



Alam-Con Sdn Bhd

PRODUCT CATALOG





THE BEST BUILDING SYSTEM FOR GREEN AND SUSTAINABLE CONSTRUCTION

Autoclaved Aerated Concrete (AAC) block is the flagship product of Alam-Con Sdn. Bhd, which has been auspiciously known in the market as ACON Blocks. The technological breakthrough in this product offers numerous advantages to the construction works.

This is a very significant milestone that would transform the conventional construction method into a leading technology towards achieving sustainable goals in construction. The sophisticated autoclaved technology synergizes with optimize mix proportions of the raw materials enable the ACON Blocks to exhibit excellent engineering properties as in the clay brick at one fifth of its density and yet, at a very competitive price.

All these results are the meticulous efforts over the years by the founder of Alam-Con Sdn. Bhd. and his team as well as their expert research team which serve as their strong backbone.

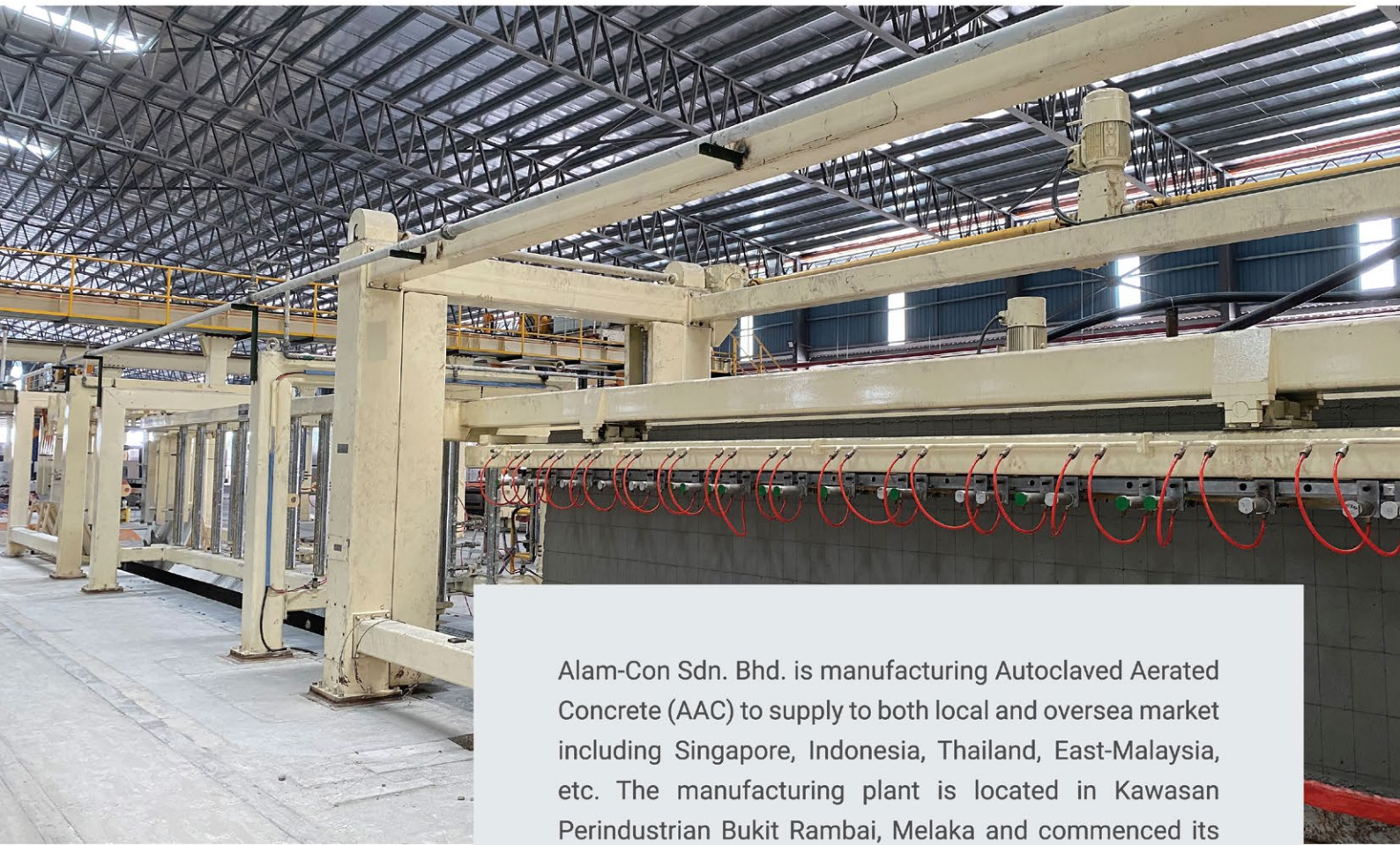
Our Slogan, Providing The Best Building System.





