INSTALLATION MANUAL

ALUMATE SCREENING & LINEAR CEILING SYSTEMS 2024

IMPORTANT: All ALUMATE products must be installed in strict compliance with ALUMATE's installation manual, which can be downloaded from https://alumate.com.au/

Failure to comply with these documents may void warranty and result in an unsatisfactory outcome.

ALUMADE Australia Pty, Ltd
U15, 26-32 Pirrama Rd, Pyrmont NSW 2009

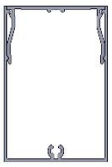
ALUMATE® ARCHITECTURAL PRODUCT

BEFORE THE INSTALLATION

Please note that:

It is the purchaser's responsibility to inspect the colour, finish, size and quality of the product prior to installation. And to identify whether the product has any defect or manufacturing fault, and to ensure the product meets the surface appearance and product specification requirements. Subject to the ALUMATE warranty, claims must be made within 7 days of the claimant becoming aware of a suspected or likely defect in the product. ALUMATE is not liable for claims made after the installation of the product that relate to surface appearance.

TABLE OF ALUMATE LINEAR CEILING PROFILES

SECTION						
CODE	ALCL05025	ALCL05050	ALCL06030	ALCL07550	ALCL08032	ALCL08050
COVERAGE (mm)	50	50	30	50	32	50
MAXI. SPAN CTRs	600mm	900mm	1000mm	1200mm	1000mm	1300mm

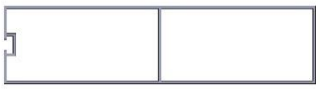
SECTION					
CODE	ALCL10050	ALCL10025	ALCL15032	ALCL07525	ALCL20050
COVERAGE (mm)	50	100	32	25	50
MAXI. SPAN CTRs	1500mm	600mm	2000	1000mm	2250mm

TABLE OF ALUMATE SCREENING SYSTEM

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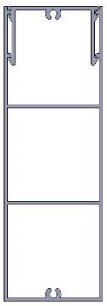
ALUMATE® ARCHITECTURAL PRODUCT

SECTION				
CODE	ALBX05050	ALBX10050	ALBX15050	ALBX20050
COVERAGE (mm)	50x50	100x50	150x50	200x50
MAXI. SPAN CTRs	900mm	1200mm	1500mm	2000mm

SECTION					
CODE	ALBXF05050	ALBXF10050	ALS05050	ALS10050	ALS15050
COVERAGE (mm)	50x50	100x50	50	50	50
MAXI. SPAN CTRs	1000mm	1600mm	900mm	1200mm	1500mm

SECTION					
CODE	ALBXF03025				
COVERAGE (mm)	25				
MAXI. SPAN CTRs	600mm				

***Note:**
The Maximum Span provided in the tables above is recommended for ceiling & wall batten screening systems. The span may vary depending on the method of fixation and the structure of supporting members.
For exteriors applications, site specific engineering loads, such as wind load, have not been considered. Minimum imposed action for barriers has been considered as C3. We recommend consulting your structural engineer for confirmation. If you need any information regarding the properties of any ALUMATE profiles, please do not hesitate to contact us.

INSTALLATION TIPS AND REQUIREMENTS

ALUMATE screening & ceiling can be worked with ordinary metal working tools as:

- Crosscut Mitre Saw
- Carpenters Square
- Level
- Cordless Drill
- Tape Measure

Site storage & Product handling

ALUMATE screening and ceiling products should not be stored in an open area, it is a finished product. Additional pressure should be avoided when storing ALUMATE battens on site. Do not dump or drop when loading or unloading. Always handle with care.

ALUMATE screening and ceiling products will be well packed when delivered to customers, and protective covers should not be removed until installation. Please refer to the above ALUMATE screening and ceiling profiles table for the maximum fixing and supporting framework span.

When removing ALUMATE screening and ceiling products from the pack, do not slide the boards against each other, lift the boards and set them down carefully.

When handling ALUMATE screening and ceiling products take care to avoid scratches, nicks and other damage to the boards.

To ensure long-term performance, we recommend that a professional trade person carry out the installation. The Installation MUST be carried out in accordance with ALUMATE Installation Manual, including the use of all trims and accessories.

