



INTRODUCTION TO 3A COMPOSITES

3AC Southeast Pacific

Working with 3A Composites

The Way We Work - SEAP



Design

Achieve your design intent with material mimicry, right materials, color, texture, and finish



Value Engineering

Experience significant cost reductions by working with aluminum. Reduce weight, Cut costs, Keep performance & design

3A Composites

Working with Alucolux, Alucobond, & Alucore

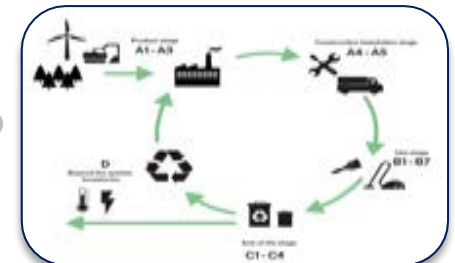
Specifications

Get all the support you need in systems, codes, approvals, wind loads, etc.



Sustainability

Work with aluminum:
Lightweight, Durable, 100% Recyclable



Birth of ALUCOBOND®

The Way We Work - SEAP



Alusuisse developed the first Aluminum composite material in collaboration with BASF and named it ALUCOBOND®

1968

Second site commenced production of ALUCOBOND® in Benton, Kentucky, USA

1979

ALUCOBOND® production commenced at the Alusuisse facility in Singen, Germany

1969

Third ALUCOBOND® manufacturing base commenced production in Shanghai, PRC

1999

Fourth ALUCOBOND® manufacturing base commenced production in Pune, India

2007

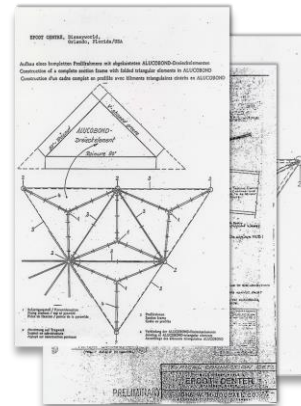
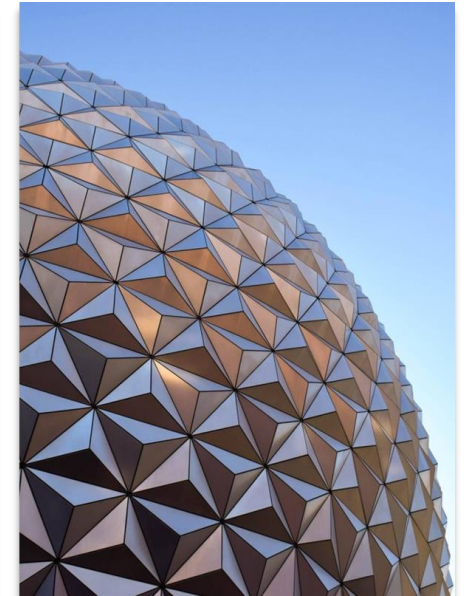
About Us

The Way We Work - SEAP

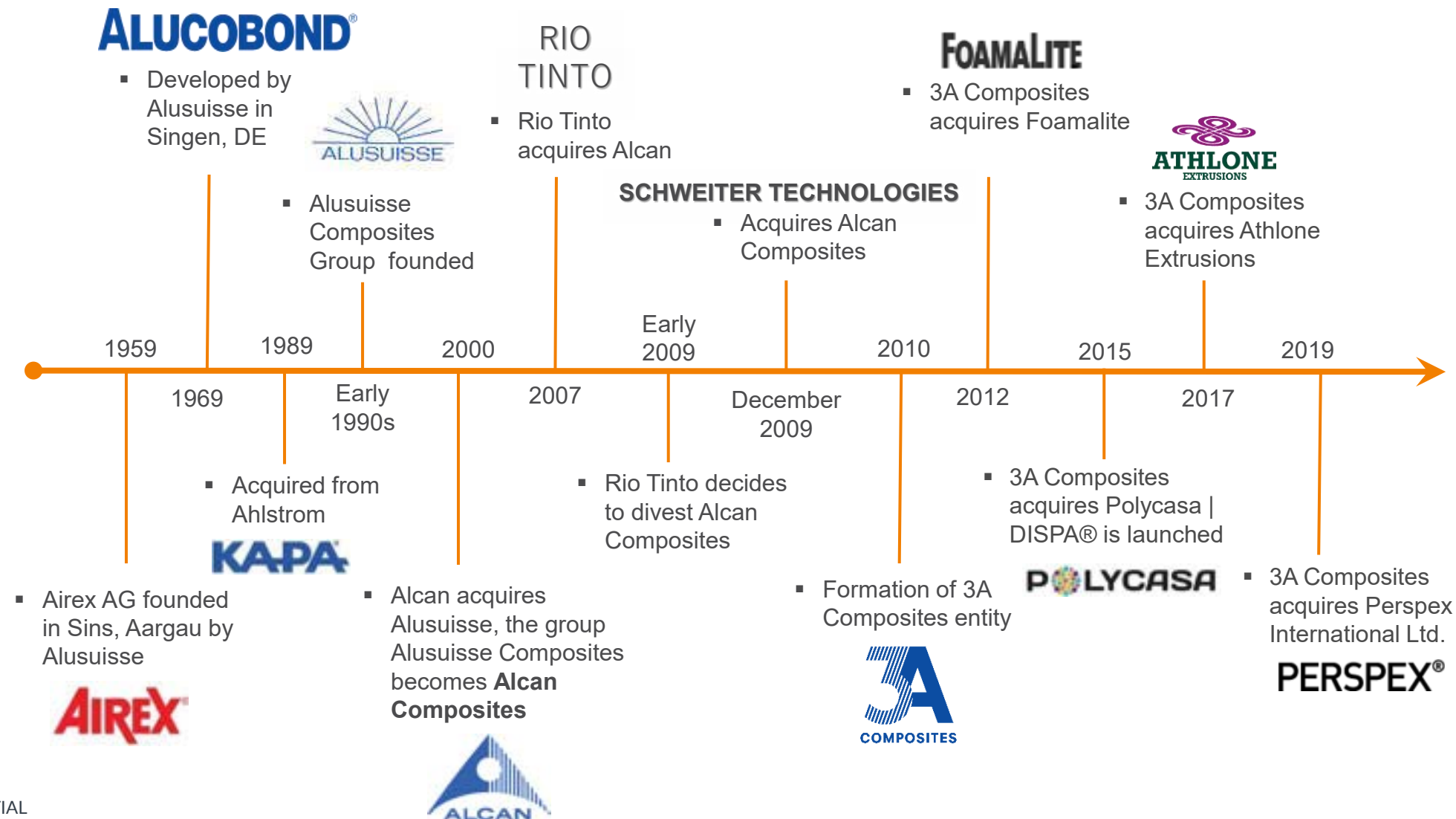
As a global leader in composite materials, with its head office in Switzerland, affiliated with Schweizer Technologies Group, 3A Composites employs more than 4400 people in Europe, America and Asia.

Presently, 3A Composites is a house of 20+ leading brands in their respective material and application categories. Among them, the flagship product lines used in architectural applications are:

1. **ALUCOBOND®** Aluminium Composite Material (cladding & curtain walls, interior walls, ceilings, column decoration)
2. **ALUCORE®** Aluminium Core Panels (cladding & curtain walls, roofing & ceilings)
3. **ALUCODUAL®** Engineered Solid Sheet (cladding & curtain walls, interior walls, ceilings, column decoration)
4. **ALUCOLUX®** Solid Aluminium Sheets (cladding & curtain walls, interior walls, ceilings, column decoration)



Our History – Over 50 Years of Global Leadership



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DESIGN

Bendable, Flexible, Perforable, Foldable

The Way We Work - SEAP

Maxima Shopping Center, Lithuania



Xuzhou Olympic Sports Center, China



Riyadh Front, Saudi Arabia



HSBC Headquarters, Sydney, Australia



Colors & Finishes



Standard Colour



Anodized



naturAL



Urban



terra



Standard Colour

Our Color Series is crafted with precision, offering a wide spectrum of options, superior quality, and a surface that delights both the eye and touch.

We use only premium, eco-friendly coating systems on ALUCOBOND® panels, ensuring:

- Exceptional weather resistance against harsh climates
- High protection from industrial pollutants
- A continuous coil-coating process that guarantees long-lasting color brilliance

Colors & Finishes

Bold Colors, Infinite Creativity

We offer solid colors and metallic finishes, with gloss levels ranging between 25% to 40% on the Gardner scale, meeting diverse design needs across applications. Custom specialty colors are also available upon request.

Utilizing advanced coil-coating technology, the aluminum cover sheets are pre-coated via continuous roller coating processes before composite panel production, ensuring flawless color consistency and durability.

*Surface colors are for reference only. Final color matching requirements must be confirmed with the factory.

Signal White (111)	Beige (103)	Umbra Grey (107)	Pure White 10 (100)	White 16 (101)	solid
Cream (102)	Light Grey (104)	Anthracite Grey (105)	Black Grey (106)	Graphite Grey (108)	
Dusty Grey (109)	Quartz Grey (110)	Basalt Grey (112)	Platinum Grey (136)	Black (326)	
Lemon (200)	Orange (210)	Red (202)	Ruby (202)	Grey Brown (337)	
Yellow Green (313)	Moss Green (317)	Steel Blue (350)			
Silver Metallic (500)	Smoke Silver Metallic (501)	Grey Metallic (502)	Champagne Metallic (503)	Bronze Metallic (504)	
Dark Grey Metallic (505)	Steel Grey Metallic (506)	Sunrise Silver Metallic (600)	Colorado Gold Metallic (605)	Atacama Bronze Metallic (606)	
Siena Copper Metallic (709)					
					metallic
					metallic special

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Colors & Finishes

SOLID & METALLIC COLOURS



COLOURSCAPES



ANODIZED LOOK



ORGANICS ELEGANCE



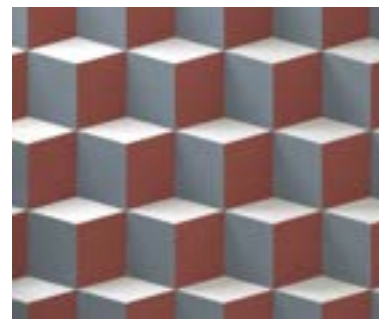
GROVE



CONCRETE



URBAN



NATURAL



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ALUCOBOND®

o·r·g·a·n·i·c·s
e·l·e·g·a·n·c·e

Muted Tones, Timeless Grace



3A
COMPOSITES

ELEGANCE CRAFTED FROM THE ORGANIC CANVAS

When nature adorns its rawness, aesthetics emerge abundantly. The earth, with its soil, sand, and turf, creates a tapestry of muted, mellow tones. Even rivers, mountains and the skies sing a subtle, harmonious symphony.

