ACP A2 Core

Fabrication & Installation Manual

FIRE CLASS	A2-s1,d0 | EN 13501-1
COATING	PVDF | AAMA 2605
WEIGHT	8.2 KG/M²

SECTION 1

Product Overview

The ALUCOSUN ACP A2 Core is a non-combustible core aluminium composite panel achieving A2-s1,d0 classification to EN 13501-1. It resolves the specification challenge of achieving composite panel fabrication and architectural surface quality while meeting A2 fire performance requirements.

Through a non-combustible inorganic mineral core compound, ACP A2 limits heat release, smoke production, and droplet formation while retaining the slim 4 mm profile and PVDF coating depth of the ALUCOSUN composite panel range.

ACP A2 CORE CROSS-SECTION WITH DENSE NON-COMBUSTIBLE INORGANIC MINERAL CORE.

A2-s1,d0	4 mm	7.0-8.0
EN 13501-1 FIRE CLASS	STANDARD PANEL THICKNESS	KG/M² PANEL WEIGHT

Fire Classification	A2-s1,d0 · EN 13501-1
Core Type	Non-combustible inorganic mineral compound
Panel Thickness	4 mm standard
Skin Thickness	0.3 / 0.4 / 0.5 mm
Panel Weight	7.0-8.0 kg/m² depending on core density

SECTION 2

Storage & Handling

ACP A2 Core has a denser and heavier mineral core than standard FR Core B1 panels. Storage and handling procedures are similar to standard ACP, but the increased panel weight requires additional attention to lifting and support equipment.

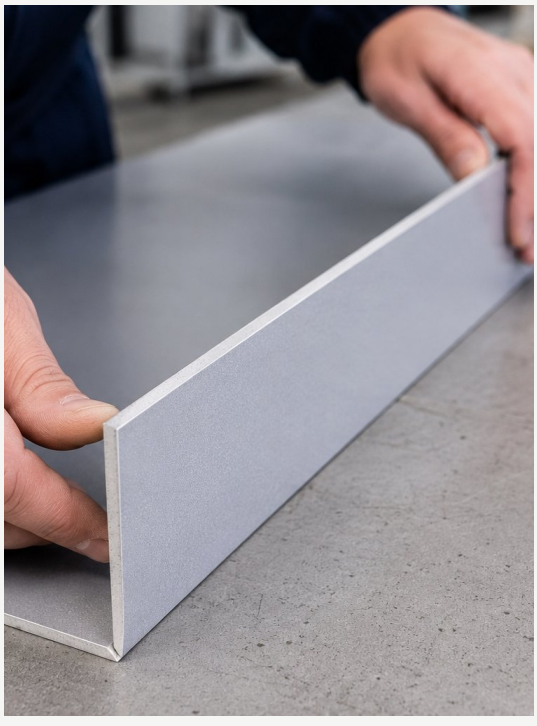
2.1 Receiving & Inspection

- Inspect all panels for transit damage before signing delivery documentation.
- Verify panel dimensions, quantity, and finish code against the project packing list.
- Report surface damage, coating defects, or dimensional discrepancies within 48 hours.
- Do not remove protective film until panels are ready for fabrication or installation.

2.2 Storage Requirements

- Store panels horizontally on a flat, level surface with full-length support.
- Stack face-to-face or back-to-back only. Maximum stack: 15 panels with interleaving.
- Store undercover, away from direct UV, standing water, and chemical exposure.
- Maximum storage temperature: 50°C. Do not store in direct sun in hot climates.

CAUTION **ACP A2 Core panels weigh 27-32% more than equivalent FR Core B1 panels. Vacuum suction cup lifters must be rated for the increased panel weight.**



2.3 On-Site Handling

- Use vacuum suction cups or soft-face clamps for panels exceeding 2 m².
- Verify suction cup rating against A2 panel weight.
- Wear clean cotton or nitrile gloves when handling coated surfaces.
- Carry large panels on edge with minimum two operatives.
- Protect panel corners and edges; denser mineral core makes corner chips more likely.

SECTION 3

Fabrication

ACP A2 Core uses the same V-groove routing and hand-folding fabrication method as standard ACP products. The key difference is the denser inorganic mineral core, which requires sharper tooling, slower feed rates, and more frequent tool inspection.

3.1 Cutting Parameters

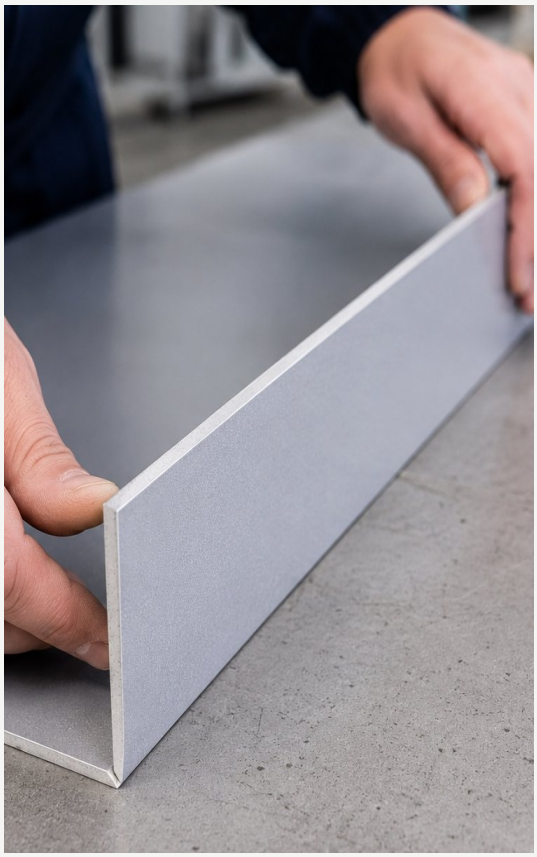
Blade / Tool Type	Carbide-tipped aluminium-rated; PCD recommended for high-volume A2 cutting
Circular Saw Speed	2,500-4,000 RPM
CNC Router Speed	18,000-22,000 RPM
Feed Rate	1.5-3.5 m/min; reduce by 20-25% vs FR Core B1
Backing Board	Required; 9 mm MDF minimum
Tool Inspection	Inspect blade/bit every 50 linear metres