Thermal Expansion of Aluminium Alloy

Thermal expansion of aluminium extrusions refers to the increase in their dimensions as the temperature rises. Aluminium like all materials, expands when heated and contracts when cooled. Movements due to temperature may vary by up to 1mm per meter.

The expansion of aluminium alloy is dependent on the material length and change in temperature. In other words, the thermal expansion increases with both the length of the material and the temperature change.

PLEASE BEAR IN MIND THAT

NOTE:

Installation of ALUMATE products must comply with the following Australian Standards:

- AS/NZS 1170.1:2002 – Structural Design Actions, Part 1: Permanent, Imposed and other Actions
- AS/NZS 1170.2:2002 – Structural Design Actions, Part 2: Wind Actions
- AS 1562.1:2018 Design and Installation of Sheet Roof and Wall Cladding – Metal
- AS 1720.1:2010 – Timber Structures – Design Methods (if used in conjunction with timber)
- AS/NZS 1684.2:2010 – Residential Timber-framed Construction
- AS/NZS 4600:2005 Cold-formed Steel Structures
- National Construction Code (NCC)

Framing Requirements for Screening

ALUMATE screening and ceiling products usually are fixed onto galvanized steel framing. Please refer to the corresponding Australian Standard mentioned above for each type of framing work.

Timber Framing

ALUMATE screening and ceiling products can be installed onto timber framing with compliances of the following specifications:

- Timber must be minimum 70mm thick with a face width of no less than 45mm
- Timber types must be suitable for construction and structural uses.
- Span of the framing work is specified in the ALUMATE profile table for screening and ceiling.
- Framing must be located expressly at the start and finish run to enable the first and last screws and the screw should be located at a minimum of 25mm from the end of edge.

Steel Top Hat Framing

Top hats must have a face width of no less than 50mm and a wall thickness of no less than 1.15mm.

Total depth of top hat plus packing and any non-compressible thermal break tape must be minimum 35mm for walls and 15mm for soffits.

Span of the framing work is specified in the ALUMATE profile table for screening and ceiling.

Top hats must be located expressly at the start and finish run to enable the first and last screws and the screw should be located at minimum of 25mm in from end of battens.

Top hats must be fixed to structure at the required centres as per the table below

and must always be fixed through both legs at all fixing points.

MAXIMUM STEEL TOP HAT FIXING SPAN

STEEL TOP HAT		MAXIMUM FIXING SPAN
	15 X 50mm	500mm
	24 X 50mm	700mm
	35 X 50mm	800mm
	50 X 50mm	950mm

* Above fixing spans are to be used as a guide

Thermal Break

When fixing a metal top hat to metal stud framing, hard plastic packers with a minimum thickness of 10mm must be used between stud frame and top hat to provide a thermal break for heat transfer.

General Framing Notes for Ceiling

Steel framing for ceilings in Australia must comply with several standards and requirements to ensure safety, durability, and performance.

1. National Construction Code (NCC) /Building Code of Australia (BCA), which provides the minimum necessary standards for safety, health, amenity, and sustainability in the design and construction of buildings.
2. Australian Standards: Several specific standards apply to steel framing, including:
    - AS 410: Structures
    - AS/NZS 4600: Cold-formed Steel Structures
    - AS.NZS 1170: Structural Design Actions
    - AS 1397: Steel sheet and strip – Hot-dipped Zinc-Coated or Aluminium /Zinc-coated

Material Requirements

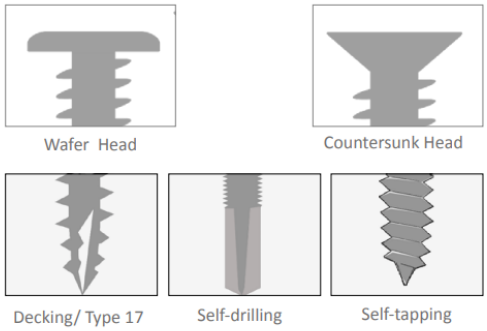
1. Steel Grade and coating: the steel used should be of the appropriate grade and should have a suitable protective coating to prevent corrosion. Complied with AS 1397 for coating requirements.
2. Durability: Select materials that can withstand the environmental conditions they will be exposed to. This includes considerations for corrosion resistance, especially in coastal or industrial areas.

Expansion Joints

Never span battens across expansion joints in structure. If necessary, terminate the battens on either side of any expansion joint to prevent damage to the screening or ceiling systems.

