



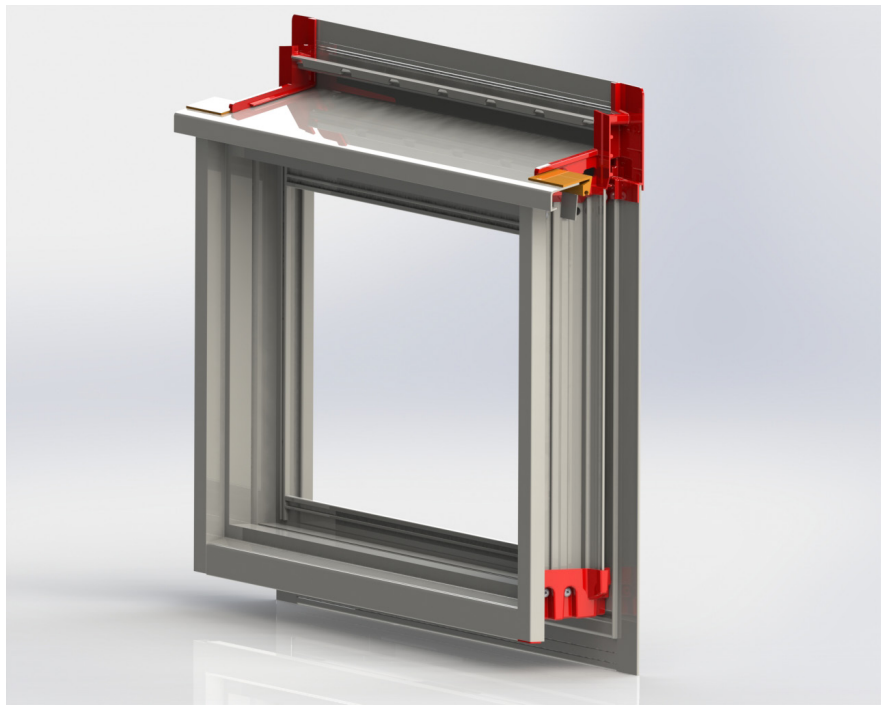
BRANZ Appraised

Appraisal No. 868 [2019]

ALTUS - SMARTFIT WINDOW TECHNOLOGY [WINDOWS AND DOORS]

Appraisal No. 868 [2019]

This Appraisal replaces BRANZ
Appraisal No. 868 [2014].



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Altus - Smartfit Window Technology [Windows and Doors] is a fully assembled aluminium window and door joinery system, comprising Altus [Windows and Doors] Joinery with the proprietary Smartfit flashing system. The Smartfit flashing system comprises specifically designed extruded aluminium sections and reinforced nylon moulded components.
- 1.2 Altus - Smartfit Window Technology [Windows and Doors] incorporates a fixing flange (fin) or rubber seal that allows the joinery to be installed and sealed to the face of the wall underlay or floor edge, a pre-fitted head flashing or soffit bar, and an integral sill support. The joinery is designed for use with cavity-based wall cladding systems and creates a weather and airtight barrier around the joinery perimeter when used with Smartfit flashing tape. Flexible flashing tapes and airseals are therefore not required around the window reveal.
- 1.3 The joinery units are available with fixed glazing or opening sashes. Opening sash styles include awning, casement, bi-fold and sliding windows. Door styles include sliding, bi-fold and hinged.

Scope

- 2.1 Altus - Smartfit Window Technology [Windows and Doors] has been appraised for use as window and door joinery within the following scope:
 - designed and manufactured in accordance with NZS 4211 for weathertightness, airtightness and structural design; and,
 - in new or existing timber framed buildings within the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
 - with cavity-based cladding systems complying with NZBC Acceptable Solution E2/AS1, systems covered by a valid BRANZ Appraisal that specify a nominal 20 mm [minimum 18 mm] drained and vented cavity, or systems covered by a valid CodeMark Product Certificate that specify a nominal 20 mm [minimum 18 mm] drained and vented cavity; and,
 - with masonry veneer complying with NZBC Acceptable Solution E2/AS1; and,
 - situated in NZS 3604 defined Wind Zones up to, and including, Extra High.



Building Regulations

New Zealand Building Code [NZBC]

3.1 In the opinion of BRANZ, Altus - Smartfit Window Technology [Windows and Doors], if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet, or contribute to meeting the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Altus - Smartfit Window Technology [Windows and Doors] meets the requirements arising for loads from self-weight, wind and impact, i.e. B1.3.3 [a], [h] and [j]. See Paragraphs 9.1 - 9.4.