Inspired by nature, ALUCOBOND® organics elegance is a curated spectrum of sophisticated shades. Much like warm hues of raw honey or hidden pearls in an oyster's grasp, this collection celebrates the beauty that emerges from the unadulterated and unaltered. As the mist gently shrouds the earth before yielding to the nurturing rain, these seemingly unassuming muted colours unveil their true elegance.



SHADES



CHALK

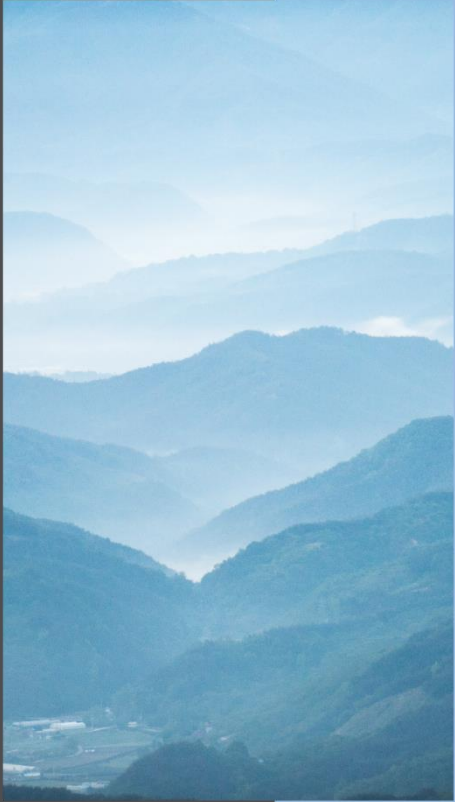


OLIVE



WEED

SHADES



MYST



HAZE



THUNDER GREY

SHADES



MAUVE



DESERT



HONEY

SHADES



ALUCOBOND®

ANODISED LOOK

The natural beauty of satin-smooth metal



SOPHISTICATED AND TIMELESS

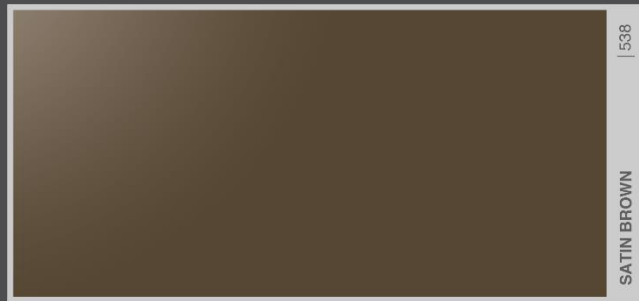
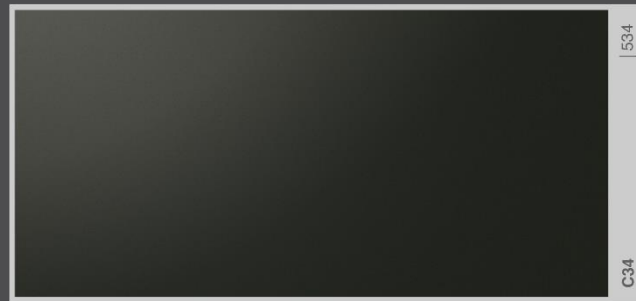
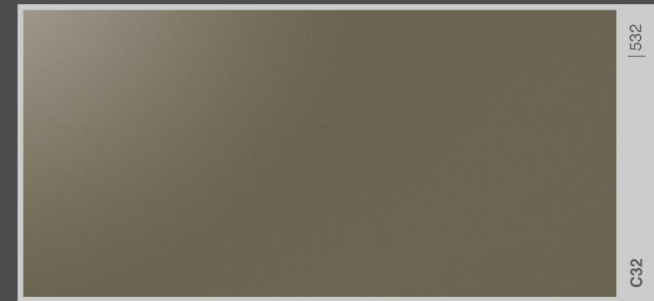
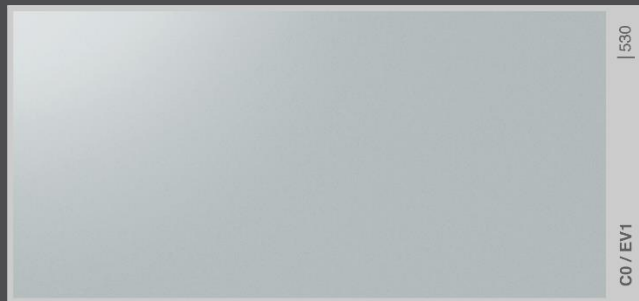
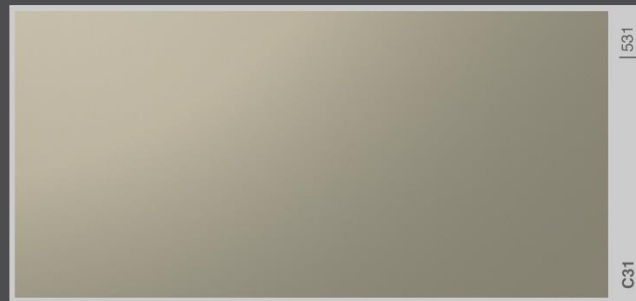
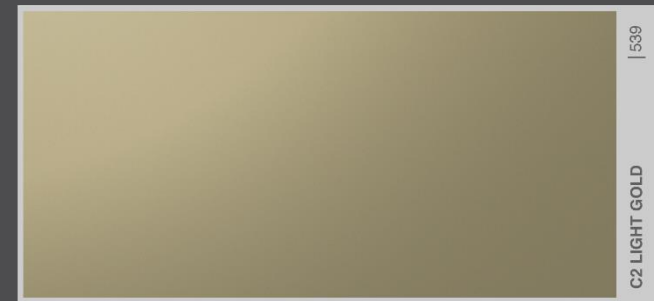
In the world of modern architecture, the ALUCOBOND® anodized look series stands as a shining testament to the artistry of satin metal surfaces. Its matte surfaces with a profound impact achieved through a subdued gloss level, exemplifies the fusion of excellence and visual aesthetics reminiscent of the charm found in authentic anodized textures. Its allure lies in the way it effortlessly captures the natural beauty of metal, elevating any space it graces to a level of elegance.

From the grandest buildings to the smallest structures, this satin finish weaves a tale of timeless beauty and unparalleled sophistication.



SHADES

We have refined it to present you with the most awe-inspiring shades, destined to elevate your creation with timeless metallic allure.



ALUCOBOND®

COLOURSCAPES

The fascinating world of hues



YOUR DREAM IS OURS TOO

In the world of design, colour plays a crucial role. It can be used to highlight architectural features, create visual interest, and add personality to a space. From the vibrant hues of a modern art installation to the subtle shades of a traditional painting, colours have the power to transform a room from ordinary to extraordinary.

Step into the world of vibrant hues and dazzling shades, and let the power of colour transform your design with ALUCOBOND® colourscapes.



