BRANZ Appraised

Appraisal No. 1304 (2025)

GY ALUMINIUM JOINERY

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BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 GY Aluminium Joinery is thermally broken aluminium window and door joinery units. The joinery units are available with fixed glazing or opening sashes.

1.2 The opening sash window styles covered are Awning and Casement (open out).

1.3 The opening door styles covered are:

- Sliding Door
- Sliding Door (three rail)
- Hinged Door (open out)
- Hinged Door (open in).

Scope

2.1 GY Aluminium Joinery has been appraised for use as window and door joinery within the following scope:

- when 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; and
- situated in NZS 3604 defined Wind Zones up to, and including, Extra High for all window and door types; and,
- with cladding systems complying with NZBC Acceptable Solution E2/AS1 or covered by a valid BRANZ Appraisal or CodeMark certificate; and,
- with masonry veneer complying with NZBC Acceptable Solution E2/AS1.

2.2 GY Aluminium Joinery has also been appraised for compliance with NZS 4211 where it is specified for use outside the scope of NZBC Acceptable Solution E2/AS1, and/or the building is outside the scope limitations of NZBC Acceptable Solution E2/AS1, but is within the wind exposure limitations of NZS 4211. The building weathertightness design and installation of the window and door joinery in these situations is subject to specific design and is outside the scope of this Appraisal.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, GY Aluminium Joinery, 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. GY Aluminium Joinery meets the requirements for loads arising from self-weight, wind and impact, [i.e. B1.3.3 (a), (h) and (j)]. See Paragraphs 9.1-9.3.

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years for the windows and doors and B2.3.1 (c) 5 years for the hardware. GY Aluminium Joinery meets these requirements. See Paragraphs 10.1-10.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. GY Aluminium Joinery meets this requirement for the joinery unit and contributes to the wall cladding system meeting this requirement. See Paragraphs 14.1-14.4.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.2 and F2.3.3 (a). GY Aluminium Joinery meets these requirements. See Paragraph 15.1.

Clause F4 SAFETY FROM FALLING: Performance F4.3.1. GY Aluminium Joinery can be used to meet this requirement. See Paragraph 16.1.

Clause G4 VENTILATION: Performance G4.3.1 and G4.3.3. GY Aluminium Joinery can be used to meet these requirements. See Paragraph 18.1.

Clause G7 NATURAL LIGHT: Performance G7.3.1 and G7.3.2. GY Aluminium Joinery can be used to meet these requirements. See Paragraph 19.1.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 and H1.3.2E. GY Aluminium Joinery contributes to meeting these requirements. See Paragraph 20.1.

Technical Specification

General

4.1 GY Aluminium Joinery is fabricated from aluminium extrusions that are thermally broken with a polyamide spacer within the profile sections. The extrusions are polyester powder-coated to the selected colour prior to cutting to length in the joinery fabrication process.

4.2 Each joinery unit is assembled with aluminium profiles, insulating glass units (IGUs), 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.

4.3 Each joinery unit bears the brand name, a rating showing the appropriate NZS 4211 Wind Zone, and air infiltration rating.

4.4 GY Windows & Doors can supply IGUs with the joinery units. These IGUs meet the relevant requirements of NZS 4223 Parts 1 to 4 and are marked with the month and year of manufacture on the glass. If IGUs are supplied by other manufacturers, these must also meet the relevant requirements of these standards, but these IGUs have not been assessed and are outside the scope of this Appraisal.

Accessories

4.5 Accessories used with GY Aluminium Joinery which must be supplied by the joinery installer are:

- Joinery sill support bars and fixings complying with NZBC Acceptable Solution E2/AS1.
- Head flashings complying with NZBC Acceptable Solution E2/AS1.
- Sill flashings (for direct fixed claddings) complying with NZBC Acceptable Solution E2/AS1.

4.6 Fixings used to fit GY Aluminium Joinery to the framing which are supplied by the window installer are minimum:

- 65 mm x 8 g stainless steel screws, or,
- 75 x 3.15 mm hot-dip galvanised nails.

Handling and Storage

5.1 Handling and storage of GY Aluminium Joinery on-site is the responsibility of the window 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 (e.g. timber blocking) to avoid damage and distortion.

Technical Literature

6.1 This Appraisal must be read in conjunction with:

- GY Thermal Breaks Window and Door Systems Detail Drawings dated 2025.06.25 Rev 02.
- Window & Glass Association New Zealand, Guide to Window Installation as described in E2/AS1 Amendment 10, Version 1.7, 23 November 2022.