Screws

ALUMATE recommends that for any screws is in direct contact with ALUMATE screening or ceiling battens to be STAINLESS STEEL. Please see the figure below for different screw types:



- Decking/ Type 17 is to be used with timber framing.
- Self-drilling and self-tapping are to be used with steel framing.

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DESIGN CONSIDERATION

ALUMATE products must be installed after framing work is properly installed. Framing is essential for any screening system; the reasons are as follows:

- Structural Support: Framing provides the necessary structural support for the screening or ceiling battens. Aluminium battens, while lightweight, need a sturdy framework to ensure that they stay securely in place, especially in adverse weather conditions like high winds or heavy rain.
- Alignment and Flatness: A properly constructed frame ensures that the battens are aligned correctly, and that the façade is flat and even. This is crucial for both the aesthetic appearance and the functional performance of the screening or ceiling systems.
- Thermal Expansion and Contraction: Aluminium, like many metals, expands and contracts with temperature changes. A well-designed system accommodates these movements, preventing buckling, warping, or detachment of the battens.
- Load Distribution: The frame helps distribute the weight and any external loads (such as wind or impact forces) across the structure evenly. This prevents localized stress points that could damage the battens or the building structure.
- Ease of Installation and Maintenance: A proper frame makes it easier to install the battens precisely and efficiently. It also allows for easier removal and replacement of battens for maintenance or repair purposes.

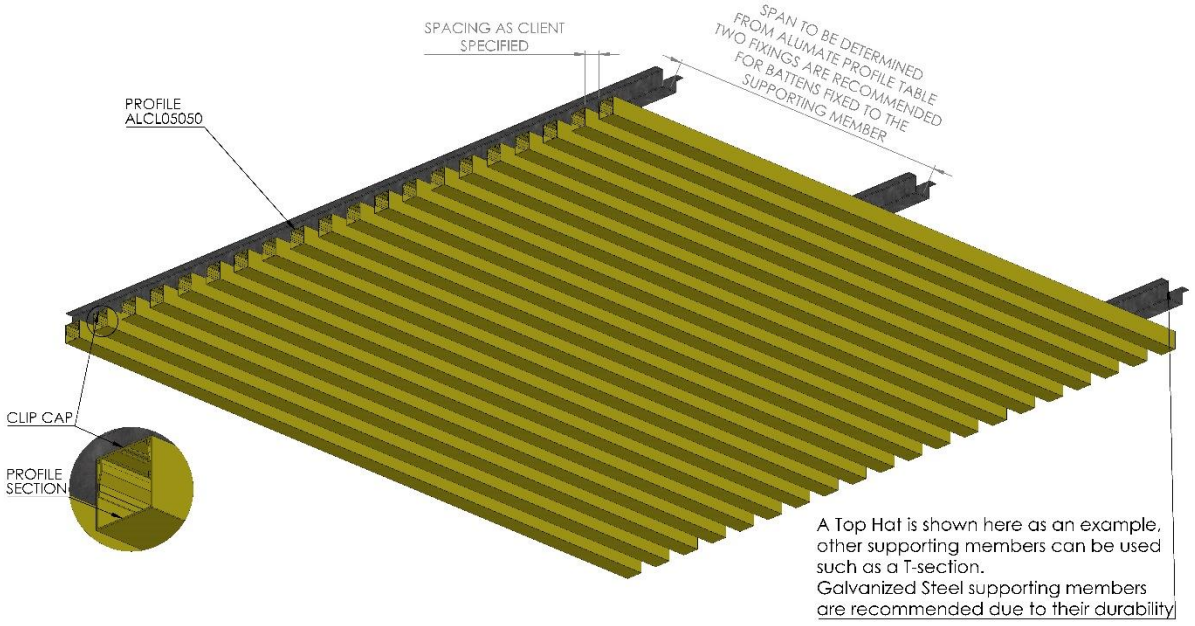
Design and Structural Requirements for ceiling & screening

1. Load bearing:
    - The ceiling framing must be designed to support the loads it will carry, including the weight of the ceiling materials, any fixtures, and dynamic loads such as wind.
    - Comply with AS/NZS 1170 for determining these loads.
2. Span and Spacing:
    - The spans and spacing of steel members should be designed based on load requirements and should comply with ALUMATE's recommendations and relevant standards.
3. Connections:
    - Connections between steel framing members should be designed and constructed to transfer loads effectively and maintain the structural integrity of the ceiling.
    - Use appropriate fasteners and ensure they are installed correctly.