Clause B2 DURABILITY: Performance B2.3.1 [b], 15 years, B2.3.1 [c] 5 years and B2.3.2. Altus - Smartfit Window Technology [Windows and Doors] meets these requirements. See Paragraphs 10.1 and 10.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2, E2.3.5 and E2.3.7 [a]. Altus - Smartfit Window Technology [Windows and Doors] meets these requirements for the joinery units and will contribute to the wall cladding system meeting these requirements. See Paragraphs 14.1 - 14.4.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.2, F2.3.3 [a] and F2.3.3 [b]. Altus - Smartfit Window Technology [Windows and Doors] meets these requirements. See Paragraphs 15.1 and 16.1.

Clause F4 SAFETY FROM FALLING: Performance F4.3.1. Altus - Smartfit Window Technology [Windows and Doors] meets this requirement. See Paragraph 17.1.

Clause G4 VENTILATION: Performance G4.3.1 and G4.3.3. Altus - Smartfit Window Technology [Windows and Doors] can be used to meet these requirements. See Paragraph 18.1.

Clause G7 NATURAL LIGHT: Performance G7.3.1 and G7.3.2. Altus - Smartfit Window Technology [Windows and Doors] can be used to meet these requirements. See Paragraph 19.1.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 and H1.3.2E. Altus - Smartfit Window Technology [Windows and Doors] will contribute to meeting these requirements. See Paragraphs 20.1 and 20.2.

Technical Specification

- 4.1 Altus - Smartfit Window Technology [Windows and Doors] is an aluminium window and door joinery system, which is installed by face fixing the perimeter fin into the outer face of the wall frame. After fixing, the fin is taped to the wall underlay to create a weather and airtight seal. Where tape installation is not possible, e.g. at concrete floor edges or where the joinery finishes hard under a soffit, a rubber seal is used to create an airtight seal. Altus - Smartfit Window Technology [Windows and Doors] incorporates an integral sill support mechanism and a pre-fitted head flashing or soffit bar.
- 4.2 Altus - Smartfit Window Technology [Windows and Doors] frames and sashes are fabricated from 6060 grade, T5 aluminium alloy. The extrusions are polyester powder coated or anodised prior to cutting to length in the joinery manufacturing process. The frames are constructed using moulded top hubs [where head flashings are fitted], bottom corner soakers and mullion soaker drainage blocks. Scribe caps and brick veneer end dams are fitted as required depending on the cladding type.
- 4.3 Each joinery unit is assembled with aluminium profiles, single glazing or insulating glass units, connectors, window fasteners, seals, sealant and opening hardware to meet the requirements of NZS 4211. Where specified, the joinery units are supplied with H3.1 treated timber reveals attached to the aluminium frames by stapling through the nailing fin.
- 4.4 Each joinery unit bears the brand name, a rating showing the appropriate NZS 4211 Wind Zone, and infiltration rating.
- 4.5 Insulated glass units [IGU's] must be selected in accordance with the requirements of NZS 4223 Part 3 and AS/NZS 4666.



- 4.6 Accessories used with Altus - Smartfit Window Technology [Windows and Doors] which are supplied by the window contractor are:
- **Smartfit Flashing Tape** - a pressure-sensitive, self-adhering tape with a PP Fleece protection layer and release backing paper. The tape is coloured black with the product and manufacturer's name printed on the face. The tape is supplied in rolls 60 mm wide by 30 m long. The rolls are wrapped in clear plastic. Smartfit Flashing Tape is used to seal the head, jamb and sill fins to the wall underlay as detailed within the Technical Literature.
- 4.7 Accessories used with Altus - Smartfit Window Technology [Windows and Doors], which are supplied by the building contractor are:
- **Head, sill and jamb fin fixing** - 10-gauge x 32 mm long minimum Grade 316 stainless steel wood screws to fix the head, sill and jamb fins to the wall frame, or sill fins to a concrete floor edge in conjunction with Rawl plug anchors.
 - **Reveal fixings** - 75 x 3.15 mm jolt head hot-dip galvanised nails or 8 gauge x 65 mm stainless steel screws.