METALLIC COLOURS



Pearl Copper Metallic
72102



Classic Copper Metallic
72103



Bright Copper Metallic
72104



Classic Champagne Metallic
77141



Pearl Bronze Metallic
79111



Bright Gold Metallic
74112



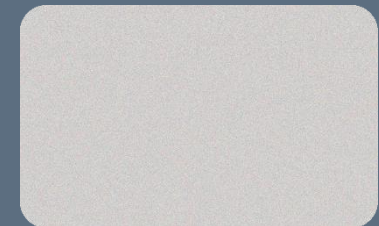
Light Sand Stone
77122



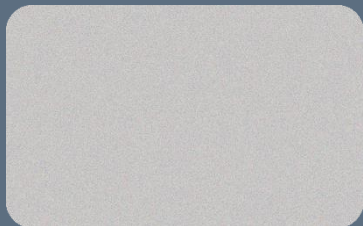
Sand Stone
71121



Mild Champagne
Silver Metallic
77146



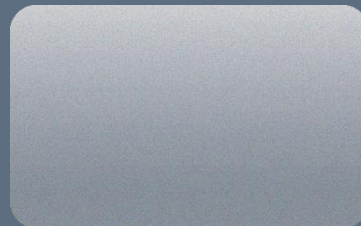
Bright Grey Metallic
77144



Mild Grey Metallic
77145



Elegant Grey Metallic
77129



Steel Grey Metallic
77148

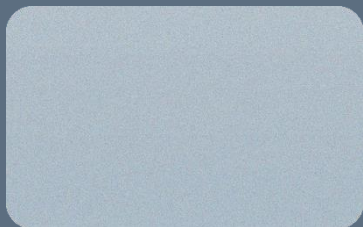


Classic Grey Metallic
77334

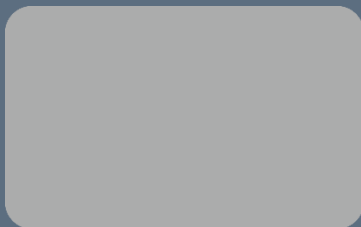


Manganese Grey Metallic
77138

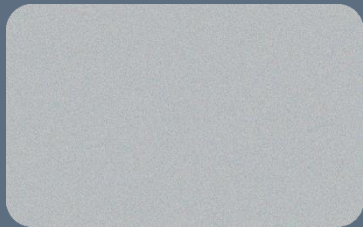
SOLID COLOURS



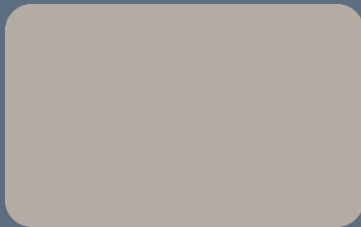
Pearl Copper Metallic
72102



Classic Copper Metallic
72103



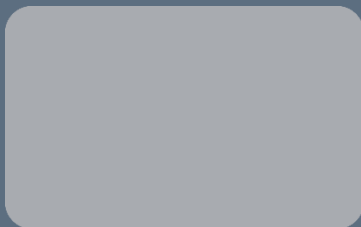
Bright Gold Metallic
74112



Light Sand Stone
77122



Bright Copper Metallic
72104



Sand Stone
71121

VIBRANT COLOURS



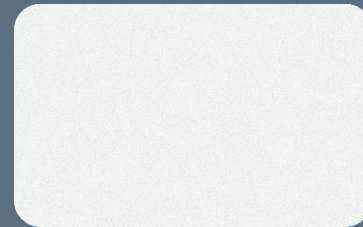
Grey
7023



Green
7481



Yellow
109C

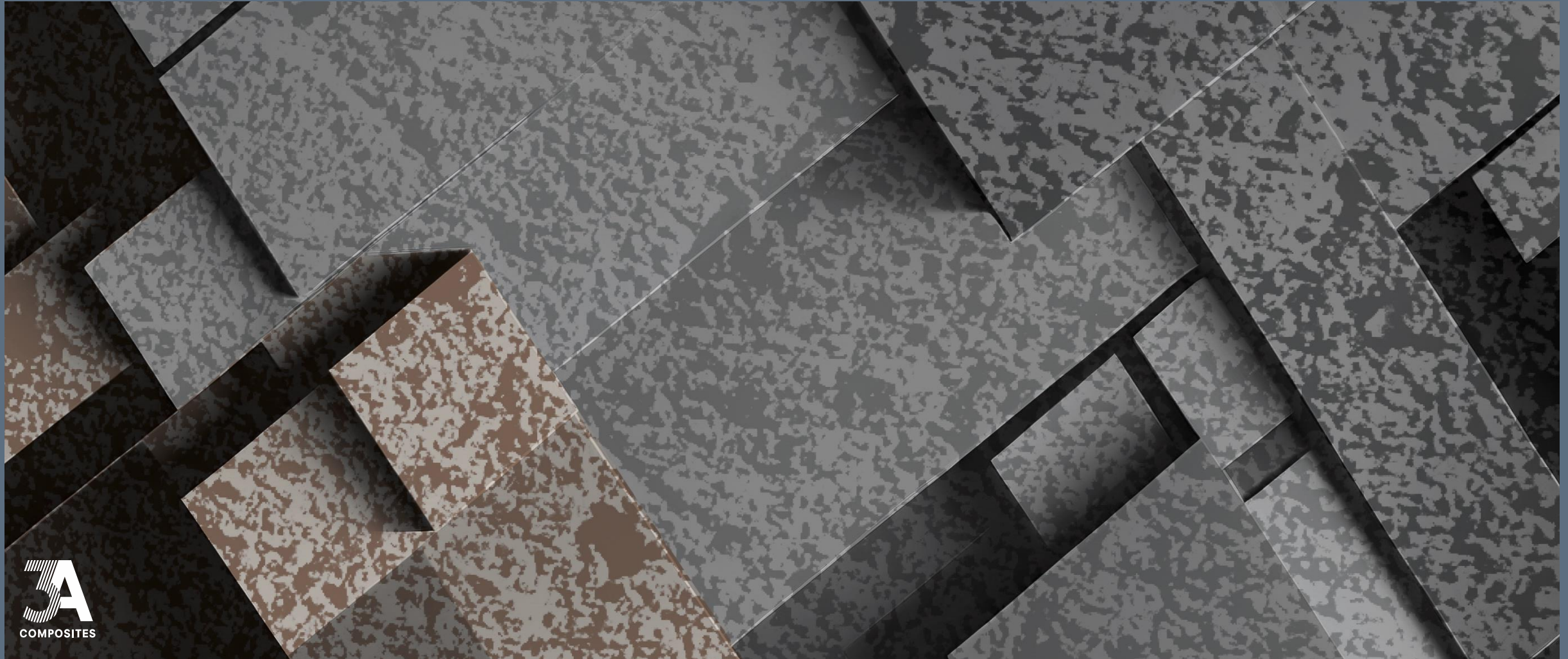


Snow White Glossy
71221

ALUCOBOND®

CONCRETE

Timeless face of contemporary beauty.



3A
COMPOSITES



LET THE CONTEMPORARY BEAUTY TAKE OVER.

The raw beauty of concrete lies in its simplicity and minimalism. Unlike other materials that rely on decorative elements to enhance their appearance, concrete finishes rely on the natural texture and colour of the material to create a striking bare look.

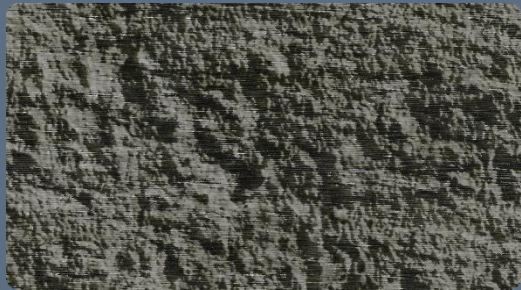
Its beauty is often appreciated by designers who are looking for a unique and contemporary finish for their projects.

ALUCOBOND® concrete gives the same raw look plus the advantages of using aluminium composite material.



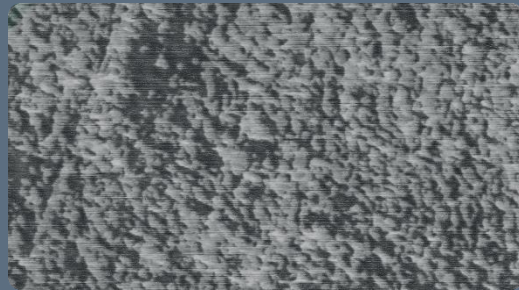
SHADE CARD

We have roughed it out to bring you some of the most breathtaking contemporary concrete shades that will truly embellish your creations.



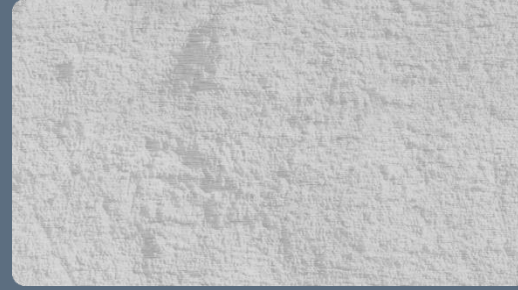
ASH GREY

| 711



SMOKE GREY

| 712



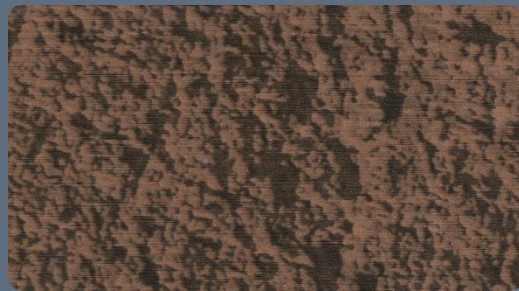
PEBBLE GREY

| 713



MOCHA BROWN

| 714



GOLDEN BROWN

| 715



CARAMEL BROWN

| 716



CINNAMON BROWN

| 717

ALUCOBOND®

GROVE

Bring alive your designs with wood.



3A
COMPOSITES

ADD THAT WOODEN TOUCH TO YOUR CREATION.

When it comes to crafting works of art, the material you choose can make all the difference. And one material that stands out for its natural beauty and versatility is wood.

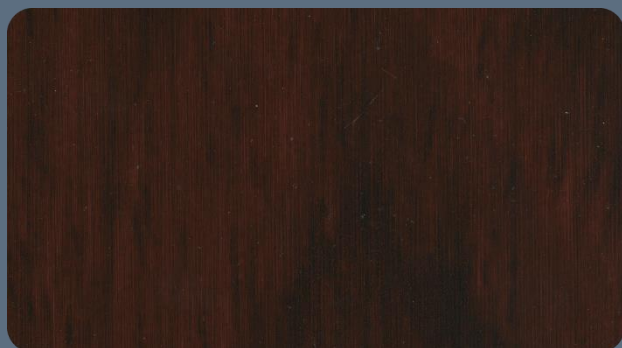
The various textures, shades, finishes, and grains of wood make it an ideal material for crafting iconic works of art. From intricate sculptures to elegant cladding, wood can be transformed into a wide range of stunning creations.

ALUCOBOND® grove blends the beauty of wood with the benefits of aluminium composite material to realize every towering vision.



SHADE CARD

We have carefully curated only the best wood finishes for you. Make your structures stand out by giving them an exquisite, classic look with ALUCOBOND® grove.



BENGAL MAHOGANY

| G-112



HIMALAYAN WALNUT

| G-113



RED OAK

| G-114



DINDORI SAKHUA

| G-115



GIR TEAK

| G-116



KASHMIRI MAPLE

| G-117

VALUE ENGINEERING

Cost Iceberg

Visible Cost

Hidden cost



Material cost

- Material price
- Volume in sqm.

Contracted price

- Installation

Maintenance

- Cleaning
- Safety detection

Material lifecycle

- Cost of replacement

Size & Weight

- Logistics
- On site transportation
- Structural requirement

Challenges We Face in the Global Market

ALUCOBOND Days 2026

Cost of Information

Information economics is a paradigm that reconciles:

- ubiquitous consumer "errors"
- our usual assumption that consumers are "optimizing"

Main idea: Information search is **costly**

Implication: Resources devoted to search is itself a consumer decision

Asymmetric Information

Sellers know more than buyers:

- Electronics producers know more about durability of their products
- Freelancers know more about the quality of their work
- Car dealers know more about the quality of their second-hand cars

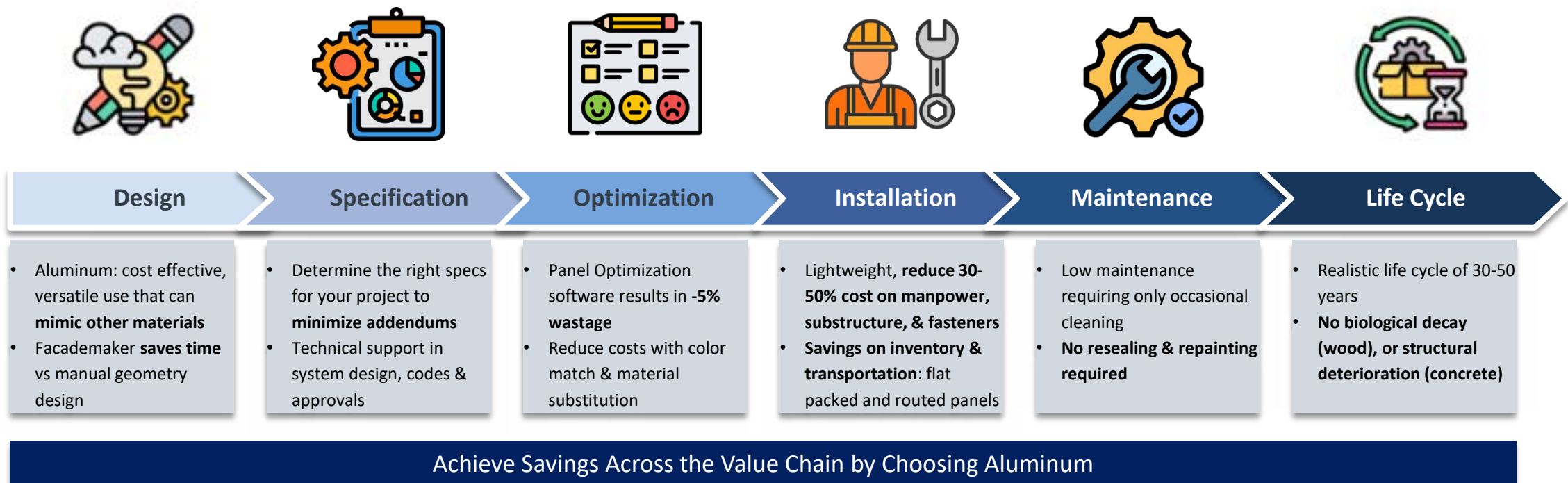
Adverse Selection

- When buyers cannot distinguish sellers' type, they must offer the same price to "good" and "bad" sellers
- This price may be prohibitively low for the "good sellers"
- Only "bad" sellers remain in the market ("**adverse selection**") and the equilibrium price reflects that

Our Goal: Lower The Cost of Information to Enable Optimized Decisions By Our Customers

Value Engineering

The Way We Work - SEAP



Case Study: Panel Optimization & Maintenance

Indonesia

Pondok Indah Mall 3

Using our **panel optimization** software, 3A Composites assisted the owners of Pondok Indah Mall 3 to save wastage on panels, reducing panel usage by **12.36%** vs the competition.