TABLES OF CONTENTS

PAGES	01	HISTORY OF ALAM-CON
PAGES	02	MANUFACTURING PROCESS
PAGES	03	AUTOCLAVED AERATED CONCRETE
PAGES	05	TECHNICAL DATA COMPARISON
PAGES	06	BENEFITS OF AAC BLOCK
PAGES	07	ACCESSORIES & TOOLS
PAGES	08	OUR PRODUCTS
PAGES	10	PROJECT REFERENCE



HISTORY OF ALAM-CON

Alam-Con Sdn. Bhd. is manufacturing Autoclaved Aerated Concrete (AAC) to supply to both local and overseas market including Singapore, Indonesia, Thailand, East-Malaysia, etc. The manufacturing plant is located in Kawasan Perindustrian Bukit Rambai, Melaka and commenced its first production in early January 2012.

The factory, which is built on a 5.92 acres land, has a capacity to produce 100,000m³ of AAC blocks annually. With the increasing local demand, Alam-Con Sdn. Bhd. invested a new factory in Kampung Kepayang, Ipoh in the year 2017 to triple up their production capacity to 300,000m³ annually. The new factory is fully automated and hence, the multi millions revenue is efficiently operating by 50 workers including the management team. The AAC blocks have various sizes; 600mm (L) x 200mm (W) x 100mm ~ 200mm (H) at every 25mm interval. Detached houses, link houses, high rise residencies from medium to high cost, low rise commercial projects e.g. hotels, shop lots, offices, schools, hospitals, industrial buildings are the major target.



MANUFACTURING PROCESS



01

BATCHING

Raw materials consist of lime, cement, gypsum and aluminium paste are mixed with sand and water. The raw materials are dosed into the mixer at multiple stages as programmed in the batching system to ensure the highest uniformity.



02

PRE-CURING

The uniformly mixed materials will be poured into the casting moulds transported to the pre-hardening area. The duration is in the range of 2.5 to 4 hours.



03

CUTTING

The semi-hardened mixture will be removed from the moulds and transported to the cutting machine. The machine cuts the precured mixture using high tensile cutting wires precisely.



04

AUTOCLAVING

The semi-finished products will be transported to the autoclaved curing chamber and cured with pressurized steam at temperature of $190 \pm 2^{\circ}\text{C}$ for 10 – 12 hours.



05

FINISHED PRODUCT

The finished products will be removed from the autoclaved chamber and checked by the QC officer. The finished products would then be packed into pallet form.



AUTOCLAVED AERATED CONCRETE (AAC BLOCK)

Autoclaved Aerated Concrete (AAC) and also known as Autoclaved Lightweight Concrete (ALC), is gaining its popularity in the building and constructions industries in Malaysia. The finished product is only one fifth the weight of regular concrete and has good insulation, acoustic and fire resistance properties. Alam-Con AAC is designed for walls applications and is available in various sizes for different requirements.

AAC BLOCK COVERAGE

Length (mm) x Height (mm)		600 x 200					
Thickness (mm)		50	75	100	125	150	200
No. of blocks per pallet (No.)		360	240	180	144	120	96
Area of coverage per pallet (m ²)		43.2	28.8	21.6	17.3	14.4	11.53
Nominal Weight (kg) per block:	A3	3.6	5.4	7.2	9.0	10.8	14.4
	A5	4.2	6.3	8.4	10.5	12.6	16.8
	A7	5.1	7.6	10.2	12.8	15.3	20.4
Installation rate (m ² / man-day)		20.2 ~ 23.5					