Handling and Storage

- 5.1 Handling and storage of Smartfit window and door joinery on site is the responsibility of the installer. Joinery units must be handled with care to avoid damage, especially scratching, and must be stored under cover on edge, and supported on the sill with protection materials [timber strips, cardboard] to avoid damage and distortion.

Technical Literature

- 6.1 Refer to the Appraisals listings on the BRANZ website for details of the current Technical Literature for Altus - Smartfit Window Technology [Windows and Doors]. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

- 7.1 The installation method for Altus - Smartfit Window Technology [Windows and Doors] is an Alternative Solution to the installation method contained within NZBC Acceptable Solution E2/AS1, Paragraphs 9.2 to 9.9, and Figures 17A to D. Altus - Smartfit Window Technology [Windows and Doors] creates a weather and airtight barrier around the perimeter of the joinery unit by sealing the fixing fin to the face of the wall underlay or floor edge. Flexible flashing tapes and airseals are not required around the window reveal.
- 7.2 The airtightness of Altus - Smartfit Window Technology [Windows and Doors] to wall underlay junction has been assessed as being at least equivalent to the flexible flashing tape and window trim cavity airseal solution contained within NZBC Acceptable Solution E2/AS1. The use of Smartfit Flashing Tape or proprietary rubber seal to seal the fixing fins to the wall underlay or floor edge is required to assist the overall weathertightness performance of the wall cladding system.
- 7.3 The Smartfit Flashing Tape must not be exposed to the weather or ultra-violet light for a period greater than 90 days before being covered by the cladding system.
- 7.4 Design of the Smartfit joinery units is carried out to meet the requirements of NZS 4211, NZS 4223 Part 3 and sill support deflection limits.
- 7.5 Where combinations of fixed lights and opening sashes are required, the height of the window will depend on the maximum allowable mullion height for the wind exposure and the mullion spacing selected. The joinery can be of any width, provided the width of any light is within the maximum allowable transom length and the maximum allowable sash width. In all cases, the glass must meet the structural requirements for the wind exposure selected.
- 7.6 It is recommended that Altus NZ Ltd be consulted for information and recommendations on window size, configuration and glass requirements.



- 7.7 Where a proprietary cladding manufacturer provides window and door joinery installation detailing as part of their system, permission must be obtained before Altus - Smartfit Window Technology [Windows and Doors] installation detailing is substituted.
- 7.8 Where Altus - Smartfit Window Technology [Windows and Doors] is used with cladding systems not covered by this Appraisal (refer to Paragraph 2.1), designers must detail the junction between Altus - Smartfit Window Technology [Windows and Doors] and the cladding to meet their own requirements and the performance requirements of the NZBC. Details not included within the Technical Literature have not been assessed and are outside the scope of this Appraisal.

Joinery Security

- 8.1 The design of the joinery units is such that when closed, sashes cannot be readily opened from the outside by, for example, the insertion of a thin blade.

Structure

- 9.1 Altus - Smartfit Window Technology [Windows and Doors] incorporates a sill support system as part of the sill extrusions. The sill extrusions have been tested to BRANZ Evaluation Method EM6 in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.10.5 v). The maximum window size able to be supported by the sill support is determined by Altus NZ Ltd as part of the window design and fabrication process.
- 9.2 The structural performance of Altus - Smartfit Window Technology [Windows and Doors] meets the requirements of NZS 4211.

Wind Zones

- 9.3 Altus - Smartfit Window Technology [Windows and Doors] is suitable for use in all Wind Zones of NZS 3604 up to, and including, Extra High.

Ease of Operation

- 9.4 Sashes fitted with Altus - Pacific Suite [Windows and Doors] hardware meet the opening force requirements of NZS 4211, Paragraph 7, and can be opened without difficulty.

Durability

Serviceable Life

- 10.1 Materials used in the manufacture of Altus - Smartfit Window Technology [Windows and Doors] are also used in the manufacture of the Altus - Pacific Suite [Windows and Doors] and previous aluminium window and door joinery systems. These systems have demonstrated a satisfactory history of use. Altus - Smartfit Window Technology [Windows and Doors] is expected to have an equivalent serviceable life equal to that of established aluminium window and door joinery systems.
- 10.2 During the life of the joinery, components such as IGU's, fittings and seals may need to be replaced due to environmental exposure and damage.

