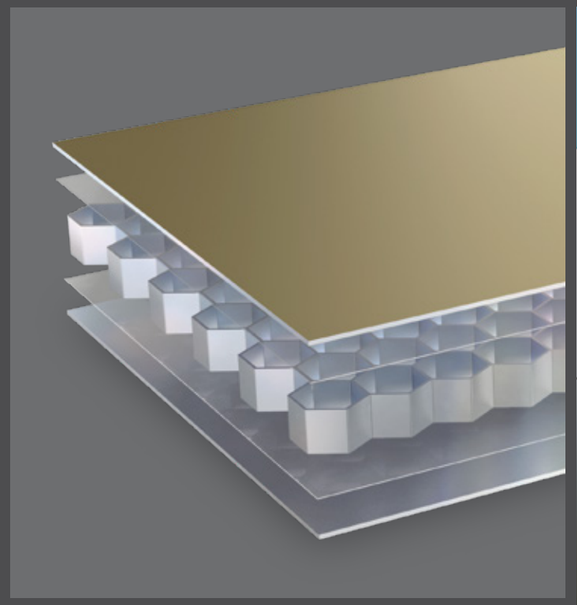
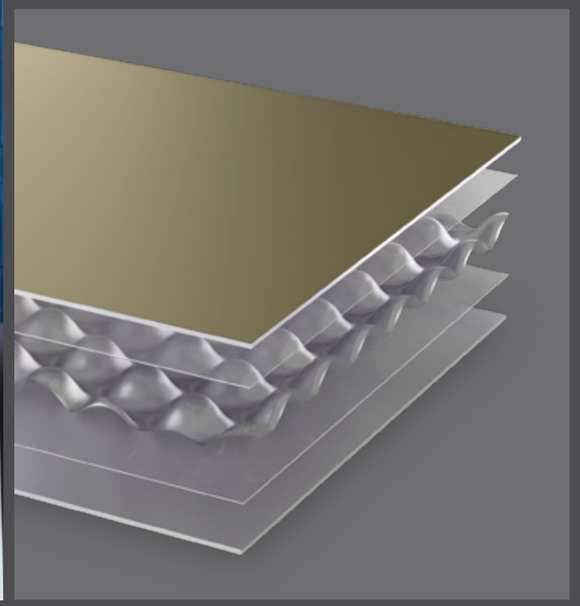
ALUCORE®

ALUMINIUM CORE PANELS

Lightness meets rigidity





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3A COMPOSITES

MAR2024IND.

ESPACE CULTUREL JACOBIN - LE MANS, FRANCE
ARCHITECT: BABIN + RENAUD

WHY USE ALUCORE®

ALUCORE® cladding material offers numerous advantages over commonly used cladding materials like metal (aluminium, steel, zinc, copper) as well as non-metal options like stone, tiles and HPL (High-Pressure Laminate), particularly in applications that demand superior performance and functionality. Here are some of the key advantages:

- Withstanding high wind load pressures
- Larger panel sizes with minimal or no support structure
- Absolute flatness
- Carry the load of human traffic (applicable for thicknesses above 15mm)
- Superior sound and heat absorption

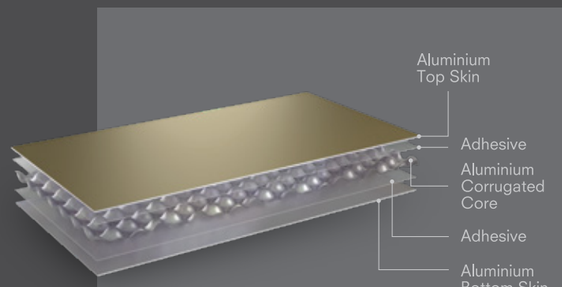
ALUCORE®

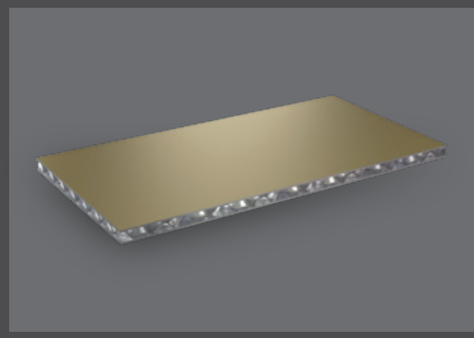
ALUCORE® ACCP

ALUCORE® ACCP, the Aluminium Corrugated Core Panel is a light weight cladding material with a corrugated aluminium core sandwiched between two aluminium skins making it highly rigid. Devoid of any thermoplatstic core, it is perfectly suitable for projects with stringent fire regulations. ALUCORE® ACCP offers unmatched flatness enhancing the beauty of buildings. The panels are easily formable using common processing methods giving architects flexibility to execute complex designs.

