CERTIFICATE – KWDC 200 CLADDING BOARD FIXINGS FOR WALLS

Project:	Standard Certification Fixings for KWDC 200 Cladding Board for Walls	Project No: Date: Engineer:	20319 July 2020 P. Nguyen

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 wall 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

The KWDC 200 Knotwood Cladding is an interlocking, aluminium cladding system and is a 200mm wide board. This cladding board is manufactured from 6060-T5 Aluminium alloy.

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

The structural calculations have been undertaken for the 200mm wide cladding board (KWDC 200).

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, concrete and masonry walls.

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 ≤ 20m
- Shielding and Topographic Multiplier M_s and M_t taken as 1.0
- Local pressure factor K_l taken as 2.0

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 wall:

	Wind Region A	**Wind Region B**	**Wind Region C**
Steel stud 0.55BMT	Buildex **M6-11 Hex Head RoofZips** Screws at 2200mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 1400mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 950mm centres
Steel stud 0.75BMT	Buildex **M6-11 Hex Head RoofZips** Screws at 2400mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 1500mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 1000mm centres
Steel stud 1.20BMT	Buildex **M6-11 Hex Head RoofZips** Screws at 2400mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 1500mm centres	Buildex **M6-11 Hex Head RoofZips** Screws at 1000mm centres

Fixing into timber stud wall:

	Wind Region A	**Wind Region B**	**Wind Region C**
Timber stud Pine F7	Buildex **10-16 Designer Head Zips Full Thread** Screws at 2400mm centres	Buildex **10-16 Designer Head Zips Full Thread** Screws at 1500mm centres	Buildex **10-16 Designer Head Zips Full Thread** Screws at 1000mm centres
Timber stud Hardwood F17	Buildex **10-16 Designer Head Zips Full Thread** Screws at 2400mm centres	Buildex **10-16 Designer Head Zips Full Thread** Screws at 1500mm centres	Buildex **10-16 Designer Head Zips Full Thread** Screws at 1000mm centres

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

Fixing into concrete wall:

	Wind Region A	**Wind Region B**	**Wind Region C**
Concrete ≥ Grade N25	Hilti **HUS3-P 6** Screw Anchors at 2400mm centres	Hilti **HUS3-P 6** Screw Anchors at 1500mm centres	Hilti **HUS3-P 6** Screw Anchors at 1000mm centres

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

Fixing into masonry wall:

	Wind Region A	**Wind Region B**	**Wind Region C**
Solid clay brick	Hilti **HRD 10** Frame Anchors at 1500mm centres	Hilti **HRD 10** Frame Anchors at 950mm centres	Hilti **HRD 10** Frame Anchors at 650mm centres
Perforated clay brick	Hilti **HRD 10** Frame Anchors at 1100mm centres	Hilti **HRD 10** Frame Anchors at 700mm centres	Hilti **HRD 10** Frame Anchors at 450mm centres
Hollow concrete block	Hilti **HRD 10** Frame Anchors at 900mm centres	Hilti **HRD 10** Frame Anchors at 550mm centres	Hilti **HRD 10** Frame Anchors at 350mm centres

- Nominal embedment depth to be 50mm.
- Minimum edge distances to be 100mm from the masonry wall edge, 40mm from vertical masonry mortar joints, and 20mm from horizontal masonry mortar joints.

For Magryn & Associates Pty Ltd

Peter Nguyen
P. Eng.

Attachments: - Structural Calculations SC20319