6.2 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 joinery units are designed to meet the requirements of NZS 4211 and NZS 4223 Part 3.

7.2 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.

7.3 It is recommended that GY Windows & Doors be consulted for information and recommendations on window size, configuration and glass requirements.

7.4 Where GY Aluminium Joinery is used with cladding systems not covered by this Appraisal (refer to Paragraph 2.2), designers must detail the junction between the joinery 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 The structural performance of GY Aluminium Joinery meets the requirements of NZS 4211.

Wind Zones

9.2 GY Aluminium Joinery is suitable for use in NZS 3604 defined Wind Zones up to, and including, Extra High.

Ease of Operation

9.3 The sashes meet the opening force requirements of NZS 4211 and can be opened without difficulty.

Durability

Serviceable Life

10.1 GY Aluminium Joinery and associated gaskets and seals are expected to remain serviceable under New Zealand conditions for as least 15 years. Over time, some loss of gloss and some colour fade may affect the appearance of the surface finish.

10.2 During the life of the joinery, components such as IGUs, fittings and seals may need to be replaced due to environmental exposure and damage.

Maintenance

11.1 Regular maintenance is required for GY Aluminium Joinery to continue to meet the NZBC durability performance requirements and to maximise its serviceable life. BRANZ Bulletin Issue 634 and the Window & Glass Association New Zealand (WGANZ) guidance documentation should be used as a reference for the maintenance of the powder coating 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 GY Aluminium Joinery, 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 GY Aluminium Joinery.

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 tradespeople.

Means of Escape

12.1 Where GY Aluminium Joinery 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 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 GY Aluminium Joinery is not suitable for use where fire rated windows, fire doors or smoke control doors are required by the NZBC.

External Moisture

General

14.1 GY Aluminium Joinery must be installed in accordance with NZBC Acceptable Solution E2/AS1. When installed in accordance with this Appraisal and the Technical Literature, GY Aluminium Joinery prevents the penetration of moisture that could cause undue dampness or damage to building elements.

14.2 Buildings outside the scope of NZBC Acceptable Solution E2/AS1 must be the subject of specific weathertightness design for the joinery installation details. The designer must develop these joinery installation details to meet their own requirements and the performance requirements of the NZBC. These details have not been assessed and are outside the scope of this Appraisal.

14.3 All window and door joinery must be installed using flexible flashing tapes and air seals in accordance with NZBC Acceptable Solution E2/AS1, or when used outside the scope of NZBC Acceptable Solution E2/AS1, specific weathertightness design details must also follow these principles.

Air and Water Leakage

14.4 GY Aluminium Joinery complies with the air and water leakage requirements of NZS 4211. Air leakage ratings for the joinery achieve 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

Human Impact Safety

15.1 Glazing likely to be subject to human impact must comply with NZS 4223 Part 3, as specified in NZBC Acceptable Solution F2/AS1.

Safety from Falling

16.1 Where specified, GY Aluminium Joinery can be supplied to comply with NZBC Acceptable Solution F4/AS1.

Restricting Access to Residential Pools

17.1 Openable windows and doors that provide access to the immediate pool area must be carefully considered in the building design stage by the designer, paying particular attention to any requirements for restrictor stays or self-closing and self-latching door hardware. The design of windows and doors and their hardware specifications in these instances are outside the scope of this Appraisal. NZBC Acceptable Solution F9/AS1 provides guidance for meeting these requirements.

Ventilation

18.1 GY Aluminium Joinery 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 GY Aluminium 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 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

Table 1: Selected NZBC Acceptable Solution H1/AS1 Window R-values

IGU Spacer Type	IGU Type	Thermally broken aluminium frame R-value (m^2K/W)
Aluminium	Clear/Clear: Air	0.32
Aluminium	Clear/Low E1: Argon	0.39
Thermally Improved	Clear/Low E2: Argon	0.42
Thermally Improved	Clear/Low E3: Argon	0.46
Thermally Improved	Clear/Low E4: Argon	0.50
Thermally Improved	Clear/Low E4: Krypton	0.54

20.1 GY Aluminium Joinery supplied with IGUs will assist the building envelope in meeting the performance requirements of NZBC H1.3.1 and H1.3.2E. Refer to NZBC Acceptable Solutions H1/AS2 and H1/AS2 and Verification Methods H1/VM1 and H1/VM2 for means of demonstrating compliance with the H1 Energy Efficiency performance provisions. For GY Aluminium Joinery, the construction R-values from NZBC Acceptable H1/AS1 should be used. The relevant construction R-values are detailed in Table 1.

