Design Guide

Architects, Engineers & Interior Designers

PaneLux® A1

Solid Aluminium

Cladding System

Version: V1.1 – 042026
Version Date: 01/04/2026

www.mulford.co.nz

Design Guide

This Design Guide has been produced with the understanding that the product will be used in accordance with the manufacturer's details in the application described below.

1. General:

This Design Guide outlines the design and specification requirements for the PaneLux® A1 Solid Aluminium Cladding System, supplied by Mulford New Zealand. While every effort has been made to ensure the accuracy of the information contained, this guide is intended for reference purposes only and may be subject to change without notice. Contact Our Expert Team - Mulford New Zealand

2. Essential Documents:

This Design Guide must be read in conjunction with these documents:

- PaneLux®A1 Solid Aluminium Cladding System Product Technical Statement V2 122025.
- PaneLux® A1 Solid Aluminium Cladding System BPIR Version V1.1 April 2026.
- PaneLux® A1 Solid Aluminium Cladding System – Specification Guide V1.1 042026.
- PaneLux® A1 Solid Aluminium Cladding System Design Guide V1.1 042026.
- PaneLux® A1 Solid Aluminium LAB System Typical Details 25th July 2025
- PaneLux® A1 Solid Aluminium Panel Cleaning and Maintenance Guide V1.1 042026.
- PaneLux® A1 Solid Aluminium Panel Processing and Technical Data Guide V1.1 March 2026
- PaneLux® A1 Solid Aluminium Panel – Visual Specification and Quality Plan V1.1 032026

Refer to the following related documents:

- NZS 3604:2011 for timber-framed buildings
- NZS 3404:2009 Part 1 and the NASH Standard Part 2: May 2019 for light steel-framed buildings

3. Description of Product:

PaneLux® A1 is a 3 mm thick solid aluminium panel, pre-finished and coil coated using an in-line three coat fluorocarbon PVDF system. The rear aluminium sheet face has a mill finish or polyester-based service coat. Product identification including the product name, colour and production date can be located on the rear of the panel.
Length (mm): 3200 & 4000 (standard), up to 6000 (indent) Width (mm): 1550 (standard), 1250 (indent). Weight 8.1 kg/m2.

PaneLux® A1 panels are manufactured from solid aluminium and contain no composite or polymer core.

4. Substitutions:

PaneLux® A1 Panel substitutions are not permitted. PaneLux® A1 can be fabricated and fixed using the LAB Extrusion System to the product installation guides and supplementary details, additionally, the PaneLux® A1 panel may also be used in conjunction with other proprietary cassettes systems that meet the projects performance matrix prepared by a suitable qualified chartered professional engineer.

Design Guide

Architects, Engineers & Interior Designers

PaneLux® A1

Solid Aluminium Cladding System

Version: V1.1– 042026
Version Date: 01/04/2026

www.mulford.co.nz

5. Confirmation of Scope:

Ensure the proposed application falls within the system's specified scope and constraints of the PaneLux® A1 Solid Aluminium Cladding System. Contact Our Expert Team - Mulford New Zealand

6. Related Building Work:

The project design and installation of the PaneLux® A1 Solid Aluminium Cladding System relies on the following:

- In accordance with NZS 3604:2011 for timber-framed buildings; or
- In accordance with NZS 3404:2009 Part 1 and the NASH Standard Part 2: May 2019 for light steel-framed buildings.
- Or by specific engineering design (SED) in accordance with B1/VM1 Amendment 21 (2 November 2023), prepared by a suitably qualified chartered professional engineer.
- Inter-storey drained joints must be installed to limit continuous cavities to a maximum of two storeys or 7 metres in height, whichever is less, as required by NZBC Acceptable Solution E2/AS1.
- Ensure that the building underlay, rigid air barrier, and fixings are appropriate for the application and comply with Table 23 of Acceptable Solution E2/AS1, particularly in Extra High wind zones.

7. Design Summary:

Clearance at Ground Level:

- The bottom edge of PaneLux® A1 Solid Aluminium Cladding System must be at least 100 mm above paved surfaces (e.g., footpaths) and at least 175 mm above unpaved surfaces, in accordance with NZBC Acceptable Solution E2/AS1.

Clearance at Balconies, Decks, and Low-Pitched Roof/Wall Junctions:

- At balconies, decks, or low-pitched roof-to-wall junctions, maintain a minimum clearance of 35 mm between the bottom edge of the cladding system and any adjacent surface or the top of any adjacent roof flashing, as required by NZBC Acceptable Solution E2/AS1 (Paragraph 9.1.3.6) or NASH Building Envelope Solutions (Paragraph 9.1.3).