CAUTION **The non-combustible inorganic mineral core generates significant fine dust during cutting. Operators must wear N95 or equivalent respiratory protection.**

SECTION 3.3

V-Groove Routing & Folding

V-groove routing followed by hand folding is the correct and only approved method for forming return edges on ACP A2 Core panels. Press-brake bending must never be used because the composite construction will delaminate under press-brake pressure.



01

Verify groove depth with gauge. Front skin remaining: 0.3-0.5 mm.

02

Vacuum all mineral dust from the groove and blow out with compressed air.

03

Place panel face-down on clean flat work surface with full support.

04

Apply firm, even hand pressure along the full fold line simultaneously.

05

Fold to 90 degrees in a single smooth motion. Do not over-bend.

06

Seal exposed mineral core edges and inspect front face for cracking.

TECHNICAL NOTE **ACP A2 Core has a denser, less flexible mineral core than FR Core B1. Fold in a single smooth motion along the full fold line.**

SECTION 4

Installation

ACP A2 Core is installed on engineered aluminium or galvanised steel subframes using rivet, screw, cassette, or concealed clip systems. It is heavier than FR Core B1, so dead load, clip pull-out resistance, and fixing shear capacity must be verified.

4.1 Subframe Requirements

- Use AA6063-T5 aluminium alloy or hot-dip galvanised steel subframe sections.
- Maximum subframe span: 600 mm c/c for standard wind loads.
- Reduce to 500 mm c/c in high-wind or cyclone zones.
- Minimum ventilated cavity: 25 mm between panel back face and wall substrate.

4.3 Joint Design

- Minimum open joint width: 8 mm between panels.
- Increase to 10 mm for panels longer than 2,500 mm.
- Thermal expansion coefficient: 23.5 x 10^-6 per degree C.
- For shadow-gap installation, maintain minimum 20 mm recess depth.

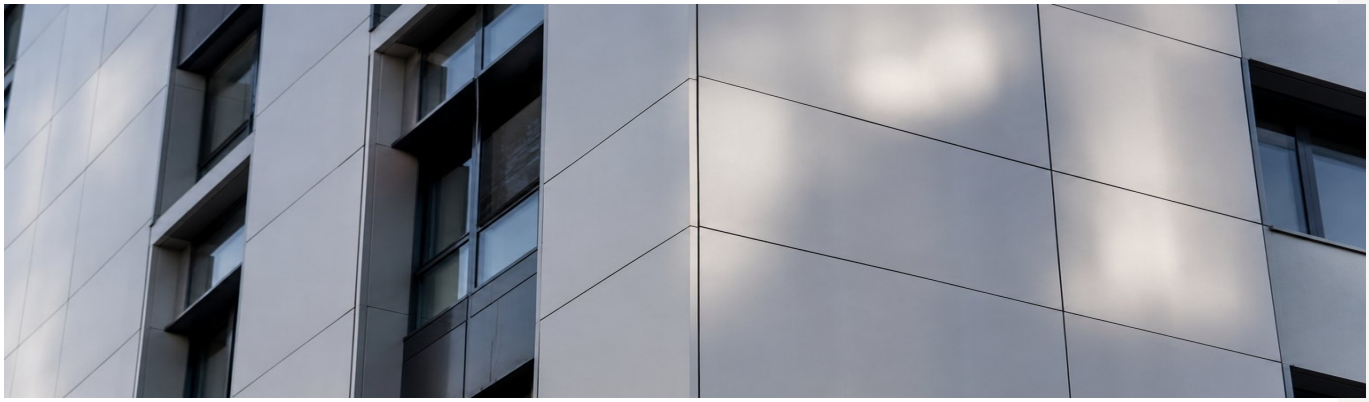
4.2 Fixing Methods

Method	Technical Direction
Rivet / Screw Fixing	Fastener type, size, pilot hole diameter and torque shall follow approved shop drawings and fixing system supplier recommendations.
Cassette System	V-groove routed and hand-folded cassette profile for A2-compliant cladding.
Concealed Clip	Available for shadow-gap installations; consult ALUCOSUN Technical.

CAUTION **ACP A2 Core is heavier than FR Core B1. Verify cassette clip pull-out resistance and rivet/screw shear capacity for increased panel weight plus wind load.**

SECTIONS 5-6

Maintenance & Warranty



5.1 Maintenance Schedule

Frequency	Maintenance Action
Every 6 Months	Visual inspection of panel surface, fixings, sealant joints, and drainage channels.
Annually	Full clean with approved mild detergent and water. Inspect and re-apply sealant where required.
Every 5 Years	Professional inspection of subframe anchor points. Full sealant replacement recommended.
As Required	Immediate removal of fouling, industrial fallout, and graffiti.

TECHNICAL NOTE **Up to 30 years based on AAMA 2605-certified PVDF fluorocarbon coating systems. Warranty period subject to coating specification, project location, maintenance programme, and warranty registration. Contact ALUCOSUN for project-specific warranty terms.**

Warranty & Technical Support

PVDF Coating	Project-specific warranty terms upon request
Panel Structure	Project-specific terms under normal facade use
Fire Classification	Permanent A2-s1,d0 mineral core property
Technical	spec@alucosun.com
Warranty Claims	warranty@alucosun.com
Website	www.alucosun.com