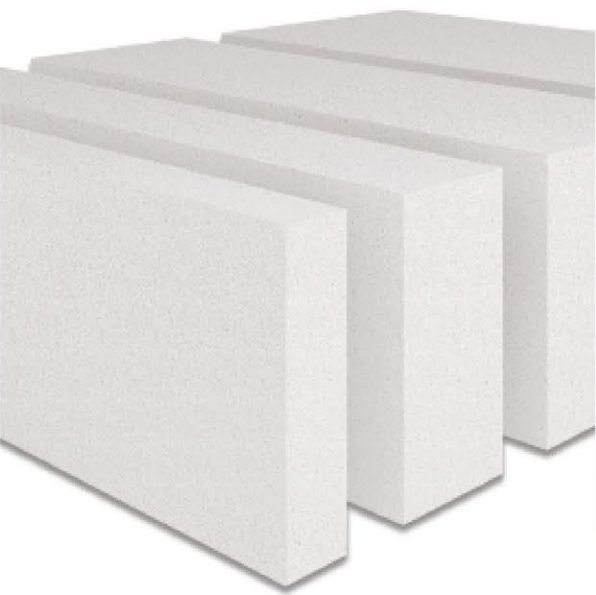
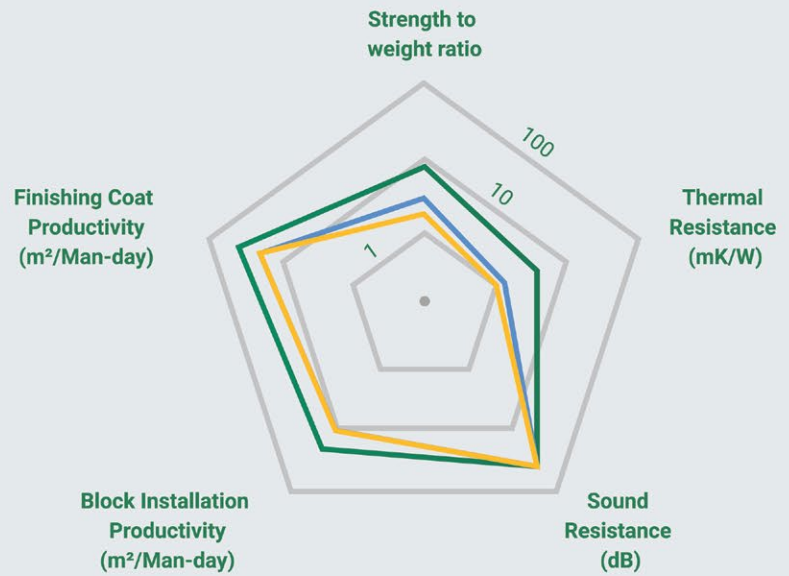
Our Certificate



TECHNICAL DATA COMPARISON

Performance comparisons between ACON blocks, clay bricks and cement sand bricks.

- AAC Block
- Clay Bricks
- Cement Sand Bricks



TECHNICAL DATA

NEW

Properties	A3	A5	A7
Compressive Strength (MPa)	> 3.0	> 5.0	> 7.0
Dry Density (kg/m³)	550 ± 50	650 ± 50	800 ± 50
Working Density (kg/m³)	700 ± 50	850 ± 50	900 ± 50
Dimension (L x H x T)	600 mm x 200 mm x 100 ~ 200mm		
Dimensional Tolerance	± 2 mm		
Fire Resistance (Hours)	4 Hours		
Thermal Conductivity (W/mK)	0.17 - 0.24		

TECHNICAL DATA COMPARISON

Type of Blocks	AAC Block	Conventional Bricks
Foundation & Structure Cost	<p>Dead Load 0.95 – 1.00 kN/m</p> <p>Save up to 20% as the dead load of wall is reduced by 60 – 65%.</p>	<p>Dead Load 2.6 kN/m</p>
Installation Speed	<p>Approximate 22 m²/ Man-day</p> <p>2.2 times faster than conventional brickworks.</p>	<p>Approximate 10 m²/ Man-day</p>
Finishing Coat	<p>Internal Wall Skim Coat</p> <ul style="list-style-type: none"> • Approx. 72 m²/ Man-day • 5 - 6mm thk • 1.2 kg/m²/mm 	<p>Normal plastering mortar for both internal and external wall</p> <ul style="list-style-type: none"> • Approx. 18 - 20 m²/ Man-day • 20 - 30 mm thk
Mortar Joint	<p>Thin Bed Adhesive</p> <ul style="list-style-type: none"> • Excellent quality control on cement-sand ratio in factory production. • 65% lesser joint due to larger block size • 60% reduction in mortar usage with dry mix technology. 	<p>Conventional site mix mortar without appropriate control on cement-sand ratio.</p>
Alignment & Verticality Control	<p>Excellent</p> <p>Larger block size and workable thin bed adhesive has better control over alignment and verticality.</p>	<p>Medium</p> <p>Greatly depending on the workers' workmanship.</p>
Transportation	<p>A full load trailer carries 18 pallets, 1.5 ton per pallet, equivalent to 27 ton per trip</p> <p>Approx. 32% saving on transport weight</p> <p>In term of coverage, 1 pallet covers 21.6 m², equivalent 388 m² per trip</p> <p>Approx. 72% larger coverage than conventional bricks</p>	<p>A full load trailer carries 22 pallets, 1.8 ton per pallet, equivalent 39.6 ton per trip</p> <p>1 pallet covers 10 m², equivalent 220 m² per trip</p>