PRODUCT RANGE:

Panel Thickness: 4mm and 6mm
Width: 1250mm, 1500mm
Length: ≤6000mm





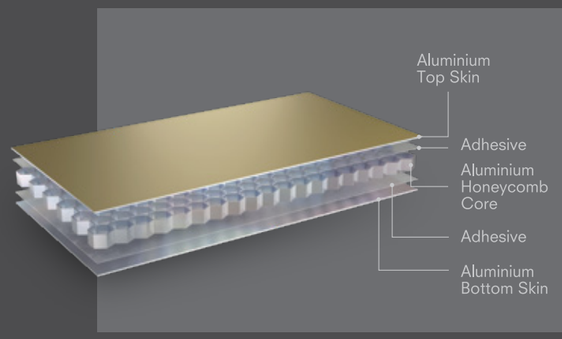
ALUCORE® HONEYCOMB

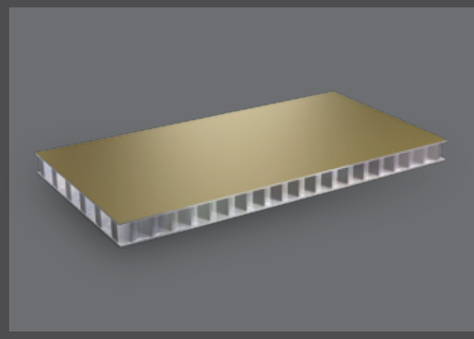
ALUCORE® honeycomb is a unique panel with a honeycomb shaped aluminium core embedded between two aluminium skins. The product is a true representation of an advanced sandwich composite. The ultra-low weight of the core and the increased distance between the cover sheets gives it extra rigidity while keeping its weight extremely low. This results into an unmatched strength-to-weight ratio.

ALUCORE® honeycomb therefore, has a definite advantage when it comes to projects with high demands on material stiffness- such as facade cladding or roofing where it is exposed to extremely high wind loads, or for large self-supporting and even walkable roofs.

PRODUCT RANGE:

Panel Thickness: 10mm, 15mm, 20mm, 25mm
(other thickness available upon request)
Width: 1250mm, 1500mm
Length: ≤6000mm





MAX TOWERS - NOIDA I INDIA
ARCHITECT: GENSLER

FEATURES OF ALUCORE®

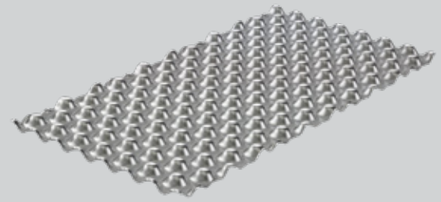
- Unmatched strength-to-weight ratio for applications that demand self supporting roofs/structures
- ALUCORE® boasts higher flexure rigidity compared to other cladding materials setting it apart in terms of performance
- Architects and designers prefer ALUCORE® for its unique mechanical properties, for instance, its high tensile strength helps in easy processing enhancing the aesthetics
- Outstanding color uniformity and surface finish are achieved due to the premium-quality fluorocarbon (PVDF/FEVE) coating system employed by ALUCORE®
- ALUCORE®'s versatility makes it an excellent choice for outdoor applications like facade cladding, soffit, roofing, balconies and shelters, as well as for interior applications like artistic ceilings and wall design
- Easy to fabricate with standard tools, ALUCORE® ensures precise detailing

FEATURES

FEATURES OF ACCP

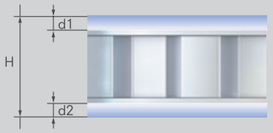
Structure

H: Total thickness (4mm, 6mm)
d1: Thickness of AL front sheet (0.7mm)
d2: Thickness of AL back sheet (0.5mm)

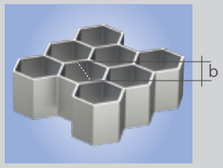


FEATURES OF HONEYCOMB

Structure



H: Total thickness (10mm, 15mm, 20mm, 25mm)
d1: Thickness of AL front sheet (1mm)
d2: Thickness of AL back sheet (0.5/1mm)



Standard core consists of Aluminium Foils (cell size: 10-19mm)

COMPARATIVE FLEXURE RIGIDITY

The graph illustrates the rigidity of different materials while keeping the weight identical.