INSTALLATION PROCEDURES

ALUMATE LINEAR CLIP-ON CEILING SYSTEM

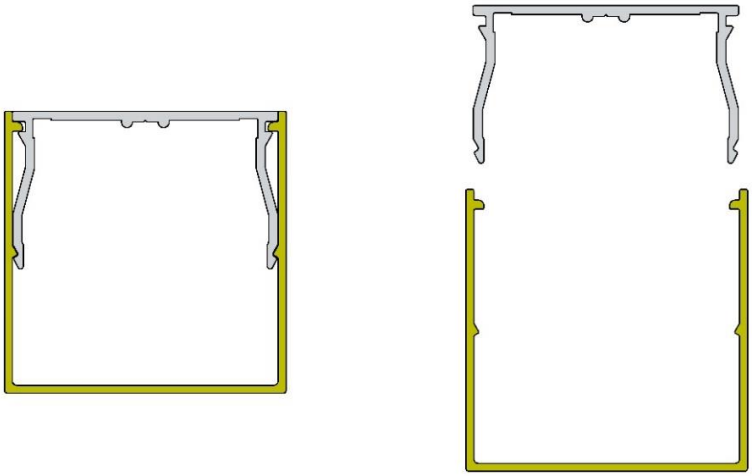
The systems are designed to be economical, flexible, and easy to install. Linear ceiling systems are both practical and beautiful, with a clean, fixing free appearance. Battens of varying dimensions are provided in the ALUMATE PROFILE TABLE, and they can be used together on one system to create unique effects. The gaps between the battens create a sense of space above the ceiling, bringing a unique and contemporary look.



1. Preparation
    - Use a measuring tape to determine the dimension of the area where the battens will be installed.
2. Plan and Layout
    - Determine the span for the ceiling system and framing according to the span, this is depending on the ceiling materials and load requirements. The ALUMATE PROFILE TABLE can be used as a reference.
    - Mark the ceiling height and locations for the battens, this will serve as a guide for installation.
3. Installing the Battens
    - Use a laser to determine the location for the first batten. ALUMATE LINEAR CEILING SYSTEM is a clip-on system, therefore, the clip caps are to be installed first. (Note: two screws are recommended at each fixing point for profiles with dimensions greater than 50mm.)

- Once the location is determined, fix the clip cap onto the ceiling joist and check the level. Then use a mould matching the spacing required to determine the location for the next batten.
- Continue installing the remaining batten clip caps following the same procedure:
    - Position the clip cap
    - Check for level
    - Secure the clip cap to the ceiling joist
    - Ensure consistent spacing between battens

4. Finishing Up



CLIP-ON PROFILE SECTION DETAIL

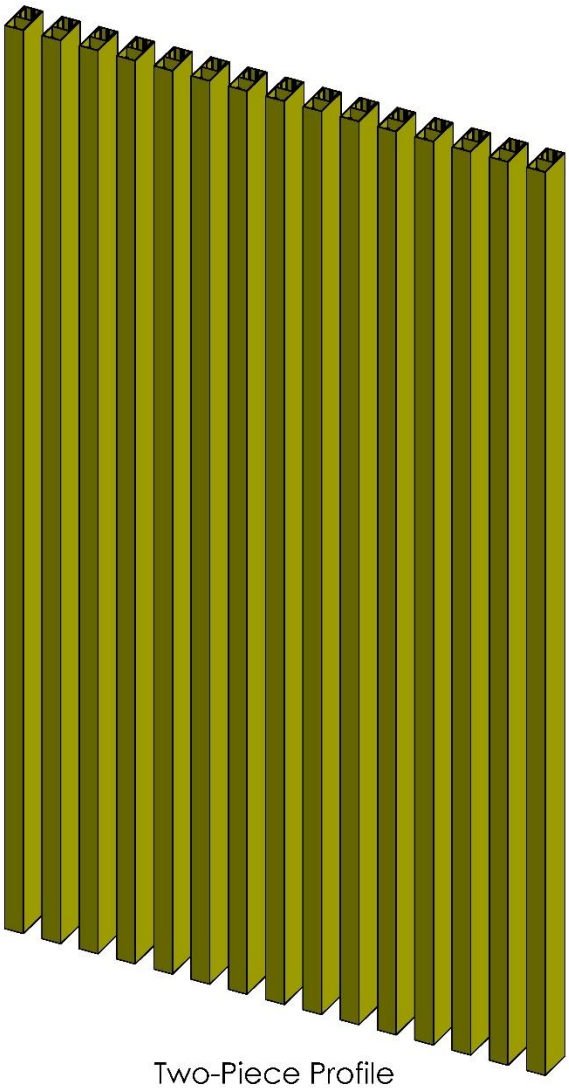
- Double check alignment and level:
    - After all battens are installed, double-check their alignment and level.
    - Make any necessary adjustments to ensure all battens are perfectly aligned and level.
- Inspect Fixings:
    - Inspect all screws and fixings to ensure they are secured.
    - Add additional fasteners if any batten feels loose,