Installation Information

Installation Skill Level Requirement

21.1 All design and building work must be carried out in accordance with the Technical Literature and this Appraisal by competent and experienced tradespeople conversant with aluminium joinery installation. 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 Licence class. Where the installation is exempt from requiring building consent, the installation of GY Aluminium Joinery must comply with the NZBC and be completed by builders or installers with experience in window and door installation.

System Installation

22.1 WGANZ provides Technical Literature covering installation details for aluminium windows and doors. Information may also be obtained from NZBC Acceptable Solution E2/AS1.

22.2 The selected underlay must be installed by the building contractor in accordance with the underlay supplier's instructions. Flexible flashing tape must be fitted to the sill and the head/jamb junction in accordance with NZBC Acceptable Solution E2/AS1, prior to installation of GY Aluminium Joinery.

22.3 The framed opening size must be large enough to give approximately 7.5-10 mm clearance all round between the wall framing and the reveal liner. Installation of joinery may be carried out before or after the fixing of the cladding depending on the type of cladding and sealing or flashing system being used.

22.4 Sills must be set true and level and jambs plumb before fixing the joinery permanently in place.

22.5 Fixings into the supporting framing must be in accordance with NZBC Acceptable Solution E2/AS1, with regard to fixing type and position. Packing must be provided between the joinery reveal and framing or substrate at the point of fixing to set the joinery frame in correct alignment. There must be no vertical or lateral pressures transmitted to the joinery frames from the building structure, cladding or packers. All packers must be in a sound condition suitable for supporting the selected fastener or fixing.

22.6 The installation of the joinery and associated flashings must be in accordance with the details provided in NZBC Acceptable Solution E2/AS1 or details of a specific design.

22.7 Appropriately specified windows and doors must be installed where required to comply with the requirements of Safety from Falling, Restricting Access to Residential Pools and Human Impact Safety.

Basis of Appraisal

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

23.1 Testing to NZS 4211 has been completed on the joinery by an accredited laboratory. This testing covered positive and negative deflection, operating force (static and moving), air infiltration (positive and negative), water penetration, ultimate strength, and torsional strength. The test reports were reviewed by BRANZ experts and found to be satisfactory.

23.2 Opinions on the durability of the joinery components and a weathertightness opinion have been given by BRANZ experts.

23.3 Site inspections have been carried out by BRANZ to assess the practicability of installation of the joinery, and to examine completed installations for use and ease of operation, and long term durability.

Quality

24.1 The fabrication of the joinery units has been examined by a BRANZ agent. Details regarding the quality and composition of the materials has been obtained by BRANZ and found to be satisfactory.

24.2 GY Windows & Doors is responsible for both the design and quality of the fabricated joinery supplied.

24.3 Building designers are responsible for the design of the building, and for the incorporation of the joinery into their design in accordance with this Appraisal.

24.4 Installers and glaziers are responsible for the quality of installation in accordance with the installation instructions of GY Windows & Doors.

24.5 Building owners are responsible for the maintenance of the joinery in accordance with this Appraisal. Refer also to Paragraphs 11.1-11.6.

Sources of Information

- AS/NZS 4666:2012 Insulating glass units.
- BRANZ Bulletin Issue 634, Finishing aluminium, February 2019.
- NZS 3602:2003 Timber and wood-based products for use in building.
- NZS 3604:2011 Timber-framed buildings.
- NZS 4211:2008 Specification for performance of windows.
- NZS 4223.3:2016 Glazing in Buildings - Part 3: Human impact safety requirements.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.
- Window & Glass Association New Zealand, Guide to Window Installation as described in E2/AS1 Amendment 10, Version 1.7, 23 November 2022.
- Window & Glass Association New Zealand, Maintenance, Version 1, undated.

BRANZ

In the opinion of BRANZ, GY Aluminium Joinery 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 GY Group Limited t/a GY Windows & Doors, 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. GY Group Limited t/a GY Windows & Doors:
   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 quality of work;
   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 GY Group Limited t/a GY Windows & Doors
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 GY Group Limited t/a GY Windows & Doors or any third party.

For BRANZ

Claire Falck
Chief Executive

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07 November 2025