At the same time, based on the experience of the owners working with other brands, maintenance is required per quarter vs **Alucobond maintenance of twice a year**.

1087

Square meters saved
with wastage reduction

\$29,349

Value of panels
saved in USD

\$35,178/yr

Maintenance cost savings
Per annum in USD



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Case Study: Life Cycle & Maintenance

Thailand

Thai Burner Building (est. 2004)

- Alucobond White façade exposed to heavy pollution and rain (adjacent to Ram Inthra–At Narong Expressway)
- No silicone staining
- No rain trail or dirt run-off marks
- *No maintenance more than two decades*

At the same time, based on the experience of the owners working with other brands, maintenance is required per quarter, with an average life cycle of 5 years

4

Lifecycles Outlasted
Vs Competition

\$189,000

Value of replacement panels
saved in USD over 21 years

\$35,178/yr

Maintenance cost savings
Per annum in USD



Case Study: Telepark Data Centre Singapore

Live Façade Replacement- Fast-Track Delivery, Panel Optimization & Operational Continuity

Project Overview - Strategic VAS reference project in Singapore

Panel Optimization & Value-Added Service – R2I (Ready to Install) Panel

Telepark Data Centre - ALUCOLUX (Approx. 13,000 m2)

Working with Capitaland and Arup, 3A Composites supported the façade replacement of Telepark Data Centre, where the existing stone-clad façade required full refurbishment while maintaining uninterrupted operations.

3A Composites proposed Ready-to-Install (R2I) prefabricated panels and panel optimization software, delivering a fast-track façade replacement solution with improved cost and schedule performance. R2I panels were fully pre-fabricated at 3AC facility and installed immediately upon delivery, minimizing site time and enabling efficient execution in a live operational environment.

4-6%

Panel usage
reduction through
optimization

20-30%

Installation Time
Reduction

1.5×

Installation
productivity

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Telepark Singapore

Before



After Re-cladding



Case Study: Apple Campus Singapore - Facade Refurbishment Long Term Operational Efficiency, Lifecycle and TCO Story

Project Overview - strategic ALUCOBOND A2 reference project in Singapore, demonstrating façade refurbishment for a global brand and strengthening our positioning in premium commercial retrofit projects.

Apple Campus in Ang Mo Kio – ALUCOBOND A2 (Approx. 10,000 m2)

Originally constructed in 1987, Apple's South Asia Office in Ang Mo Kio underwent a major refurbishment and façade upgrade to align with global design standards, sustainability goals and long-term performance. Through re-cladding works using ALUCOBOND A2, 3A Composites worked closely with DP Façade and Mero Asia Pacific, transformed the aging building into a modern, fire-compliant, lightweight and durable corporate façade suited to Singapore's tropical climate and regulatory requirements

-20%

Lifecycle Cost
Saving

-40%

Maintenance
Reduction

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Apple Campus Singapore
Before



After Re-cladding

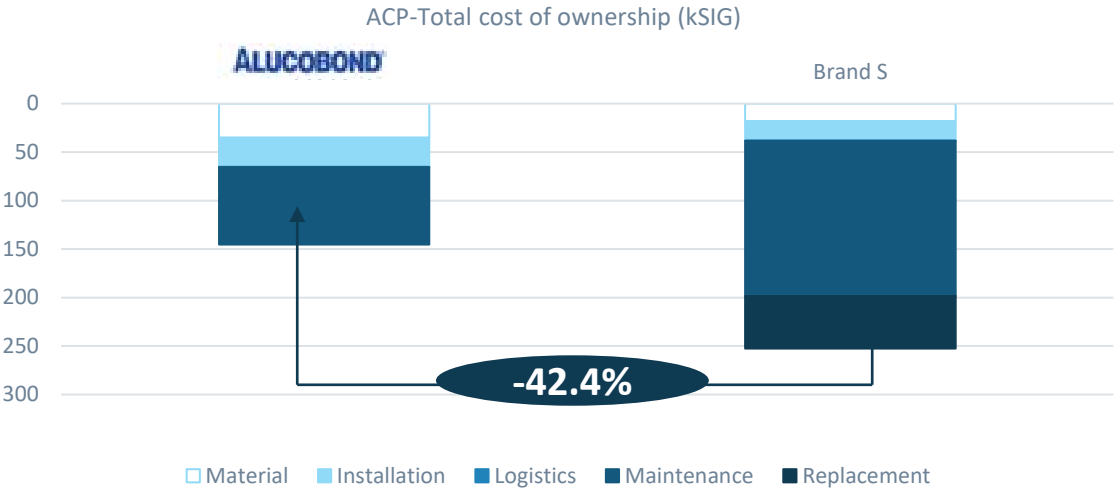


Case Study: Saving Your Total Cost of Ownership vs Competition

3A Composites can help save total cost of ownership up to **42.4%** via better durability, corrosion resistance & lower maintenance



Bank CIMB Niaga Bintaro (est. 2009)



ALUCOBOND: ACP	Product	Brand S
35 USD	Material Costs / sqm	18 USD
30.5 USD	Installation & Logistics / sqm	20.5 USD
80 USD	Maintenance / sqm / yr	160 USD
0	Replacement After 20 years / sqm	54 USD

ACP: Best in Cost Efficiency While Maintaining Design Expression

Total Cost of Ownership: ACP vs Other Materials Over 50 Years



Office Building Example

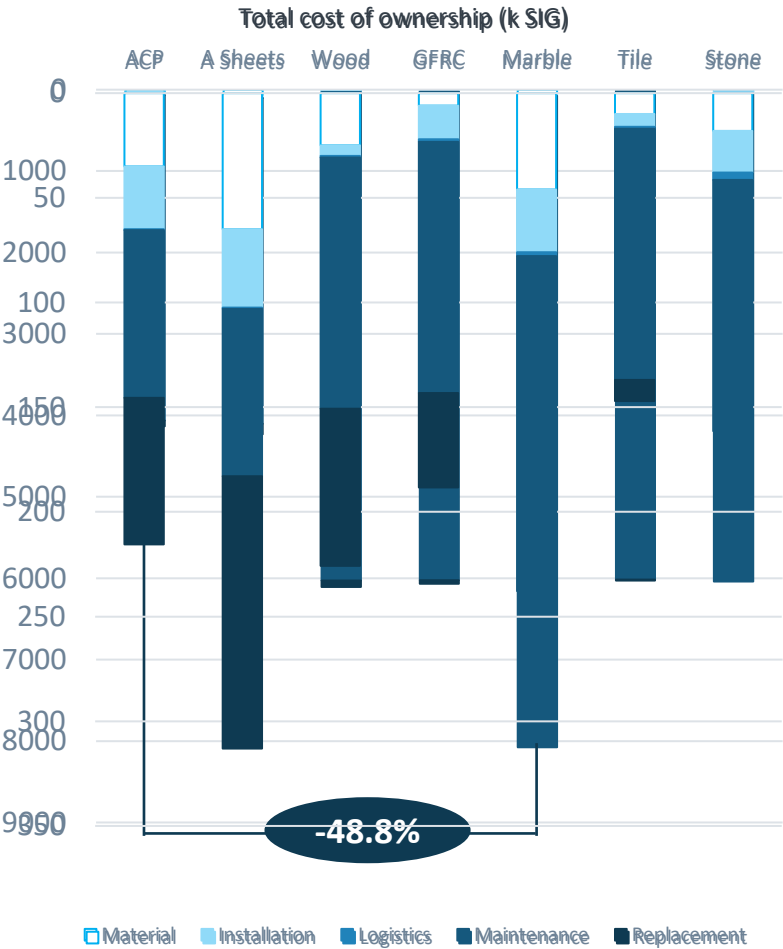
Location: Jakarta, Indonesia

Material: Marble

Volume: 10000 sqm

Climate: Humid & Sunny

Designed lifecycle: 50 yrs



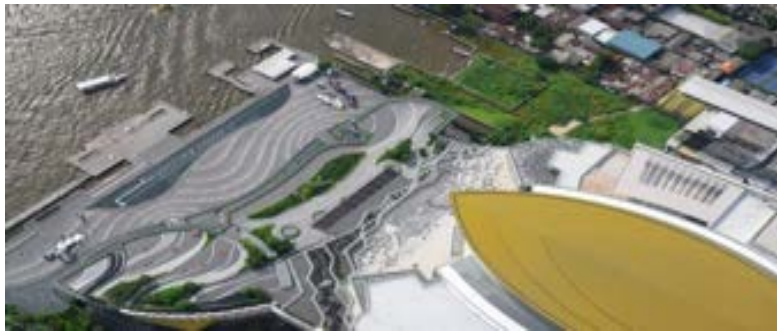
ACP can save up to **48.8%** in the total cost of ownership in comparison with other materials it can mimic, mostly due to minimal need in maintenance, lower cost in logistics, and long cycle, contributed by its light weight, stain-resistant surface, and durability.

Material comparison table:

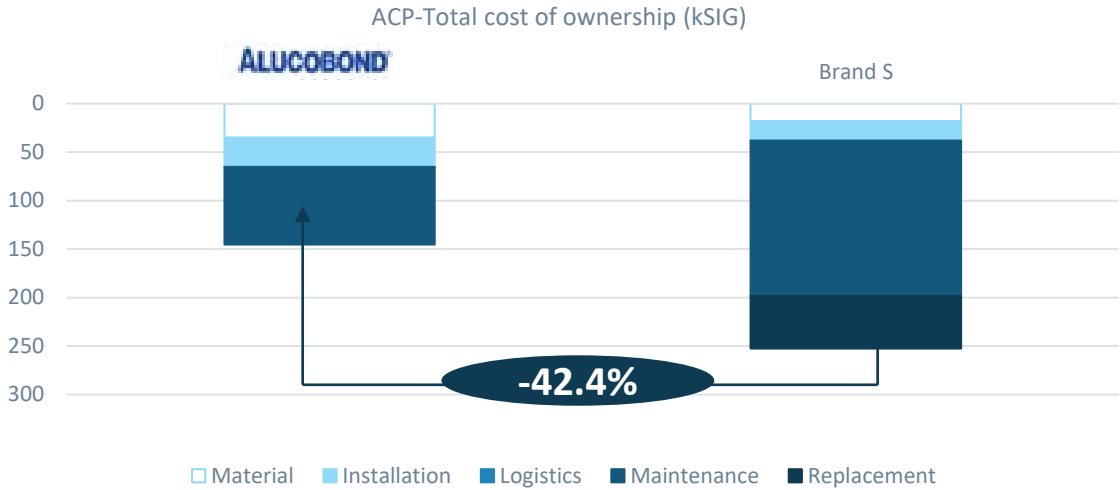
Per Sqm	Material price	Installation price	Life cycle In yrs	Kg / sqm	Maintenance
ACP	USD 35	USD 30	20	7.6	Minimal
ASS	USD 65	USD 37.5	20	8.1	Minimal
Wood	USD 25	USD 5	15	10.5	Med
GFRC	USD 6	USD 16	5	20	Med
Marble	USD 46	USD 30	75	27	High
Tile	USD 10	USD 6	50	15	Med
Stone	USD 18	USD 20	75	52	Med