Maintenance

- 11.1 Regular maintenance is required for Altus - Smartfit Window Technology [Windows and Doors] installations to continue to meet the NZBC durability performance requirements and to maximise their serviceable life. BRANZ Bulletin 349 and the Window and Glass Association NZ [WGANZ] guidance documentation is used as a reference for the maintenance of the powder coating and anodised surfaces and the required frequency of washing determined by pollution levels. Joinery installed in polluted areas such as severe industrial, geothermal and marine exposures are recommended to be cleaned every 3 months. Regular cleaning (at least every 6 months) is recommended for unpolluted rural and urban areas.
- 11.2 Annual inspections must be made to ensure that all aspects of Altus - Smartfit Window Technology [Windows and Doors], including visible flashings, seals and cladding junctions remain in a weathertight condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately in accordance with the instructions of Altus NZ Ltd.



- 11.3 Hardware should be periodically lubricated to minimise wear and to ensure smooth operation, and can be readily replaced by the window manufacturer if necessary.
- 11.4 Care must be taken to avoid damage or discolouration of the aluminium members when stripping paint from adjacent timber, for example, by means of a blowlamp or paint stripper.
- 11.5 Concrete, mortars and other alkaline type materials must not come into contact with the aluminium or glass surfaces. If accidental splattering of these materials onto the aluminium or glass does occur, it must be removed immediately by wiping and washing it from the surface with clean water. Paint or other coating material splashes or splatters must also be removed from the surfaces immediately with a clean cloth.
- 11.6 Re-glazing, if required, must be undertaken by glazing tradespersons.

Means of Escape

- 12.1 Where Altus - Smartfit Window Technology [Windows and Doors] doors are used on escape routes, the relevant provisions of NZBC Clause C4 must be met. This may be achieved, for example, by meeting the relevant requirements of NZBC Acceptable Solution C/AS2 Part 3 for access, door fastenings, locking devices, direction of opening, degree and width of opening, hardware and provision of vision panels.

Control of Internal Fire and Smoke Spread

- 13.1 Altus - Smartfit Window Technology [Windows and Doors] is not suitable for use where fire rated windows, fire doors or smoke control doors are required by the NZBC.
- 13.2 Risk Group SH buildings have no internal surface finish [Group Number] requirements. Window components and individual doorsets in other Risk Groups are also exempt from the surface finish requirements. Refer to NZBC Acceptable Solution C/AS2, Paragraph 4.17.6 d) and 4.17.6 g).

External Moisture

General

- 14.1 Altus - Smartfit Window Technology [Windows and Doors] is an Alternative Solution to the window and door joinery solutions provided in NZBC Acceptable Solution E2/AS1. When installed in accordance with this Appraisal and the Technical Literature, Altus - Smartfit Window Technology [Windows and Doors] prevents the penetration of moisture that could cause undue dampness or damage to building elements.
- 14.2 Altus - Smartfit Window Technology [Windows and Doors] must be installed with Smartfit Flashing Tape or proprietary rubber seal to seal the fixing fins to the wall underlay or floor edge, which prevents air leakage. Flexible flashing tapes and airseals around the window and door trim opening as detailed in NZBC Acceptable Solution E2/AS1, Paragraphs 9.1.5 b) and 9.1.6 are not required.
- 14.3 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for cladding junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Appraisal and are the responsibility of the designer for compliance with the NZBC.

Air and Water Leakage

- 14.4 Altus - Smartfit Window Technology [Windows and Doors] complies with the air and water leakage requirements of NZS 4211, Sections 8 and 9 when tested in accordance with that Standard. Air leakage ratings for the joinery can reach the NZS 4211 air conditioning rating. Water leakage ratings allow for their installation in NZS 3604 defined Wind Zones up to, and including, Extra High.

Hazardous Building Materials

- 15.1 A long history of use of aluminium window joinery has demonstrated that it can be considered stable and non-hazardous. Other materials used in the fabrication of Altus - Smartfit Window Technology [Windows and Doors], including gaskets and seals, and door and window hardware also demonstrate a long and non-hazardous history of use.



Human Impact Safety Requirements

- 16.1 Where specified, glazing must be supplied to comply with NZBC Acceptable Solution F2/AS1, Section 1.0.

Safety from Falling

- 17.1 Where specified, Altus - Smartfit Window Technology [Windows and Doors] is supplied to comply with NZBC Acceptable Solution F4/AS1, Section 2.0.