Tips:

- Safety First: Always wear appropriate safety gear, including goggles, gloves, and a dust mask, especially when cutting wood and drilling.
- Consistent Spacing: Use a measuring tape or a spacer block to maintain consistent spacing between battens.
- Secure Fixing: Make sure each batten is securely fixed to the ceiling joists to prevent sagging or movement over time.

ALUMATE SCREENING INSTALLATION PROCEDURE

Two-Piece Profile Clip-on System:



Two-Piece Profile
Clip-On System

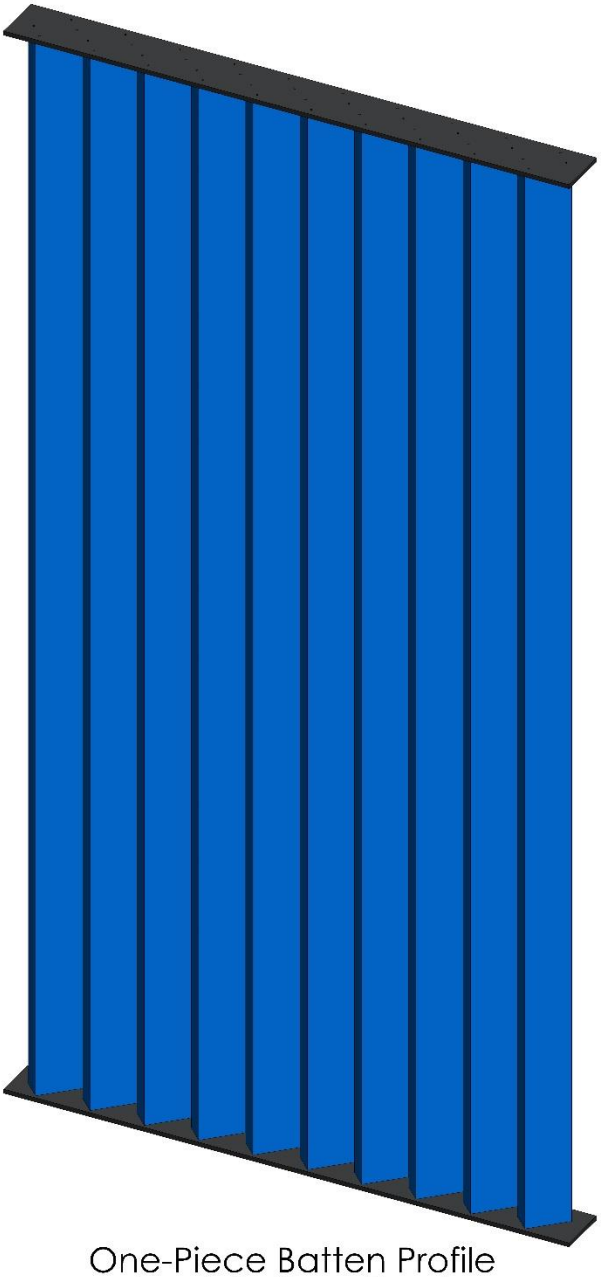
The procedures for two-piece clip-on system are similar to the installation of ALUMATE Linear Ceiling system.