Case Study: Saving Your Total Cost of Ownership vs Competition

3A Composites can help save total cost of ownership up to **42.4%** via better durability, corrosion resistance & lower maintenance



ICONSIAM (est. 2018)



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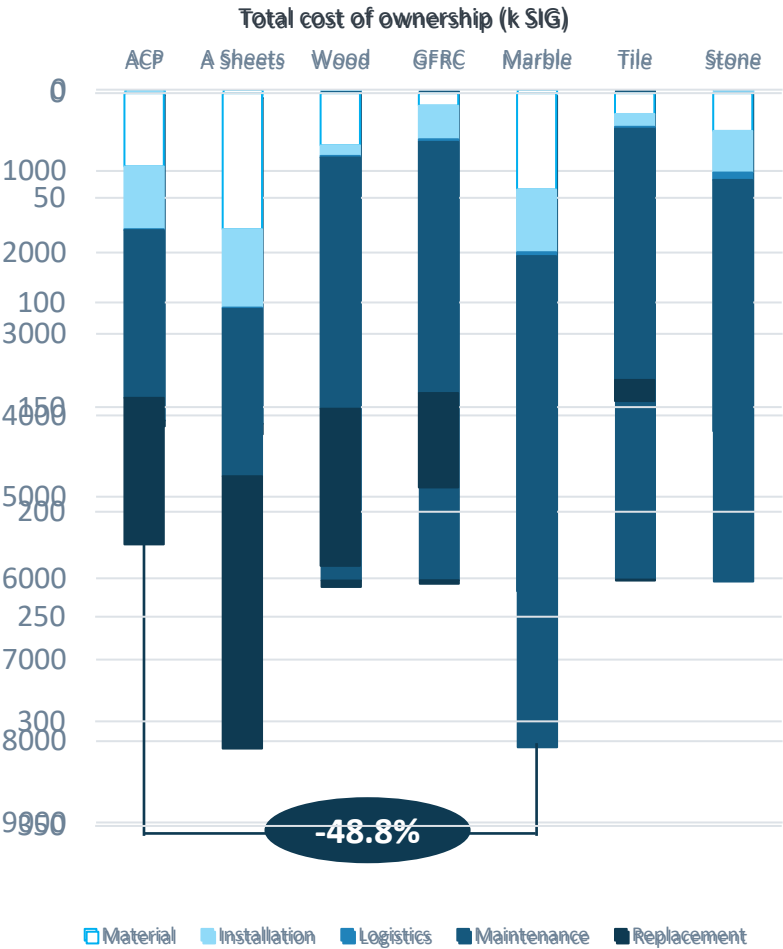
Aluminum: Best in Cost Efficiency While Maintaining Design Expression

Total Cost of Ownership: Aluminum vs Other Materials Over 50 Years



Office Building Example

Location: Bangkok, Thailand
Material: Alucolux
Climate: Humid & Sunny
Designed lifecycle: 50 yrs



ACP can save up to **48.8%** in the total cost of ownership in comparison with other materials it can mimic, mostly due to minimal need in maintenance, lower cost in logistics, and long cycle, contributed by its light weight, stain-resistant surface, and durability.

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Tile	USD 10	USD 6	50	15	Med
Stone	USD 18	USD 20	75	52	Med

SPECIFICATION

Examples of Fires with ACM

Lacrosse, Melbourne 2014



The Address, Dubai 2015



The Torch, Dubai 2017



Examples of Fires with ACM – Toh Guan Road, Singapore 2017



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Examples of Fires with ACM – Grenfell Tower, London 2017



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How do we know if ACM truly is FR or NC?

Perform spot checks on materials using standardised and established testing methods

- BS 476 pt 6&7 testing on the core is **NOT** a standard procedure and there is no established sample preparation method in the standard
- Results for the same material differ depending on
 - Core produced without skins
 - Core exposed after peeling off one skin
 - Core exposed after milling off one skin
 - Core exposed after peeling/milling off both skins
 - Exposed core with fiber cement board backing
- Existing “Class 0” rated products have obtained this through variations of the above and the samples were not selected by independent inspectors, but by the applicant → **You have no way to compare results**
- Currently NO accepted standard procedure for this “Class 0” with BS476 pt 6&7 → **Either develop one OR use different method**



ALUCOBOND® PLUS | Port Pavilion, Rotterdam, Netherland



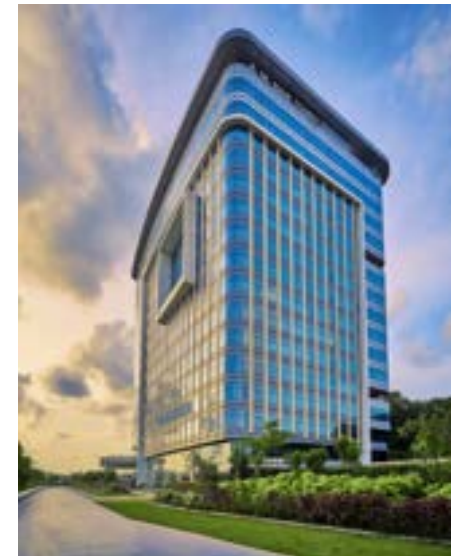
How do we know if ACM truly is FR or NC?

Perform spot checks on materials using standardised and established testing methods

- The BEST way to determine how good an FR ACM is:
 - To analyse the chemical composition of the core
 - To determine the mineral content in the core through its calorific value
- EN13501 classifications include such testing and are meaningful
 - 70%+ mineral content in the core or a calorific value of less than 13.6 MJ/kg have been determined as ideal for FR ACM
 - 92%+ mineral content in the core or a calorific value of less than 3 MJ/kg are the requirements to classify as non-combustible
- These are quick and cheap tests with reliable, meaningful and representative outcomes, requiring only small amounts of samples



ALUCOBOND® PLUS | A M Naik Towers (L&T), Mumbai, India



Choose ALUCOBOND®

As the inventor of Aluminium Composite Material, ALUCOBOND® has been widely used in the construction industry since its entrance in 1969.

ALUCOBOND® is designed and manufactured for the application on facades, roofs, soffits, column claddings and ceilings. It is light, stiff, easy to process and has a high quality coil coated finish. It is the major component of most facades across Asia next to glass.



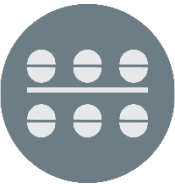
Durability

ALUCOBOND® uses fluoropolymers for surface coating which makes it the preferred choice for longterm architectural use. Inherently, its Marine Grade Alloy is corrosion-resistant and ensures durability in harsh corrosive environment.



Highly Adaptable

ALUCOBOND® is rigid yet highly formable. This opens up wide possibilities for architects and consultants to design their dream projects.



Optimal Flatness

High-speed automated & intelligent ACM production line accurately formulates mineral core content and ensures uniform thickness.



Light Weight

The composite structure of ALUCOBOND® creates an impressive strength-to-weight ratio irrespective of the panel size.

Choose ALUCOBOND®



Bouquet of Colours & Finishes

ALUCOBOND® offers a wide range of colours, surface finishes and textures to suit every need and meet every requirement.



Manufacturing Expertise

More than 50 years of experience-driven manufacturing process built over years of research and development.



Warranty

Warranty backed by the leading brand in the industry.



Fire Safety

ALUCOBOND® PLUS is a fire retardant grade that is suitable for all applications and has a proven safety record, both in testing and real life. Wherever regulations or specifications require it, ALUCOBOND® A2 sets the non-combustible ACM standard since 1992.



Highly Valued Certification

Class 1A Certification - done through independent 3rd party with inspections and audits on a regular basis.



Savings on Heating / Cooling Costs

The optimally insulated building envelope provides considerable savings in energy costs.

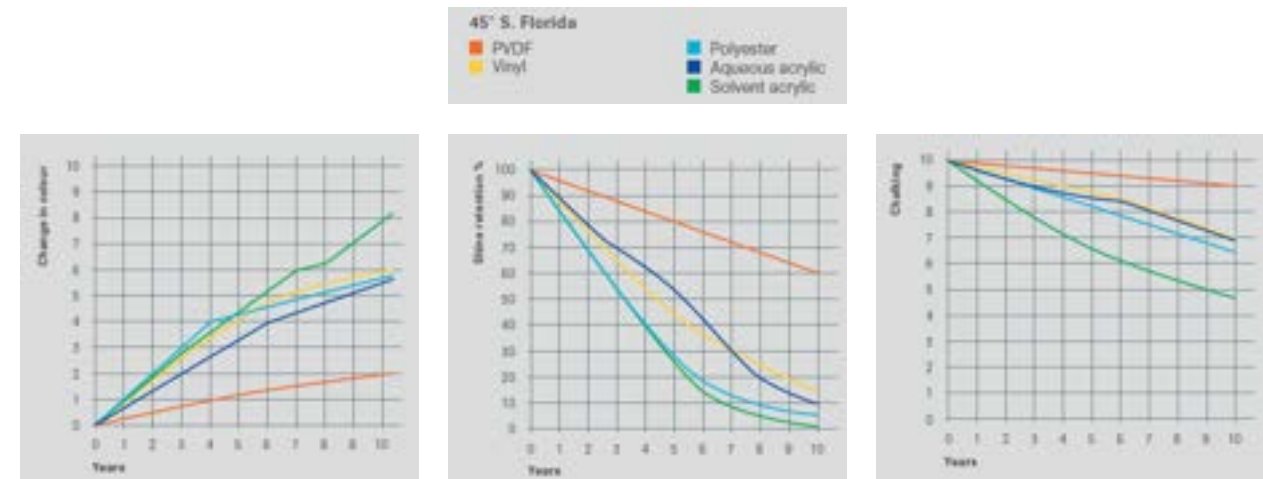
Lightness Meets Rigidity

- ALUCOBOND® has high rigidity when it comes to panels with large sizes.
- It is a composite sheet made with a core of different degrees of minerals bound between two aluminium sheets.
- Due to its low weight, ALUCOBOND® is easy to transport and handle during fabrication and at the site. Its high rigidity and strength makes it the most suitable material for exterior wall cladding.
- When properly designed and installed, ALUCOBOND® panels will keep their shape and remain flat for years, even when exposed to extreme weather conditions.