ALUCORE® shows much higher strength-to-weight ratio compared to other materials. By prioritizing materials with low weight and high rigidity, architects can enhance structural integrity while minimizing the load-bearing requirements, thus contributing to more efficient and sustainable building designs.

This strategic approach not only ensures the structural stability of the facade but also enables architects to explore more innovative and aesthetically pleasing designs without compromising on safety or durability.

REPSOL HEADQUARTERS - MADRID I SPAIN

ARCHITECT: Rafael de La-Hoz Arquitectos

ADVANTAGES OF ALUCORE®

- Low weight, high rigidity and flawless flatness, making it suitable for a wide range of applications, including soffit and suspended ceilings
- Withstands heavy wind load pressure
- Human weight-bearing capacity for cleaning and maintenance (applicable for thicknesses above 15mm)
- Provides freedom of design to architects and designers owing to its high formability
- Different panel thicknesses to suit all kinds of applications
- Thermal insulation helps cut down heat transmission in the building
- Large variety of colors and finishes to choose from
- Simple to process using conventional tools

For more details on ALUCORE®, please visit:

https://alucobond.com.sg/products/alucore/

ART AND CONGRESS HALL LUCERNE - LUZERN I SWITZERLAND

ARCHITECT: JEAN NOUVEL

DAXING (BEIJING) AIRPORT - BEIJING, CHINA
ARCHITECT: Zaha Hadid Architects & ADP Ingenierie

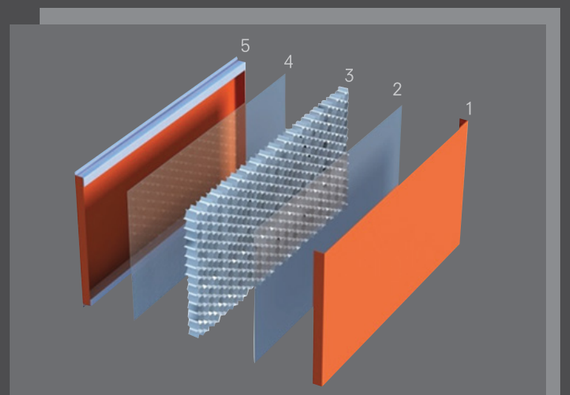
ALUCORE® CLAD

A 'Ready-to-Install Honeycomb Panel System'

ALUCORE® clad is a Value Added Solution from ALUCOBOND® which comprises of aluminium honeycomb panels that are pre-fabricated with Ready-to-Install aluminium extrusions.

It comprises of the following:

1. Pre-coated Aluminium front skin
2. Adhesive
3. Aluminium Honeycomb core
4. Adhesive
5. Pre-coated Aluminium back skin and fixing extrusion



PRODUCT SHOT

FEATURES OF ALUCORE® CLAD

- It merges tailored solutions with top-notch architectural coating and lamination technology
- Ready-to-Install panels offered in various configurations (finishes, coatings, thicknesses) customised to meet specific project needs
- Panel perimeter fixing anchors both panel skins to the supporting structure, enhancing overall installation strength

ALUCORE® clad combines all the exceptional features of ALUCORE® with a high-quality, ready-to-install system for customized building designs

ADVANTAGES OF ALUCORE® CLAD

- Highest quality of materials and processes
- Custom-made and manufactured to meet each client's unique requirements
- Reduction in cost with no wastage and lesser external fixing accessories required
- Saves time with Ready-to-Install panels which are pre-fixed with the right extrusions at the production stage
- Quality Assurance ensures that production is done under supervised and controlled factory environment
- Risk mitigation is done by ensuring the best quality of materials is used and processed in the ALUCOBOND® factory, reducing chances of failure
- No compromise on design aesthetics:
  1. Can be formed as per the design
  2. Provides excellent flatness
  3. Comes in a large variety of finishes/colors

