

## CERTIFICATE – CLADDING BOARD FIXINGS FOR SOFFITS

Project: Standard Certification  
Fixings for Cladding Board for Soffits

Project No: 20319  
Date: March 2021  
Engineer: A. Subedi

For: Knotwood Pty Ltd

### SCOPE

Magryn & Associates have been engaged to undertake structural calculations and specify fixings to install Knotwood Aluminium Cladding Boards to various soffit substrates in various regions of Australia. This is to specify and certify the structural adequacy of the fixings and comply with the current relevant Australian Standards.

### GENERAL

Knotwood Cladding is an interlocking, aluminium cladding system and is available in 200mm (KWDC200), 150mm (KWDC150) and 100mm (KWDC100) wide boards. The cladding boards are manufactured from 6060-T5 and 6063-T6 Aluminium alloy.

This certification is for the soffit fixings only; the structural adequacy of the Aluminium cladding boards and soffit substrates have not been checked by Magryn & Associates.

The structural calculations have been undertaken for the 200mm wide cladding board (KWDC 200), fixings for the smaller cladding boards are to be similar.

Design loads considered are self-weight and wind suction for Regions A, B and C in Australia. The fixings have been designed to be installed to steel stud, timber stud and concrete soffits.

The structural calculations are based on information and drawings provided by Knotwood Pty Ltd.

## DESIGN STANDARDS

Calculations have been undertaken in accordance with the following Australian Standards and conditions.

### **Australian Standards:**

- AS/NZS 1170.0-2002 Structural design actions Part 0: General principals
- AS/NZS 1170.1-2002 Structural design actions Part 1: Permanent, imposed and other actions
- AS/NZS 1170.2-2011 Structural design actions Part 2: Wind actions
- AS 1664.1-1997 Aluminium structures

### **Conditions:**

- Wind average recurrence interval of 500 years
- Terrain Category 2
- Building height  $\leq 42\text{m}$
- Shielding and Topographic Multiplier  $M_s$  and  $M_t$  taken as 1.0
- Local pressure factor  $K_f$  taken as 3.0

## RESULT

All fixing anchors are to be stainless steel. Alternatively, hot dipped galvanised steel fixings can be used in combination with a neoprene washer to isolate the fixing anchor from the aluminium.

Fixing anchors are to be installed in one row to each cladding board at maximum centres detailed below, and with one fixing at each end of each cladding board.

All fixing anchors are to be installed in accordance with manufacturer's specifications.

**Fixing into steel stud soffit:**

	<b>Wind Region A</b>	<b>Wind Region B</b>	<b>Wind Region C</b>
<b>Steel stud 0.55BMT</b>	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 1050mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 650mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 450mm centres
<b>Steel stud 0.75BMT</b>	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 1150mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 700mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 450mm centres
<b>Steel stud 1.20BMT</b>	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 1150mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 700mm centres	Buildex <b>M6-11 Hex Head RoofZips</b> Screws at 450mm centres

**Fixing into timber stud soffit:**

	<b>Wind Region A</b>	<b>Wind Region B</b>	<b>Wind Region C</b>
<b>Timber stud Pine F7</b>	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 1150mm centres	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 700mm centres	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 450mm centres
<b>Timber stud Hardwood F17</b>	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 1150mm centres	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 700mm centres	Buildex <b>10-16 Designer Head Zips Full Thread</b> Screws at 450mm centres

- Nominal embedment depth to timber to be 30mm.
- Fixing to be central in timber stud.

**Fixing into concrete soffit:**

	<b>Wind Region A</b>	<b>Wind Region B</b>	<b>Wind Region C</b>
<b>Concrete ≥ Grade N25</b>	Hilti <b>HUS3-P 6</b> Screw Anchors at 1150mm centres	Hilti <b>HUS3-P 6</b> Screw Anchors at 700mm centres	Hilti <b>HUS3-P 6</b> Screw Anchors at 450mm centres

- Nominal embedment depth to be 50mm.
- Minimum thickness of concrete to be 100mm.
- Minimum distance from the concrete edge to be 50mm.

**For Magryn & Associates Pty Ltd**


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Attachments: - Structural Calculations SC20319