Ventilation

- 18.1 Altus - Smartfit Window Technology [Windows and Doors] can be used to meet the ventilation performance requirements of the NZBC if the joinery is installed in exterior walls that enclose occupied spaces, in sufficient quantity or size with opening sashes to provide a net openable area of not less than 5% of the room floor area.

Natural Light

- 19.1 The joinery can be used to meet the performance requirements of the NZBC for natural light providing a sufficient number of joinery units are installed with an acceptable glazing area's transmittance value, and they are located correctly within exterior walls along with an acceptable interior surface reflectance. NZBC Acceptable Solution G7/AS1 provides guidance for meeting the area, glazing transmittance value, location and surface reflective requirements.

Energy Efficiency

- 20.1 Altus - Smartfit Window Technology [Windows and Doors] supplied with IGU's will assist the building envelope in meeting the performance requirements of NZBC H1.3.1 and H1.3.2E.
- 20.2 If specified by the designer, the window trim cavity between the reveal and wall frame can be filled with an insulation material.

Installation Information

Installation Skill Level Requirements

- 21.1 All design and building work must be carried out in accordance with the Altus - Smartfit Window Technology [Windows and Doors] Technical Literature and this Appraisal by competent and experienced tradespersons conversant with Altus - Smartfit Window Technology [Windows and Doors]. Where the work involves Restricted Building Work [RBW] this must be completed by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant License class.

System Installation

- 22.1 The timber framing around the window opening must be checked to ensure that the framing is aligned and free from any protrusions. Where the joinery unit extends to the floor, the framing line must finish flush with the floor edge or overhang by up to 5 mm. The framed opening size clearance is not important, however a 5 mm clearance all-round the joinery reveal is recommended.
- 22.2 The selected wall underlay must be installed by the building contractor in accordance with the underlay manufacturer's instructions prior to the installation of Altus - Smartfit Window Technology [Windows and Doors].
- 22.3 Installation of the joinery must be carried out before the installation of the cavity battens and selected cladding. The joinery unit is fitted into the formed opening with the outer fixing fin finished hard against the face of the wall frame over the wall underlay. The sill must be set true and level and jambs plumb before fixing the joinery permanently in place.
- 22.4 The sill is fixed through the fixing fin to the sill trimmer or floor edge with 10-gauge x 32 mm long minimum Grade 316 stainless steel wood screws at 300 mm centres maximum. The end fixings are to be positioned no further than 150 mm from the corner of the unit. For concrete floors, anchor plugs must be installed to receive the screw fixing. The jambs and head are fixed through the fixing fin to the wall framing with 10-gauge x 32 mm long minimum Grade 316 stainless steel wood screws at 300 mm centres maximum, and not more than 150 mm from each corner.



- 22.5 Where a heavy duty head flashing is required (for bi-fold and stacker doors), it must be fixed to the wall frame with 10-gauge x 32 mm long minimum Grade 316 stainless steel wood screws at 200 mm centres maximum, and not more than 150 mm from each end of the flashing. Cluster four screws at 50 mm centres above where the bi-fold panels stack open.
- 22.6 If necessary, packing can be provided between the joinery reveal and framing to straighten the reveal liner prior to fixing. Packers between the reveal liner and lintel must be removed after the reveal liner is fixed. The reveal liner is fixed as required with 75 x 3.15 mm jolt head hot-dip galvanised nails or 8 gauge x 65 mm stainless steel screws. Where the joinery unit is installed without the head flashing (e.g. when it is installed against a soffit or brick veneer lintel), the reveal liner must be fixed with two 75 x 3.15 mm jolt head hot-dip galvanised nails or two 8 gauge x 65 mm stainless steel screws at 450 mm centres maximum, and not more than 150 mm from each corner.
- 22.7 After the joinery unit has been fixed in place, the sill, jamb and head fixing fins must be taped to the wall underlay with Smartfit Flashing Tape where possible. The tape must be installed with 30 mm covering the fixing fin and 30 mm onto the wall underlay. All fixings and unused fixing holes must be covered. *[Note: Where tape installation is not possible, e.g. at concrete floor edges or where the joinery finishes hard under a soffit, a rubber seal is used to create an airtight seal.]*
- 22.8 The cavity battens and wall cladding system can then be installed around Altus - Smartfit Window Technology [Windows and Doors] in accordance with the Technical Literature.
- 22.9 Appropriately specified windows and doors must be installed where required to comply with the requirements of Safety from Falling and Human Impact Safety.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