UV- Resistant Coating

- ALUCOBOND® uses 'coil coating' procedure to coat aluminium. This procedure allows the highest quality paint to be applied uniformly.
- All colours are applied in multiple coats and stove lacquered. This ensures a durable, brilliant colour effect.
- ALUCOBOND® uses high-quality polymer paint systems such as PVDF (polyvinyl fluoride) coating systems and FEVE (Fluoroethylene-Alkyl Vinyl Ether) which have proven themselves over time.
- The assessment of the various paint qualities is undertaken in external weathering tests according to the following parameters:
 1. Durability of the paint particles
 2. Durability of the level of gloss
 3. Chalking behavior

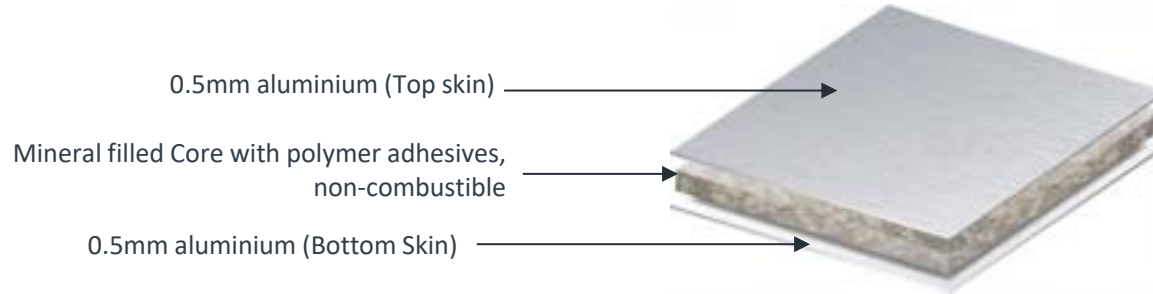


ALUCOBOND® quality benchmarks are far above the usual E.C.C.A test requirement

PRODUCTS

ALUCOBOND® A2 (Non Combustible)

Fire-protection rating: A2 – s1, d0



- ALUCOBOND® A2 is an aluminium composite panel with a non-combustible mineral-filled core used in architecture worldwide.
- Due to this property, ALUCOBOND® A2 meets the strictest regulations, while fully maintaining all the possibilities of design freedom.
- ALUCOBOND® A2, allows simple processing, is impact resistant, breakproof and weatherproof, and above all non-combustible.



ALUCOBOND® A2 | BCF-Arena, Fribourg Switzerland



Product Range

Thickness: 3, 4 mm

Standard Width: 1250, 1500mm

Length: 2500-6999

Technical Data Sheet ALUCOBOND® A2

PROPERTIES	STANDARD	UNIT	VALUES
Panel Thickness	Nominal	mm	4
Thickness of coated top skin	Nominal	mm	0.5
Panel Width	Nominal	mm	1250 / 1500
Weight	Nominal	kg/m ²	8.3
TECHNICAL PROPERTIES			
Section Modulus <i>W</i>	ASTM C 393	cm ³ /m	1.75
Rigidity (Poisson's ratio $\mu = 0.3$) E-I	ASTM C 393	kNcm ² /m	2400
Alloy	ASTM B 209		3xxx/5xxx series
Temper of AL	ASTM B 209		H24
Modulus of Elasticity	ASTM E8	N/mm ²	70,000
Tensile Strength of Aluminium	ASTM E8	N/mm ²	$R_m \geq 125$
0.2% Proof Stress	ASTM E8	N/mm ²	$R_{p0.2} \geq 90$
Elongation	ASTM E8	%	$A_{50} \geq 4$
Linear Thermal Expansion	ASTM D 696		2.4 mm / m at 100°C temperature difference
CORE: Non-combustible mineral filled polymer			
SURFACE			
Lacquering			Coil Coating Fluoropolymer based (PVDF/FEVE)
Gloss (initial value)	ASTM D 523	%	As per colour shade
Pencil Hardness	ASTM D 3363		HB - F

PROPERTIES	STANDARD	UNIT	VALUES
ACOUSTICAL PROPERTIES			
Sound Absorption Factor α_s	ASTM C 423		0.05
Sound Transmission R_w	ASTM E 90	dB	STC: 30
THERMAL PROPERTIES			
Thermal Resistance R	ASTM C 1363	m ² K/W	0.009
Temperature Resistance		°C	-30 to +80
FIRE PROPERTIES			
Fire Classification	EN 13501-1 NFPA 285		Class A2, s1, d0 Passes
ENVIRONMENT & HEALTH ASPECTS			
Environment Management System			CFC Free
Quality Management System			VOC free
Occupational Health and Safety Management System			ISO 14001:2015 ISO 9001:2015 ISO 45001:2018
DIMENSIONAL TOLERANCES			
Panel thickness		mm	4 mm ± 0.2 mm
Thickness of coated top skin		mm	0.5 ± 0.05 mm
Weight		kg/m ²	8.3 $\pm 5\%$
Width		mm	Upto 1500 mm $+ 4$ mm
Length		mm	< 4000 mm $+ 6$ mm Above 4000 mm $+10$ mm

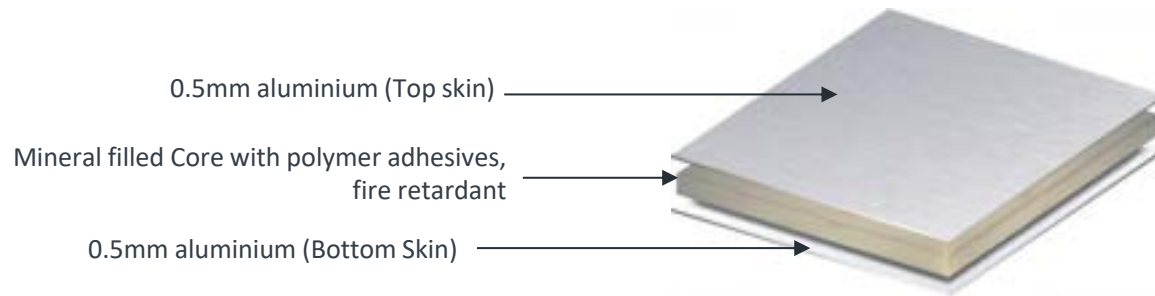
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Fire Classification – ALUCOBOND® A2

Country	Test accord. to ...	Classification
Australia	AS ISO 9705 AS 1530.3 Indices EN 13501-1	Group 1 material SMOGR A 0.630 m ² / s ² 0 (ignitibility) 0 (flame spread) 0 (heat evolved) 0-1 (smoke development) A2-s1, d0
China	GB 8624-2012	Class A (A2-s1, d0, t0)
EU	EN 13501-1	Class A2-s1, d0
Germany	EN 1187 (method 1) / DIN 4102-7	Passed
Great Britain England / Wales / Scotland	BR 135 BS 8414 part 1 & 2	met the performance criteria Passed
Malaysia	BS 8414-1 BS 476, Part 6 BS 476, Part 7 Approved for outdoor wall cladding of any type of building without height limit	Passed Class 0 Class 1
Poland	EN 13501-1	Class A2-s1, d0
Russia	GOST 30244-94 GOST 30402-95 GOST 12.1.044-89 GOST 12.1.044-89	G1 (combustibility) W1 (flammability) D1 (smoke development) T1 (toxicity)
Singapore	EN 13501-1 BS 476, Part 6&7 (Core Exposed) NFPA 285 Approved for outdoor wall cladding of any type of building without height limit	Class A2, s1, d0 Passed
Switzerland	VXF	RF1
UAE	NFPA 285 EN 13501-1 ASTM E84	Passed Class A2-s1, d0 Class A

ALUCOBOND® PLUS (Fire Retardant)

Fire-protection rating: B - s1 d0



- ALUCOBOND® PLUS is a composite panel consisting of two aluminium cover sheets with a hardly flammable mineral-filled core and has been developed exclusively for the stringent fire regulations in architecture
- This next generation product boasts a range of fantastic properties such as surface flatness, formability, resistance to weather and simple processing
- With myriad applications ALUCOBOND® PLUS is used extensively for airports, metro stations, railway stations, stadiums, corporate parks, IT parks, high-rise towers, malls, etc.



ALUCOBOND® PLUS | A M Naik Towers (L&T), Mumbai, India



Product Range

Thickness: 3, 4 mm

Standard Width: 1250, 1500mm

Length: 2500-6999

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Technical Data Sheet ALUCOBOND® PLUS

PROPERTIES	STANDARD	UNIT	VALUES
Panel Thickness	Nominal	mm	4
Thickness of coated top skin	Nominal	mm	0.50
Width	Nominal	mm	1250 / 1500
Weight	Nominal	kg/m ²	7.5
TECHNICAL PROPERTIES			
Section Modulus W	ASTM C 393	cm ³ /m	1.75
Rigidity (Poisson's ratio $\mu = 0,3$) E-I	ASTM C 393	kNcm ² /m	2400
Alloy Grade	ASTM B 209-04		3xxx / 5xxx series
Temper of Cover Sheets	ASTM B 209-04		H14 / H24
Modulus of Elasticity	ASTM E8	N/mm ²	70,000
Tensile Strength of Aluminium	ASTM E8	N/mm ²	$R_m \geq 125$
0.2% Proof Stress	ASTM E8	N/mm ²	$R_{p0.2} \geq 90$
Elongation	ASTM E8	%	$A_{g0} \geq 4$
Linear Thermal Expansion	ASTM D696		2.4 mm / m at 100°C temperature difference
CORE			Non-combustible mineral filled polymer
SURFACE			Coil Coating
Lacquering			Fluoropolymer based (PVDF/FEVE)
Gloss (initial value)	ASTM D 523	%	As per colour shade
Pencil Hardness	ASTM D 3363		HB - F

PROPERTIES	STANDARD	UNIT	VALUES
ACOUSTICAL PROPERTIES			
Sound Absorption Factor α_s	ASTM C 423		0.05
Sound Transmission Loss R_w	ASTM E 90	dB	STC: 30
THERMAL PROPERTIES			
Thermal Resistance R	ASTM C 1363	m ² K/W	0.009
Temperature Range		°C	-30 to +80
FIRE PROPERTIES			
Fire Classification	EN 13501-1		Class B - s1, d0
	ASTM E 84		Class I
	NFPA 285		Passes
	BS 8414		Passes
CORROSION RISK			Marine grade alloy
ENVIRONMENT & HEALTH ASPECTS			
			CFC Free
			VOC free
Environment Management System			ISO 14001:2015
Occupational Health and Safety Management System			ISO 45001:2018
Quality Management System			ISO 9001:2015
DIMENSIONAL TOLERANCES			
Panel thickness		mm	4 mm ± 0.2 mm
Thickness of coated top skin		mm	0.50 ± 0.05 mm
Weight		kg/m ²	7.5 $\pm 5\%$
Width		mm	Upto 1500 mm ± 4 mm
Length		mm	< 4000 mm ± 6 mm
			Above 4000 mm ± 10 mm