1. Preparation
   Determine the area
2. Plan and Layout
   Determine the span and prepare the framework according to it (Span of each profile provided in the table of ALUMATE profiles)
3. Installing the screenings
4. Finish Up

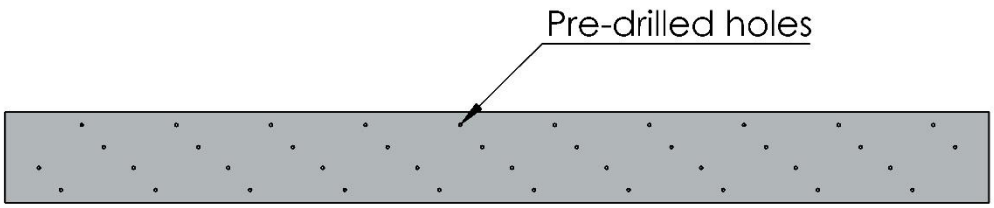
One Piece Batten Profiles with Screw Flute

ALUMATE one-piece batten profiles have a wide range of application due to their versatility, strength, and lightweight properties. They can also be used as louvres depending on the construction site conditions and how it will be fixed.

1. **Top & Bottom Fixed:**

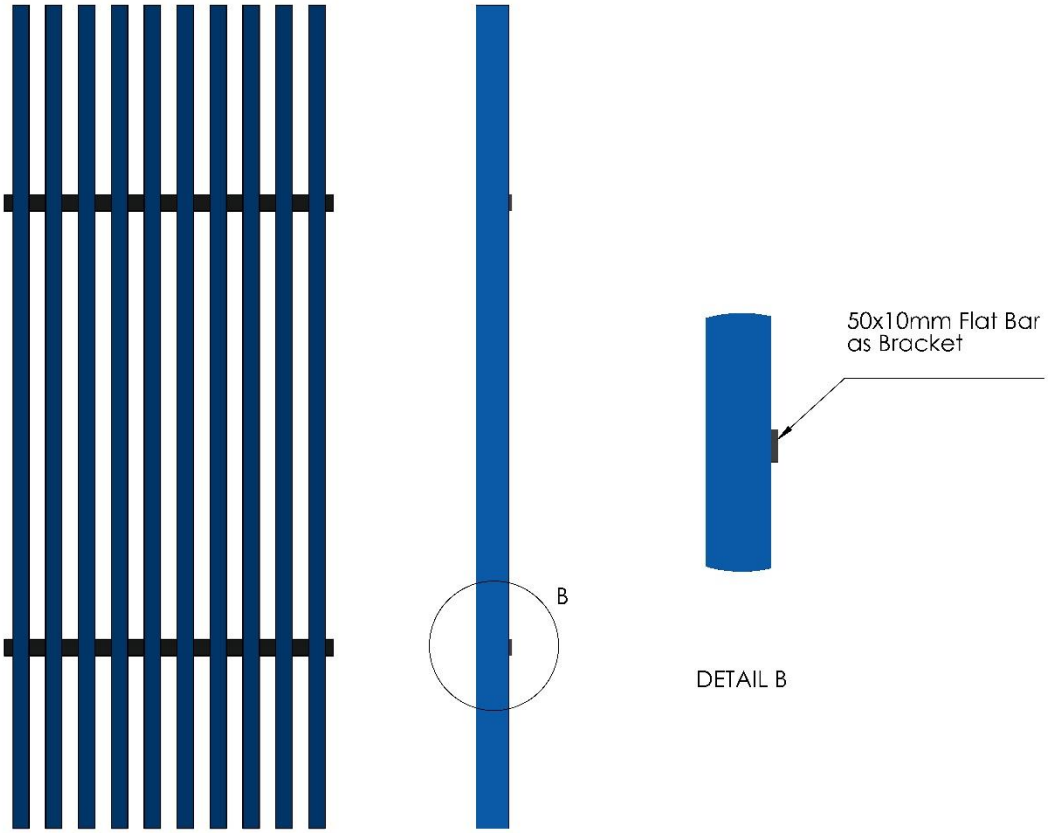


One-Piece Batten Profile
Top & Bottom Fixed



One-piece profiles are mechanical fixed to the top & bottom plate by self-tapping screws. Holes on the top & bottom plate are pre-drilled to match the desired angles.

2. **Side fixed to the wall:**



FOR MORE INFORMATION, PLEASE VISIT ALUMATE AT
https://alumate.com.au
OR CALL 1300 787 717

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