- 23.1 Testing has been carried out on Altus - Smartfit Window Technology [Windows and Doors] joinery to NZS 4211. This testing covered positive and negative deflection, operating force [static and moving], air infiltration [negative and positive], water penetration, ultimate strength and torsional strength. Testing was undertaken at the Altus NZ Ltd test laboratory, which is an IANZ [International Accreditation New Zealand] accredited laboratory and was observed by BRANZ. The report has been reviewed by BRANZ experts and found to be satisfactory.
- 23.2 Testing of Altus - Smartfit Window Technology [Windows and Doors] to the BRANZ ad-hoc method for airtightness of window installation methods was completed at BRANZ. The testing compared the performance of Altus - Smartfit Window Technology [Windows and Doors] with the known airtightness of the NZBC Acceptable Solution E2/AS1 window installation method.
- 23.3 BRANZ expert opinion on NZBC E2 code compliance for Altus - Smartfit Window Technology [Windows and Doors] was based on testing and evaluation of the details within the scope and as stated within this Appraisal. Altus - Smartfit Window Technology [Windows and Doors] was tested to NZBC Verification Method E2/VM1 to verify the systems performance in NZS 3604 Wind Zones up to, and including, Extra High. The testing assessed the performance of the window head, jamb and sill details with cavity based wall cladding systems. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that Altus - Smartfit Window Technology [Windows and Doors] when used with masonry veneer and cavity-based cladding systems complying with NZBC Acceptable Solution E2/AS1 or cladding systems covered by a valid BRANZ Appraisal that specify a nominal 20 mm [minimum 18 mm] drained and vented cavity will meet the performance levels of NZBC Acceptable Solution E2/AS1 for window and door joinery installation.
- 23.4 Testing was conducted according to BRANZ Evaluation Method No. 6 [2011] Test and Evaluation Procedure for Window and Door Supports [EM6] in order to determine the load carrying capacity of Altus - Smartfit Window Technology [Windows and Doors] door and window sills intended to be used without additional supporting members.



23.5 The Smartfit Flashing Tape has been tested to BRANZ criteria to assess the tensile strength of control and UV aged material, water resistance of control and UV accelerated aged material and pliability. BRANZ has determined that the tape is fit for purpose for the intended use. The adhesion of Smartfit Flashing Tape to black bituminous Kraft paper complying with the requirements of NZBC Acceptable Solution E2/AS1, Table 23, other selected synthetic flexible wall underlays and rigid wall underlays has also been tested and found to be satisfactory.

Other Investigations

- 24.1 Opinions on durability, strength and stability of the joinery have been given by BRANZ experts.
- 24.2 Site inspections were carried out by BRANZ to assess the practicability of installation of Altus - Smartfit Window Technology [Windows and Doors].

Quality

- 25.1 The extrusion and fabrication process for Altus - Smartfit Window Technology [Windows and Doors] has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 25.2 Altus NZ Ltd or its licensees are responsible for both the design and quality of the fabricated joinery supplied.
- 25.3 Building designers are responsible for the design of the building and for the incorporation of Altus - Smartfit Window Technology [Windows and Doors] into their design in accordance with the instructions of Altus NZ Ltd.
- 25.4 The quality of installation, handling and storage on site is the responsibility of the installer, in accordance with the instructions of Altus NZ Ltd.
- 25.5 Building owners are responsible for the maintenance of the joinery in accordance with the instructions of Altus NZ Ltd.

Sources of Information

- AS/NZS 4666: 2012 Insulating glass units.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4211: 2008 Specification for performance of windows.
- NZS 4223 Part 3: 2016 Glazing in buildings.
- BRANZ Bulletin Number 634 Finishing aluminium, February 2019.
- Ministry of Business, Innovation and Employment Record of Amendments - Acceptable Solutions, Verification Methods and Handbooks.
- The Building Regulations 1992.



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BRANZ Appraisal
Appraisal No. 868 [2019]
18 December 2019

ALTUS - SMARTFIT WINDOW
TECHNOLOGY [WINDOWS AND
DOORS]



In the opinion of BRANZ, **Altus - Smartfit Window Technology [Windows and Doors]** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Altus NZ Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the Technical Literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Altus NZ Ltd**:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions;
 - d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Altus NZ Ltd**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Altus NZ Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

18 December 2019