



# ALUMICLAD SPECIFICATION

The aluminium composite panels shall be ALUMICLAD, as supplied by Alumiclad Pty. Ltd.

## ALUMICLAD

The cladding shall be 4mm thick Alumiclad aluminium composite panels comprising of a polyethylene (PE) sandwiched between two skins of aluminium alloy 3003 H112 produced in a continuous process.

### 1. Design

- (a) Alumiclad aluminium composite panel cladding shall be designed to meet or exceed specified performances for the prevailing local weather conditions.
- (b) The design shall take into account the wind loading ( $\text{___ N/m}^2$ ) so that no cladding element will sustain permanent deformation or failure under a load 1.5 times the design wind pressure specified.
- (c) The cladding system shall be so designed so that deflection does not exceed 1/150 of the clear span.
- (d) The cladding system shall be so designed, fabricated and erected as to provide for expansion and contraction and take into account temperature change and variation in climatic conditions.

### 2. Characteristics

	Alumiclad PE 4mm
Aluminium skin	0.5 mm thick
Panel weight	5.5 kg/m <sup>2</sup>
Standard panel size	1220mm x 2440mm
Length availability	Up to 5800mm

### 3. Properties

	Alumiclad PE 4mm
Bending strength	100 Mpa
Bending elasticity	2.8 x 10 <sup>4</sup> Mpa
Temperature resistance	105 °C
Penetrating resistance	9.0 kN
Shear strength	28 Mpa
Thermal expansion	2.01 x 10 <sup>-5</sup> °C

#### 4. Tolerances

	Alumiclad
Width	+/- 3mm
Length	+/- 3mm
Thickness	+/- 0.2mm
Panel bow	Max 0.8%
Flatness	Max 0.2%

#### 5. Finish

- (a) The visible surface sheet of the composite panel shall be factory pre-finished by the manufacturer via a continuous coil coating process with a PVDF Kynar 500 minimum 70% resin fluorocarbon coating.
- (b) Total dry film surface shall be a minimum 25um, consisting of chromate coating, inhibitive primer and a topcoat.
- (c) The finished surface shall be factory protected with a self-adhesive, UV stabilised, PE peel-off film.
- (d) The reverse side non-visible surface sheet shall be finished with a polyester based coating for additional protection in corrosive environments.

#### 6. Acoustic Properties

- (a) The panel shall achieve minimum properties as per Sound Transmission Class STC 26
- (b) The panel shall achieve minimum properties as per Outdoor Indoor Transmission Class OITC 20

#### 7. Fire Behaviour

- (a) The panel shall conform to Australian Standards according to AS1530 Part 3 for external applications
- (b) The panel shall conform to Australian Standards according to AS3837 for internal applications

#### 8. Bond and Delamination strength

- (a) The 180<sup>0</sup> peel test for strength of bond shall exceed 7 N/mm (GB/T 17748 - ASTM D903)

#### 9. Fabrication

- (a) Prior to fabrication, the Alumiclad panels shall be stored horizontally on a dry, flat, level surface and protected from any potential damage.
- (b) Fabrication techniques as recommended by Alumiclad Pty Ltd shall be strictly adhered to. These include cutting, grooving, folding, bending and rolling.
- (c) All cladding panels shall be factory fabricated and assembled by a fabricator with minimum 3 years experience.

- (d) All panels shall be cut and routed using equipment and tools recommended by Alumiclad. After folding into cassettes, an extruded aluminium profile shall be fixed to the minimum 25mm deep return bend using  $\varnothing$  5mm blind rivets. Rivets should be positioned at least 15mm from the edge of the Alumiclad panel and the distance between rivets shall not exceed 500mm. Rivets shall be aluminium alloy/stainless steel.
- (e) Where reinforcement of the panel is required, an extruded aluminium profile of suitable cross-section and strength shall be bonded to the reverse side of the panel using double sided adhesive tape (such as 3M VHB4991). Application of bonding systems shall be in strict conformity with the manufacturer's specification and recommendations. The ends of the stiffener are to be mechanically joined to the panel sub-frame.
- (f) Each panel shall be marked on the reverse side for easy identification of size and location.
- (g) The factory applied protective peel-off film shall only be removed after all the panels have been installed and no other surrounding work is to be carried out which may damage the panels.

## 10. Installation

- (a) An approved installer shall carry out the installation. The installer is to have a minimum 3 years experience.
- (b) A typical panel shall be fitted with extruded aluminium angle brackets or specifically designed extrusion profiles. The brackets shall be positioned in such a manner so that the brackets attached to adjacent panels overlap.
- (c) Fastening of panels shall take place and be concealed within the panel joints through the overlapping angle brackets into furring channels behind.
- (d) Allowance is to be made for a 10mm minimum joint between panels. All fixing and joint details shall be designed to provide for the expected thermal and structural movements.
- (e) To conceal fixings and form a watertight seal, seal construction joint with a suitable silicone or polyurethane sealant over a foam backing rod. Sealant applied to be of a type in accordance with sealant manufacturer's recommendations.
- (f) All fixing anchors, brackets and similar attachments shall be of aluminium, non-magnetic stainless steel, zinc coated steel, or hot dip zinc galvanised steel. Where two surfaces of dissimilar metal come into contact, such surfaces shall be insulated with a layer of PVC or Polyethylene tape.

## 11. Warranty

The Manufacturer's Warranty shall be for 10 years (both panel and paint), including the full costs of replacement by the manufacturer if a warranty problem is to occur. Further detail is provided in the terms and conditions of sale