.

10.2 Awning Window System

Top-hinged outward-opening sash.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Sash size/mass, friction stays, locking, seals, drainage and glass.

10.3 Casement Window System

Side-hinged outward-opening sash.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Sash size/mass, hinges/stays, locking, seals and glass.

10.4 Sliding Window System

Horizontal sliding sash system.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.

Selection input	TBA control
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Panel mass, rollers, locks, interlocks, drainage and glass.

10.5 Sliding Door System

Horizontal sliding external-door system.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Panel mass, rollers, locks, interlocks, sill/drainage, threshold and glass.

10.6 Hinged Door System

Single/double hinged external-door system.

Selection input	TBA control
Overall size / configuration	Confirm on approved joinery/shop drawings.
Wind / design pressure	Match applicable test evidence or project engineering.
Glass	Approved glass schedule; safety/thermal/acoustic/structural requirements.
Hardware	Select for sash/panel mass, duty, security and weather performance.
Aluminium section	Controlled profile drawing, spans and reinforcement where required.
Installation interface	Project wall/cladding, sill support, flashings, fixings, air seals and drainage.
Key limitation	Leaf mass, hinges, locking, threshold/seals, glass and project accessibility/security requirements.

11. Design & Selection

- Confirm opening type, handing, width/height and fixed/opening arrangement.
- Confirm mullion/transom arrangement, member spans and reinforcement.
- Record project wind zone and/or engineer design pressures.
- Confirm glass make-up, safety locations, thermal/acoustic/solar requirements.
- Confirm hardware, restrictors, closers, accessibility and security requirements.
- Confirm powder-coat colour, exposure and warranty requirements.
- Confirm timber reveal/jamb size and H3.1 treatment where included.
- Coordinate frame/reveal configuration, sill support, structural support, fixings, flashings, air seals and drainage interfaces.
- Approve joinery schedule/shop drawings and any required project-specific engineering before manufacture.

12. Quality Control and Factory Controls

TBA-QAQC Control.pdf documents the controlled inspection process used to support manufacturing consistency.

Stage	Typical controlled checks
Incoming aluminium	Profile identification, dimensions/thickness, finish and certificate/batch checks.
Powder coating	Gloss, adhesion and film-thickness checks where applicable.
Incoming glass	Glass make-up, dimensions, visual quality, identification and safety/IGU evidence.

Stage	Typical controlled checks
Machining	Cutting, hole/slot positions, drainage and machining checks.
Assembly	Dimensions, angularity, joints, seals/gaskets and component fit.
Hardware	Correct components, operation, adjustment and locking.
Drainage	Weeps/channels unobstructed.
Final inspection	Dimensions, finish, operation, labels/traceability and packaging.

TBA factory capability documentation records fabrication processes, production equipment and manufacturing controls used in support of product quality assurance.

13. Technical Data Schedules

13.1 Glass Make-up Examples

Example format	What must be confirmed
5 / 12 spacer / 5 IGU	Pane type, safety requirement, coating, spacer, gas and structural adequacy.
4 / 14 spacer / 4 IGU	Pane type, safety requirement, coating, spacer, gas and structural adequacy.
6 / 12 spacer / 6 IGU	Pane type, safety requirement, coating, spacer, gas and structural adequacy.
Laminated / spacer / pane IGU	Laminate make-up, interlayer and all IGU requirements.

13.2 Aluminium Profile Data

Control	Required record
Alloy / temper	Per extrusion drawing and supplier certificate.
Frame wall thickness	Per approved TBA profile drawing; typical applicable residential value approximately 1.8 mm.
Sash wall thickness	Per approved TBA profile drawing; typical applicable opening-sash value approximately 1.8 mm.
Sliding-door structural member	Per approved drawing; selected members may be approximately 2.0 mm.
Mullion / transom section	Selected to span/load.
Thermal break	Material, geometry and supplier/system data where applicable.
Drainage	Weep paths/chambers shown on system drawing.
Finish	Powder coating specification, batch evidence and project environment.

14. Technical Reference Documents

The following reference documents support the material, component, manufacturing and performance information summarised in this Technical Specification.

Ref	Evidence document	Purpose	Standard / basis	Controlled use
E-01	TBA NZS 4211 Performance Test Reports	Residential window/door performance	NZS 4211:2008 with AS 4420 series	PMU101, PMU201 and PMU301 test evidence; use only for corresponding tested configurations.
E-02	HZR21M03-1A Commercial Façade Performance Test Report	Commercial façade performance	AS/NZS 4284:2008 + project test sequence	Project façade/curtain-wall mock-up evidence.
E-03	TBA-GLASS-1-Certificate SMK41054 20250801.pdf	Safety glass certification	AS/NZS 2208:1996 / AS 2208:2023	Certified safety-glass manufacture for listed glass types/thickness ranges.
E-04	TBA-GLASS-2-Certificate SMK41055 20250801.pdf	IGU certification	AS/NZS 4666:2012	IGU manufacturer/product certification; project glass make-up and installation are confirmed for the applicable project.
E-05	TBA Aluminium Material Test Certificate	Aluminium material / finish QA	GB/T 5237.4-2017 supplier certificate	JMA 6063-T5/T6, chemical/mechanical/dimensional checks; referenced powder-coat pages record local film thickness $\geq 60 \mu\text{m}$.
E-06	AkzoNobel Interpon D1010 Powder Coating Warranty	Powder coating warranty	AkzoNobel Interpon D1010	Guarantee ANCC202510004 dated 15 Oct 2025; 15-year Silver Global Warranty subject to terms.
E-07	HOPO Hardware Test Reports	Hardware component testing	JG/T 124-2017, JG/T 125-2017, JG/T 126-2017, JG/T 393-2012, QB/T 2474-2017 and related methods	Handles, locking points/keepers, hinges, sliding lock body, friction stays and corrosion/durability evidence.
E-08	TBA Manufacturing QA/QC Control	Manufacturing QA/QC	TBA controlled inspection process	Dimensional/thickness/angularity, coating, glass, machining and assembly controls.
E-09	TBA H1 Thermal Calculation	Thermal modelling	THERM 7.4.6.0 / WINDOW 7.4.6.0; ISO 10077-2 conditions	Thermal analysis for the applicable awning-window configuration and stated modelling assumptions.
E-10	TBA Compliance Statement	NZBC / project compliance statement	NZS 4211, NZS 4223; NZBC B1, B2, E2, F2, F4, H1 references	Referenced together with the applicable test, certificate and project design information.
E-11	TBA Glazing Certificate	Project glazing declaration / evidence	Project-specific glazing evidence	Retain with glass make-up, safety locations, installer/producer information and traceability as applicable.
E-12	TBA China Factory Capability Report	Factory capability / production evidence	Supplier/factory evidence	Factory capability and production-control reference.
E-13	TBA Aluminium Profile Documentation	Aluminium/profile supporting information	Supplier/profile documentation	Retain with controlled profile drawings, extrusion schedules and material certificates.

END OF TECHNICAL SPECIFICATION