BENEFITS



DURABILITY

It will not corrode, rust or decompose. AAC has been used in many countries around the world for more than 60 years.



COST SAVING

With lower density and larger dimension, it can reduce the building dead load and subsequently on the foundation and structure cost as well as labour cost.



ENVIRONMENT FRIENDLY

The manufacturing process produces no hazardous by products. The waste materials will be recycling into the manufacturing process.



FIRE RESISTANT

100mm thickness can achieve 4 hours fire rating which is the highest rating thus far compare to concrete or brickwork.



SPEED & WORKABILITY

Larger & lighter products enhance workers' productivity during the construction. ACON block can be easily sawn, cut, carved, nailed or drilled too!



ENERGY SAVING

The excellent thermal insulation properties possess by the ACON blocks significantly reduce the cooling load of the indoor ventilation system.



SOUND INSULATION

The solid wall by ACON blocks reduces 35 – 50 dB of sound intensity due to its low-density properties.



VERSATILE

ACON blocks can be used for load bearing and non-load bearing wall applications.



IMPACT RESISTANCE

Air voids in the ACON blocks has great energy absorption capability. 100 mm thick ACON block wall achieves "Severe Duty" grade.



GREAT VENTILATION

The block is "airy". Moisture can be absorbed and released easily from blocks to regulate the indoor temperature.

ACCESSORIES AND TOOLS



Wall Plug



Trowel



Fiber Mesh



AAC Handsaw



Rubber Hammer



L-Bracket



Spirit Level



Stirrer



Wall Trencher



THIN BED ADHESIVE

ACON THIN BED ADHESIVE is a high quality water resistant premixed mortar. For the laying of *Autoclaved Lightweight Concrete (ALC)* Blocks. It is Specially formulated for filling of vertical and horizontal joint for ALC wall system.

TECHNICAL DATA

Color	Grey
Binder	Cement
Filler	Graded Limestone Powder / Sand
Aggregate Size	1 mm max
Additives	Water soluble additives to improve workability, open time, bond strength, etc.
Density	1.4 kg/ litre (dry) : 2.0 kg/ litre (wet)
Pot Life	1-2 Hours
Coat Thickness	2-3mm per coat
Consumption	Approx. 19 m ² / 40kg bag for 600 x 200 x 100mm thk AAC Block Wall.
Water Demand	Approx. 13-14 litres / 40 kg bag

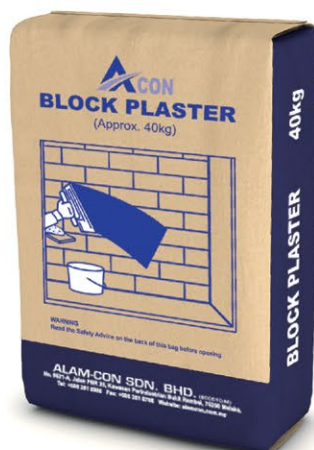


ALC RENDER

ACON ALC RENDER is a high quality cement-based render specially developed for application on external ALC wall surfaces. ACON ALC RENDER can also be used for patching works on ALC walls prior to rendering. It is intended to replace conventional cement-sand render. Rendered surface can be sponge-finished. Various finished can be applied on the rendered wall.