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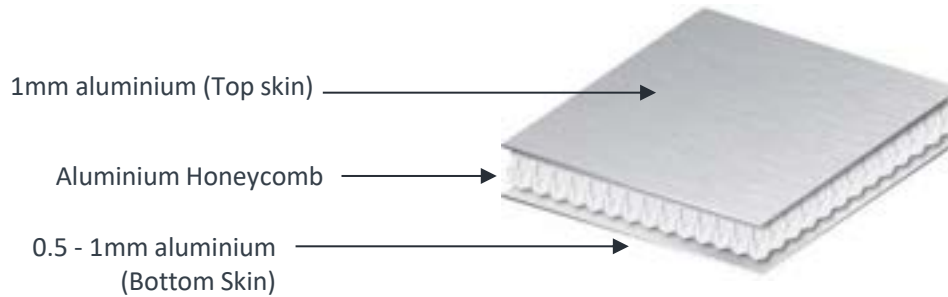
Fire Classification – ALUCOBOND® PLUS

Country	Test accord, to ...	Classification
Australia	AS ISO 9705 AS 1530.3 Indices EN 13501-1	Group 1 material SMOGR A 1.385 m ² / s ² 0 (ignitibility) 0 (flame spread) 0 (heat evolved) 0-1 (smoke development) B-s1, d0
China	GB 8624-2012	Class B1 (B-s1, d0, t0)
EU	EN 13501-1	Class B-s1, d0
Germany	EN 1187 (method 1) / DIN 4102-7	Passed
Great Britain England / Wales / Scotland	BS 476, Part 6 & 7 BR 135 BS 8414 part 1 & 2	Class 0 met the performance criteria Passed
Malaysia	BS 8414-1 BS 476, Part 6 BS 476, Part 7 Approved for outdoor wall cladding of any type of building without height limit	Passed Class 0 Class 1
Poland	PN-90/B-02867	NRO
Russia	GOST 30244-94 GOST 30402-95 GOST 12.1.044-89 GOST 12.1.044-89	G1 (combustibility) W1 (flammability) D1 (smoke development) T1 (toxicity)
Singapore	EN 13501-1 BS 476, Part 6&7 NFPA 285 Approved for outdoor wall cladding of any type of building without height limit	Class B, s1, d0 Passed Passed
Switzerland	VKF	RF2
UAE	NFPA 285 EN 13501-1 ASTM E84	Passed Class A2-s1, d0 Class A
USA	ASTM-E 84 NFPA 285	Class A Passed

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ALUCORE® (Aluminum Honeycomb Panel)

Aluminium honeycomb panel



- ALUCORE® is an innovative aluminium composite panel consisting of two aluminium cover sheets and a honeycomb core of aluminium
- It can be used for a wide variety of applications from the transport industry to architecture and has fantastic properties such as extraordinary flatness, high formability and a large range of colours
- The product's aluminium honeycomb core delivers extreme strength-to-weight ratio
- ALUCORE® therefore, has a definite advantage when it comes to projects with high demands on material stiffness – such as façade cladding or roofing where it is exposed to extremely high wind load, or for large self-supporting roofs



Roofing done by ALUCORE®

Product Range:

Thickness: 6, 10, 15, 20, 25 mm

Width: 1250 mm, 1500 mm

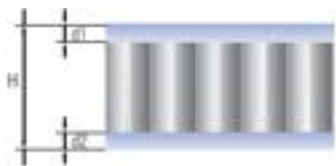
Length: 2500 mm, 5150 mm, 6250 mm

Technical Data

The system components of ALUCORE® are bonded in a continuous laminating process allowing larger panel sizes (upto 9 meters) maintaining superior flatness.



Standard Core consists of Aluminium.
Alloy foils (cell size: 10 ~ 19mm)



Structure

H: total thickness (from 6mm to 25mm)
d1: thickness of Al front sheet (1mm)
d2: thickness of Al back sheet (0.5/ 0.7/ 1mm)

Properties	Standard	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/m ²]	5.0 / 6.7 / 7.0 / 7.3
Technical Properties:			
Section Modulus W		[cm ³ /m]	4.5 / 13.1 / 18.1 / 23.1
Rigidity E I		[kNm ² /m]	21,900 / 75,500 / 138,900 / 221,600
Alloy of cover sheets	ASTM B209-04		3xxx / 5xxx
Temper of cover sheets	ASTM B209-04		H14 / H24
Modulus of Elasticity	ASTM E8	[N/mm ²]	70,000
Tensile Strength of Aluminium	ASTM E8	[N/mm ²]	R _m ≥ 125
0.2% Proof Stress	ASTM E8	[N/mm ²]	R _{0.2} ≥ 90
Elongation	ASTM E8	[%]	A ₅₀ ≥ 4
Linear Thermal Expansion	ASTM D696		2.4 mm / m at 100°C temperature difference
Core:			
Bare compressive strength		[N / mm ²]	0.4 ~ 1.0 approx.
Cell size		[mm]	10 ~ 19
Surface:			
Lacquering			Coil Coating Polyester coated / PVDF coating upon request As per the color shade HB ~ F
Gloss (initial value)	ASTM D523	[%]	
Pencil hardness	ASTM D3363		
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]	-30 to +80
Core Fire Properties:			
Fire Classification	BS 476, Part 4		Passes (non-combustible)
Environment & Health Aspects :			
:Environment Management System			- ISO 14001:2015
:Occupational Health and Safety Management System			- ISO 45001:2018
:Quality Management System			- ISO 9001:2015
Dimensional Tolerances:			
Panel thickness		[mm]	± 0.2 mm (up to 15mm) ± 0.3 mm (up to 25mm)
Thickness of coated skin		[mm]	± 0.05 mm
Weight		[kg/m ²]	± 5%

Specifications are subject to change without prior notice / intimation.

ALUCOLUX® - Solid Aluminium Sheets

Non Combustible A1 classification
according to EN 13501-1

2/3 mm solid aluminium
sheet



- ALUCOLUX® is a coil coated solid aluminium panel with A1-s0, d0 classification as per EN 13501-1 test standard
- To maintain high product quality, ALUCOLUX® gets continuous industrial-grade PVDF coating. This process helps maintain color consistency of the product and renders it non-combustible in compliance with the A1 classification
- All ALUCOBOND® surface finishes and colors are possible with ALUCOLUX®
- Unique patterns such as embossed wood finish or stone look are possible with ALUCOLUX®



Product Range:

Thickness: 3 mm

Width: 1000 mm, 1250 mm, 1500 mm

Length: </=6000 mm

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Technical Data

TECHNICAL PROPERTIES	STANDARDS	COIL-COATED
Alloy	EN 573-3	3003
Temper	EN 515	H24
Standard Thickness*	EN 485-4	3mm
Standard Widths**	EN 485-4	1000 mm, 1250 mm, 1500 mm, 1575 mm
Standard Length	EN 485-4	<= 6000mm
Panel Weight		8.1 Kg/m²
Tensile Strength	EN 485-2	145-185Mpa
Modulus of Elasticity	EN 485-5	70,000 N/mm²
Yield Strength Rp0.2	EN 485-2	>=115Mpa
Elongation	EN 485-2	A ₅₀ >=6%
Linear Expansion	EN 1999 1-1	2.4mm/m at 100°C temperature difference
Surface		PVDF/FEVE
Gloss	EN 13523-2	25-40%
Coating Thickness ***		28-45 microns
Fire Classification	EN 13501-1 AS 3837 AS 1530.3	A1-s0, d0 Group 1 as per AS 5637.1 PASSED 0 (ignitability) 0 (flame spread) 0 (heat evolved) 2 (smoke development) PASSED
	AS 1530.1	

- * Other thicknesses available on request.
 ** Custom widths available on request.
 *** Coating thicknesses varies for different surface finishes.

- Coating process confirms to AAMA 2605 and ECCA guidelines.
- ALUCOLUX® comes in 5xxx or 3xxx series alloy.
- 15 years warranty

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ALUCOLUX® | Timberly Road, Auckland New Zealand

Value Added Services

At ALUCOBOND® we have always tried to offer a whole solution to our customers apart from just world-class products

i) ALUCOBOND® Panel Optimization:

- Panel Optimization is a process of computing the maximum panel utilization for a given facade elevation / design / layout by a specially designed software
- This program calculates the most efficient layout with accuracy in a short time as compared to the traditional manual method
- In our experience, by using this program wastages have been brought down to around 3-5% in most cases thereby saving huge costs for our customers

ii) ALUCOBOND® Perforation

- ALUCOBOND® also offers perforation service, where custom designs are realized according to each project's requirement. Skillful workmanship of ALUCOBOND® coupled with years of expertise ensures warrantable high-quality output

Cukrarna Gallery, Slovenia



Perth Arena, Perth, Australia

Value Added Services

iii) ALUCOBOND® Made to Measure (M2M) Panels:

- To meet customer's specific requirements we also manufacture tailor-made panels which are cut-to-size, routed, drilled, and notched at the factory's production level. This helps in high quality fabrication