TECHNICAL DATA SHEET

ALUCORE® Aluminium Corrugated Core Panel

PROPERTIES	STANDARDS	UNIT	VALUES
Panel Standard Thickness	Nominal	[mm]	4 / 6
Coated Skin Thickness, Front Side	Nominal	[mm]	0.7
Coated Skin Thickness, Rear Side	Nominal	[mm]	0.5
Weight	Nominal	[kg/m²]	4.45
TECHNICAL PROPERTIES:			
Alloy Of Cover Sheets	ASTM B209-04		3105 / 5005
Temper of Cover Sheets	ASTM B209-04		H24
Modulus of Elasticity	ASTM E8	[N/mm²]	70,000
Tensile Strength of Aluminium	ASTM E8	[N/mm²]	$R_m \geq 125$
0.2% Proof Stress	ASTM E8	[N/mm²]	$R_{p0.2} \geq 90$
Elongation	ASTM E8	[%]	$A_{50} \geq 4$
SURFACE:			
Lacquering			Coil coating FEVE / PVDF
Gloss (Initial Value)	ASTM D523		As per the colour shade
Pencil Hardness	ASTM D3363		HB ~ F
THERMAL PROPERTIES:			
Temperature Range		[°C]	-40 to +80
FIRE PROPERTIES:			
Fire Classification	EN 13501-1		Class A2 - s1, d0
ENVIRONMENT & HEALTH ASPECTS:			
Environment Management System			ISO 14001 : 2015
Occupational Health & Safety Management System			ISO 45001 : 2018
Quality Management System			ISO 9001 : 2015
DIMENSIONAL TOLERANCES:			
Panel Thickness		[mm]	± 0.2mm
Thickness of Coated Skins		[mm]	± 0.05mm
Weight		[kg/m²]	± 5%
Width		[mm]	Upto 1250mm + 2mm
Length		[mm]	< 4000mm + 6mm Above 4000mm + 10mm

Specifications are subject to change without prior notice/intimation.

TECHNICAL DATA SHEET

ALUCORE® Aluminium Honeycomb Core Panel

PROPERTIES	STANDARDS	UNIT	VALUES
Panel Standard Thickness	Nominal	[mm]	10 / 15 / 20 / 25
Coated Skin Thickness, Front Side	Nominal	[mm]	1.0
Coated Skin Thickness, Rear Side	Nominal	[mm]	0.5 (10mm) / 1.0
Weight	Nominal	[kg/m²]	5.0 / 6.7 / 7.0 / 7.3
TECHNICAL PROPERTIES:			
Section Modulus W		[cm³/m]	4.5 / 13.1 / 18.1 / 23.1
Rigidity E · I		[kNcm²/m]	21,900 / 75,500 / 138,900 / 221,600
Alloy of Cover Sheets	ASTM B209-04		3105 / 5005
Temper of Cover Sheets	ASTM B209-04		H24
Modulus of Elasticity	ASTM E8	[N/mm²]	70,000
Tensile Strength of Aluminium	ASTM E8	[N/mm²]	$R_m \geq 125$
0.2% Proof Stress	ASTM E8	[N/mm²]	$R_{p0.2} \geq 90$
Elongation	ASTM E8	[%]	$A_{50} \geq 4$
Linear Thermal Expansion	ASTM D696		2.4mm/m at 100°C temperature difference
CORE:			
Bare Compressive Strength		[N/mm²]	0.4 ~ 1.0 approx.
Cell Size		[mm]	10 ~ 19
SURFACE:			
Lacquering			Coil coating Polyester coated / PVDF upon request
Gloss (Initial Value)	ASTM D523		As per the colour shade
Pencil Hardness	ASTM D3363		HB ~ F
ACOUSTICAL PROPERTIES:			
Sound Absorption Factor α_s	ISO 354		0.05 ~ 0.07
Air-borne Sound Insulation Index R_w	ISO 717	[dB]	21 ~ 25
THERMAL PROPERTIES:			
Temperature Range		[°C]	-40 to +80
CORE FIRE PROPERTIES:			
Fire Classification	BS 476- Part 4 EN 13501-1		Passes Class A2- s1, d0
ENVIRONMENT & HEALTH ASPECTS:			
Environment Management System			ISO 14001 : 2015
Occupational Health & Safety Management System			ISO 45001 : 2018
Quality Management System			ISO 9001 : 2015
DIMENSIONAL TOLERANCES:			
Panel Thickness		[mm]	± 0.2mm (upto 15mm) ± 0.3mm (upto 25mm)
Thickness of Coated Skin		[mm]	± 0.02mm
Weight		[kg/m²]	± 5%

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