Junctions with Other Cladding Systems:

- When the PaneLux® A1 Solid Aluminium Cladding System meets other cladding systems, the designer must provide detailed junctions that comply with project requirements and NZBC performance standards.

Timber Framing:

- The building designer is responsible for specifying the framing design, including timber strength and treatment requirements.
- Studs must be spaced at a maximum of 600 mm centres and positioned to adequately support all cladding panel joints. Flush-fitted nogs should be included where needed.
- Timber framing must conform to NZS 3604 or be specifically designed following AS/NZS 1170, with stiffness equivalent to or exceeding NZS 3604 requirements.
- The moisture content of timber framing must not exceed 24% at the time of cladding installation to prevent issues caused by timber shrinkage.

Design Guide

Architects, Engineers & Interior Designers

PaneLux® A1

Solid Aluminium Cladding System

Version: V1.1 – 042026
Version Date: 01/04/2026

www.mulford.co.nz

Wall Underlay & Inter-storey Junctions:

- Ensure that the building underlay, rigid air barrier, and fixings are appropriate for the application and comply with Table 23 of Acceptable Solution E2/AS1, particularly in Extra High wind zones.
- Inter-storey drained joints must be installed to limit continuous cavities to a maximum of two storeys or 7 metres in height, whichever is less, as required by NZBC Acceptable Solution E2/AS1.

Structure & Impact Performance:

- PaneLux® A1 Solid Aluminium Cladding System is designed to resist anticipated human impact loads. The panel surfaces of PaneLux® A1 are prone to damage from concentrated impacts by hard or sharp objects. Therefore, strict care must be exercised during installation to mitigate the risk of surface damage. Impact load considerations should be integrated into the design phase, with protective measures—such as bollards or physical barriers—specified for locations subject to potential impact. Furthermore, impact resistance criteria must be incorporated into the structural engineering analysis to ensure system integrity under expected loading conditions.
- Aluminium panels will undergo thermal expansion and contraction and this movement must be accommodated within the façade panel layout, cassette design, and fixing system.

Durability:

- The duration of the PaneLux® A1 Panel warranty (the “Warranty Period”) shall be for 15 years (for Colours) and 20 years (for stock colours Black & White), for panels installed in New Zealand.
- PaneLux® A1 Solid Aluminum Cladding System Cleaning & Maintenance Guide must be followed. Recommended cleaning frequency is detailed below, refer Cleaning and Maintenance Guide.

Conditions	Example Environments	Recommended Minimum Cleaning
Mild	Arid, dry, urban, inland, city	Every 12 months
	Light industrial, geothermal (>500m from source) and inland coastal (mild sea spray zone)	Every 6 months
Severe	Sea shore (medium sea spray zone), offshore Islands and or geothermal (<500m from source)	Every 6 months
	Sea shore (high sea spray zone e.g., surf), offshore Islands	Every 6 months
	Heavy industrial, airport, transport hubs	Every 6 months
General Interior	Dry interiors (homes, offices, shops)	Every 12 months
	Minor condensation (warehouses, sports halls)	Every 12 months
Moderate Interior	High moisture (dairy and food processing plants, breweries, and commercial laundries)	Every 6 months
	Significant contamination (swimming pools)	Every 6 months

Environmental exposure conditions including coastal and industrial environments should be considered during façade design, material selection, and maintenance planning to ensure long term system durability.

Design Guide

Architects, Engineers & Interior Designers

PaneLux® A1

Solid Aluminium

Cladding System

Version: V1.1 – 042026
Version Date: 01/04/2026

www.mulford.co.nz

8. Design Quality Checklist:

- Verify that all applicable design requirements have been satisfied.
- Review all documentation—including plans, construction details, and the specification guide—to ensure completeness and accuracy.
- Confirm that the building consent plans and specifications clearly identify and include:
  I. All necessary installation details.
  II. Specified fixings, including type and method of installation.
  III. Ensure that all required documentation has been compiled for submission with the building consent application.

9. Structural Design Responsibility

PaneLux® A1 Solid Aluminium panels are non-structural façade elements and must be supported by an appropriately designed carrier system.

The supporting structure, fixing system and load transfer to the primary building structure must be designed by a suitably qualified engineer in accordance with project specific wind loads and applicable structural standards.

The PaneLux® LAB Extrusion System provides the fixing interface for cassette panels; however, the final structural design including fixing spacing, bracket configuration and structural support remain the responsibility of the project engineer.

Where alternative carrier systems are proposed, the system must be supported by project specific engineering design.