Banyan Tree Residences, Bangkok, Thailand

ACM Processing



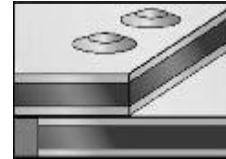
Drilling



Sawing



Bending



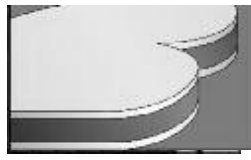
Riveting / Screwing



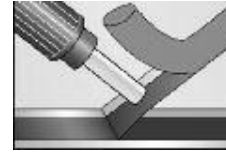
Routing & Folding technique



Punching



Contour cutting



Welding



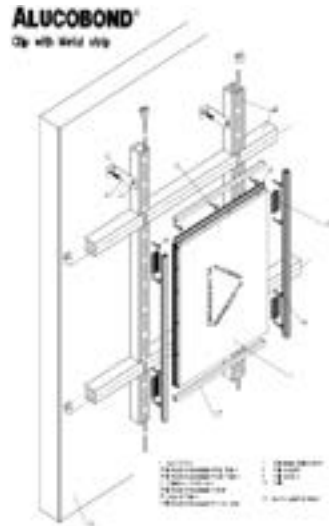
Laminating



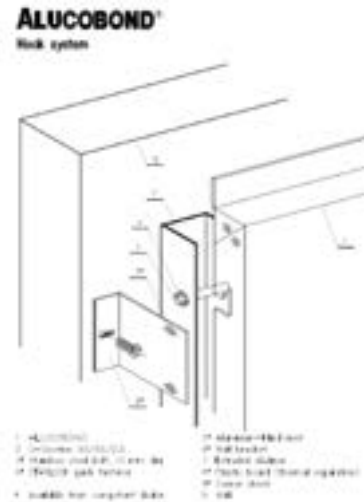
CNC Processing

Commonly Used Fixing Systems - Wall cladding

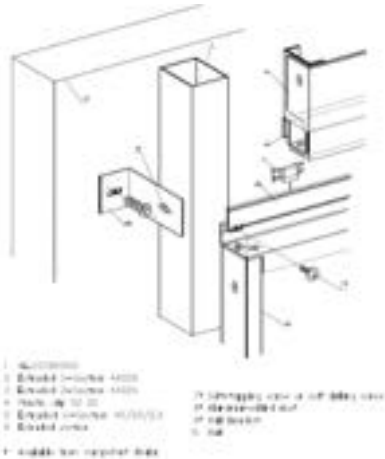
Tray panel



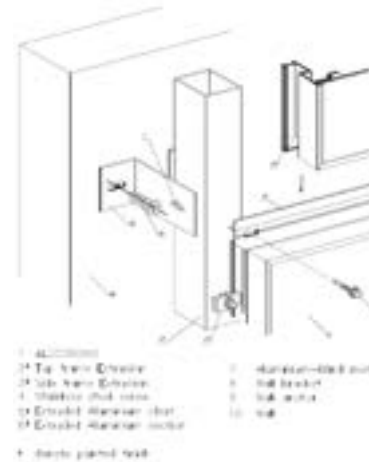
Hook-on



SZ 20



Frame 90

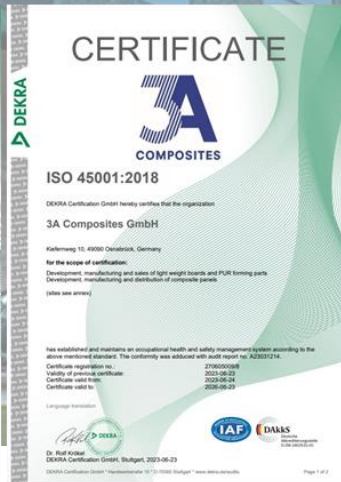
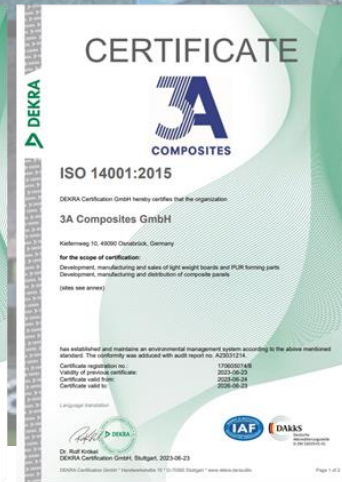


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SUSTAINABILITY

Sustainability at 3A Composites

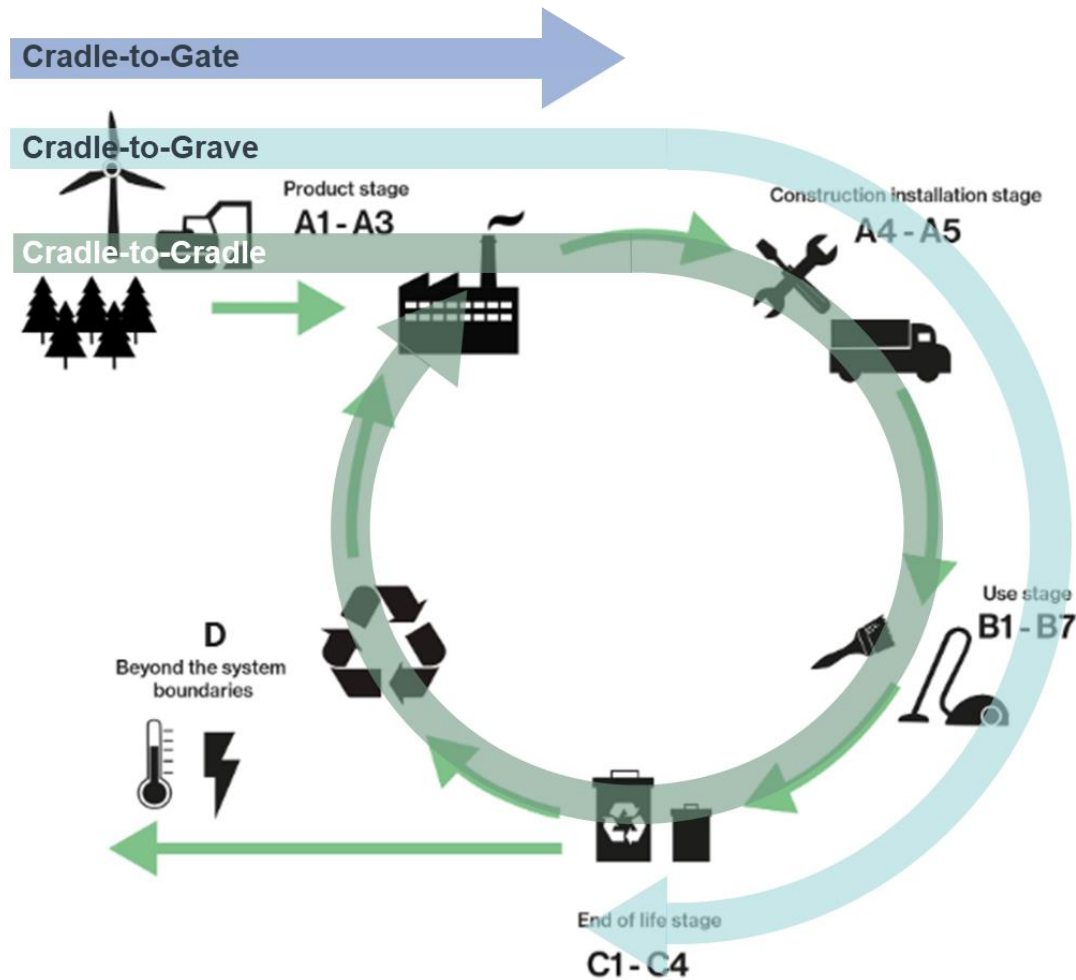
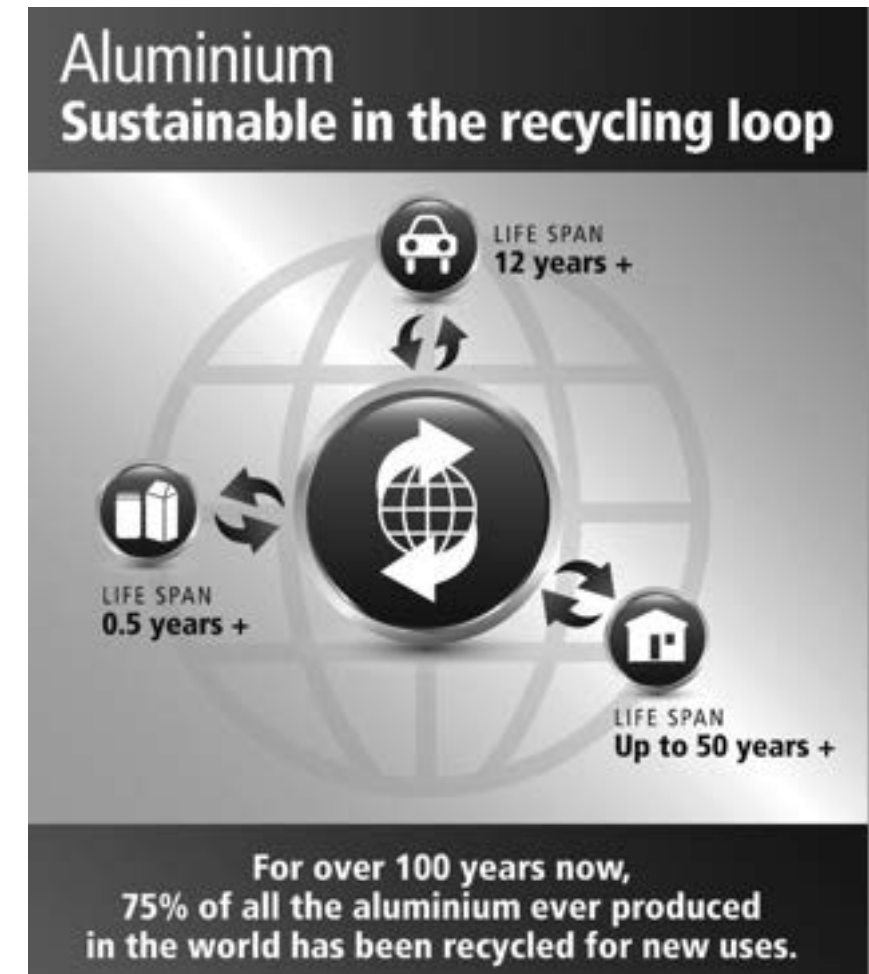
Sustainable Growth

QUALITY MANAGEMENT	HEALTH&SAFETY MANAGEMENT	ENVIRONMENTAL MANAGEMENT	ENERGY MANAGEMENT
since 1993	since 2003	since 2002	since 2013
			

Inventor of Aluminium Composite Panel, >50 years of experience

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Measuring Sustainability: Environmental Product Declaration



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Project Examples

Changi airport, Singapore



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Kuala Lumpur airport, Malaysia



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Chennai (Madras) airport, India



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Dublin airport, Ireland



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Marrakesh airport, Morocco



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Porsche Centre, Dortmund, Germany



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Uppasala Concert and Congress Hall, Sweden



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Bengbu Olympic Stadium, China



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Riyadh Front, Saudi Arabia



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Lodha World Crest, India



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Te Oro Community and Arts Centre, New Zealand



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Windsor Grand, India



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Lucerne Art and Congress Hall, Switzerland



Roofing done with ALUCORE®



Lighthouse Apartment, Australia



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KNPC Fuel Station, Kuwait



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NIIT, India



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HSBC headquarters (Foyer), Sydney, Australia



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Tran Duy Hung Middle School, Vietnam



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Our Domain, Netherlands



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Icon Siam Mall, Thailand



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Cukrarna Gallery, Slovenia



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Pandit Dindayal Upadhyay Indoor Stadium, India



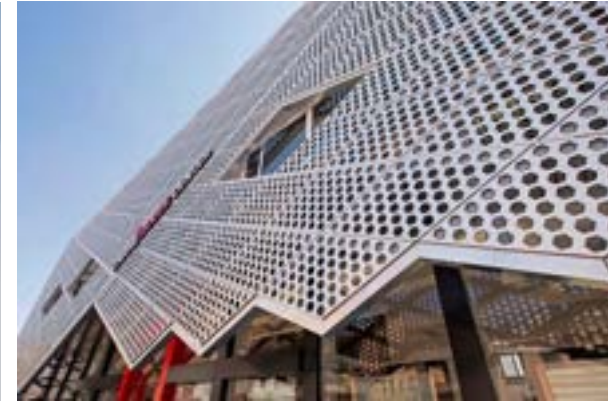
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Euronics - Germany



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Carre Rouge Center, Lebanon



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Danang airport, Vietnam



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Paras Trinity, India



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Exo Apartments, US



CONFIDENTIAL



Purple Rain, Austria



CONFIDENTIAL

Butterfly House, Singapore



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END