TECHNICAL DATA

Color	Grey
Binder	Cement
Filler	Graded Limestone Powder / Sand
Aggregate Size	2 mm max
Additives	Water soluble additives to improve consistency, workability, water retention and adhesion
Density	1.3 kg/ litre (dry) :1.5 kg/ litre (wet)
Pot Life	Approx. 2 hours
Coat Thickness	10 - 12 mm per coat
Consumption	Approx. 1.6 kg/m ² /mm thk. 2.5 m ² / 40kg bag at 10mm thk.
Water Demand	Approx. 7 - 8 litres/ 40 kg bag



BLOCK PLASTER

ACON BLOCK PLASTER is high quality water resistant premixed plaster. Wall surface that has been levelled with BLOCK PLASTER can be smoothed with finish and painted or wall-papered. Ceramic tiles can be fixed on BLOCK PLASTER surface. BLOCK PLASTER should not be used on painted surfaces.

TECHNICAL DATA

Color	Grey
Binder	Cement
Filler	Graded Limestone Powder / Sand
Aggregate Size	1 mm max
Additives	Water soluble additives to improve consistency, workability, water retention and adhesion
Density	1.3 kg/ litre (dry) :1.5 kg/ litre (wet)
Pot Life	Approx. 2 hours
Coat Thickness	2 - 4 mm per coat
Consumption	Approx. 1.4 kg/m ² /mm thk. 10 m ² / 40kg bag at 3mm thk.
Water Demand	Approx. 11 - 12 litres / 40 kg bag



SKIM COAT FINISH

ACON FINISH is high quality water resistant cement-based thin plaster for finishing walls and ceilings. FINISH can be used on Base, Block, Plaster, concrete and rendered surfaces. A harden plastered surface can be painted or wall-papered. Ceramic tiles can be fixed on the FINISH surface. FINISH should not be used on painted surfaces. Skim Coat Base is Cement-based plaster for ALC/Block wall in dry or wet interior and exterior.

TECHNICAL DATA

Color	Grey and White
Binder	Cement
Filler	Limestone Powder
Aggregate Size	0.1 mm max
Additives	Water soluble additives to improve consistency, workability, water retention and adhesion
Density	1.3 kg/ litre (dry) :1.5 kg/ litre (wet)
Pot Life	Approx. 3 hours
Coat Thickness	1-2mm per coat
Consumption	Approx. 1.2 kg/m ² /mm thk. 20 m ² / 25kg bag at 1mm thk.
Water Demand	Approx. 11.25 – 11.75 litres / 25 kg bag

Alam-Con Sdn Bhd

OUR PROJECTS

Many projects have been completed with ACON blocks since 2012 in a wide range of building applications; walls, floors, roofs, shaft walls, sound walls, privacy fences, and mining applications.

The superior performance in terms of fire rating, thermal and acoustic insulation, high strength-to-weight ratio, workability, environment friendly, cost saving, etc. make it becomes an excellent product for building schools, hotels, dormitories, commercial structures, industrial and many more.



Project Title:

Vervea @ Aspen Vision City
Batu Kawan, Penang

Contractor:

Pro Tech Enterprise Sdn Bhd



Project Title:

American International School
Forest City, Johor

Contractor:

Teng Yue Overseas Contruction Sdn Bhd



Project Title:

Genting Highlands

Pahang Darul Makmur

Contractor:

Bluebros E&C Sdn Bhd



Project Title:

Hospital Raja Permaisuri Bainun (HRPB)

Ipoh, Perak

Contractor:

Kamalbina Sdn Bhd



Project Title:

Scientex @ Durian

Tunggul, Melaka

Contractor:

KC Contract Sdn Bhd



Project Title:

Hotel Hibiscus

Port Dickson, Negeri Sembilan

Contractor:

Ragawang Corporation Sdn Bhd



Project Title:

JKR @ Kem Terendak

Melaka

Contractor:

QSE Construction Sdn Bhd



Project Title:

Rembau Hospital

Seremban

Contractor:

Multiglow Corporation Sdn Bhd

ALAM-CON SDN BHD

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Lot 4209, Kawasan Perindustrian Padang Meha,
09410 Kulim, Kedah.
Tel: 017-745 0100

KL Office (Marketing)

Block A-1-07,
Jalan Pandan Indah 8,
Taman Pandan Mas,
55100, Ampang, Kuala Lumpur
Tel: 017-764 5933

Melaka Office (Factory)

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Kawasan Perindustrian Bukit Rambai,
75250, Melaka

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