

CERTIFICATE – COMPONENT FIXINGS FOR SOFFITS

Project: Standard Certification
Fixings for Cladding Board
Components to 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 Components of 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 components are Bottom Joiners (KWCBJ), Flashing Bases (KWCFB), Top Clips (KWCFTC), Internal/External Female Corners (KWCIEFC), Internal/External Male Corners (KWCIEMC), Window/Door Top Flashings (KWCTF), Top Joiners (KWCTJ) and Cladding Starter Pieces (KWDCST). The cladding boards and components are manufactured from 6060-T5 and 6063-T6 Aluminium alloy.

This certification is for the soffit fixings and the 'Clip-in' connections of the components only; the structural adequacy of the Aluminium cladding boards, Aluminium components and soffit substrates has not been checked by Magryn & Associates.

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 soffit.

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 42m
- Shielding and Topographic Multiplier M_s and M_t taken as 1.0
- Local pressure factor K_l 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 component at maximum centres detailed below, and with one fixing at each end of each component.

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

Fixings for the following Cladding Components are included in this Certification.

- Internal/External Female Corner KWCIEFC
- Internal/External Male Corner KWCIEMC
- Bottom Joiner KWCBJ
- Top Joiner KWCTJ
- Flashing Base KWCFB
- Top Clip KWCFTC
- Cladding Starter Piece KWDCST
- Window/Door Top Flashing KWCTF

Fixing into steel stud soffit:

	Wind Region A	Wind Region B	Wind Region C
Steel stud 0.55BMT	Buildex M6-11 Hex Head RoofZips Screws at 950mm centres	Buildex M6-11 Hex Head RoofZips Screws at 550mm centres	Buildex M6-11 Hex Head RoofZips Screws at 400mm centres
Steel stud 0.75BMT	Buildex M6-11 Hex Head RoofZips Screws at 950mm centres	Buildex M6-11 Hex Head RoofZips Screws at 550mm centres	Buildex M6-11 Hex Head RoofZips Screws at 400mm centres
Steel stud 1.20BMT	Buildex M6-11 Hex Head RoofZips Screws at 950mm centres	Buildex M6-11 Hex Head RoofZips Screws at 550mm centres	Buildex M6-11 Hex Head RoofZips Screws at 400mm centres

Fixing into timber stud soffit:

	Wind Region A	Wind Region B	Wind Region C
Timber stud Pine F7	Buildex 10-16 Designer Head Zips Full Thread Screws at 950mm centres	Buildex 10-16 Designer Head Zips Full Thread Screws at 550mm centres	Buildex 10-16 Designer Head Zips Full Thread Screws at 400mm centres
Timber stud Hardwood F17	Buildex 10-16 Designer Head Zips Full Thread Screws at 950mm centres	Buildex 10-16 Designer Head Zips Full Thread Screws at 550mm centres	Buildex 10-16 Designer Head Zips Full Thread Screws at 400mm centres

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

Fixing into concrete soffit:

	Wind Region A	Wind Region B	Wind Region C
Concrete ≥ Grade N25	Hilti HUS3-P 6 Screw Anchors at 950mm centres	Hilti HUS3-P 6 Screw Anchors at 550mm centres	Hilti HUS3-P 6 Screw Anchors at 400mm 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