STÄRKEN®
Delivering World-Class Lightweight Solutions

STÄRKEN®

Autoclaved Aerated Concrete

Product Guide

STÄRKEN®
Delivering World-Class Lightweight Solutions

STÄRKEN Philippines, Inc.

Show Room Office:
Unit 2601 26th Floor
AIC Burgundy Empire Tower
ADB Ave. Brgy. San Antonio
Pasig, Philippines

Telephone: (02) 8371-6648 / (0928) 695 8545
Email: info@starkenph.com

STÄRKEN Philippines
@starkenph
STÄRKEN Philippines
www.starken.com.ph
STÄRKEN Philippines

Table of Contents

Advantages of STÄRKEN AAC	3 - 4
Cost - saving Benefits	5
Production Process	6
Where to Apply STÄRKEN AAC?	7 - 8
Sustainability	9
Standard Blocks	10
Wall Panels	11
Lintel Beams	12
Thin Bed Adhesive	13
Render & Skim Coat	14
Tools & Accessories	15 - 16
The STARKEN Process	17
Installation Method	18

Delivering Quality Sustainable Building Solutions

STÄRKEN is the leading AAC (Autoclaved Aerated Concrete) manufacturer and supplier in Southeast Asia that aims to deliver quality products to its customers. With its commitment to quality products & services, STÄRKEN Philippines invested in the state-of-the-art machineries and technology supplied by Wehrhahn of Germany.

Situated at Serendah, Selangor. STÄRKEN's production facilities manufactures blocks efficiently and engineered panels cost-effectively with an annual capacity of 600,000 cubic meters. It covers a wide range of AAC products with superior compressive strengths to cater specific architectural and design requirements of various types of buildings. STARKEN's main products include AAC blocks, wall panels and lintel beams with a density of 450 kg/m^3 – 700 kg/m^3.

Commitment to Excellence

STÄRKEN prides itself on maintaining the highest level of customer service and support. Every member of STÄRKEN is committed to both excellence in customer service and the production of quality building materials.

At STÄRKEN, we listen very carefully to our customers' needs and concerns. We ensure that our customers receive better value and excellent product performance through our expertise, knowledge and experience in assisting them in all areas of their construction related needs on AAC products.

The Advantages of STÄRKEN AAC

High Compressive Strength
STÄRKEN AAC blocks were tested with a compressive strength of up to 1040 PSI and Passed.

Water Resistant
STÄRKEN AAC contains millions of closed microscopic cells which strongly resist moisture from passing through.

Strong & Durable
History of usage dated more than 50 years protecting building envelopes and remain durable even under extreme weather conditions.

Savings Through Value Engineering
The factors of quality, cost, and time saves building structure costs long term.

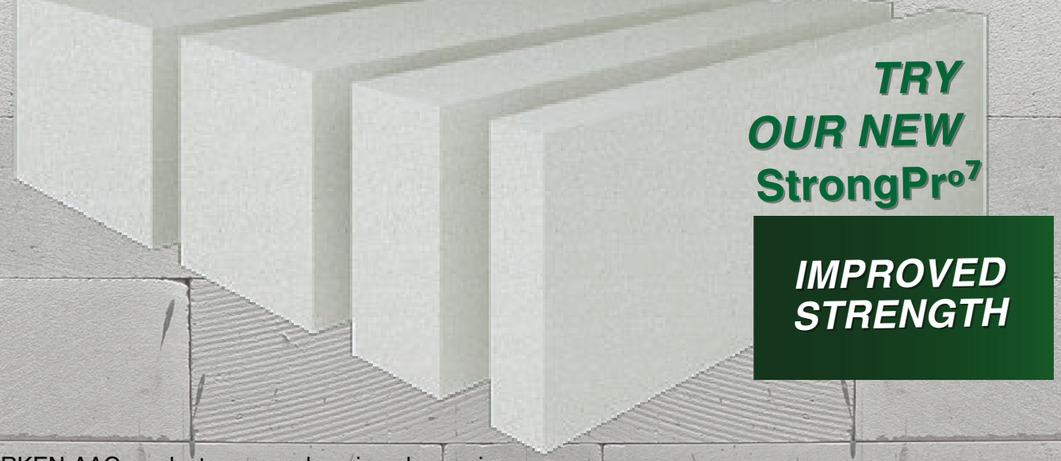
Earthquake Resistant
The STÄRKEN AAC Wall System is tested in the Philippines against strong earthquakes of up to 7.4 seismic magnitude.

Excellent Workability
STÄRKEN AAC can be easily sawn, cut, carved, nailed or drilled using ordinary hand tools.

Environment friendly
STÄRKEN AAC to help reduce at least 30% of environmental waste, decrease 50% of greenhouse radiation and over 60% integrated energy on the surface of block.

STÄRKEN AAC products are made using slurry mix containing cement, sand, lime and aerating agent. The slurry is poured and moulded to form lightweight blocks, panels and lintels upon which are cured in autoclave. The high-pressure steam-curing mechanism in the autoclave facilitates the curing process of the moulded lightweight concrete, producing physically and chemically stable products that weigh about 1/5 of normal concrete. AAC products contain millions of tiny non-connecting air pockets yielding superior thermal insulation property. AAC products are typically installed to form walls, floors and roofs.

STÄRKEN AAC products are becoming the preferred building products for constructing residential, hotel, industrial and public buildings because of its natural composition, non-toxic properties, energy saving capabilities and its environmental friendliness. AAC products possess the durability characteristics similar to normal concrete or stone, yet with workability better than wood.



TRY OUR NEW StrongPro⁷

IMPROVED STRENGTH

Incredibly Light
STÄRKEN AAC's density is about 1/3 of normal concrete blocks, making it easy to handle

Excellent Thermal Insulation & Energy Savings
STÄRKEN AAC's excellent thermal insulation properties result in improved comfort levels and save heating and cooling costs.

Less Hauling & Cleaning
The STÄRKEN AAC wall system involves less hauling, cleaning, and safer workspaces, which lessens delays from on-site accidents.

Faster Construction
Construction time is cut in half with STÄRKEN AAC wall system.

Superior Fire Rating
More superior than traditional masonry products with a fire resistance of up to 4 hours for a nominal block thickness of 100mm.

Superb Sound Reduction
Scientifically proven to provide better insulation to sound transmitted by air compared with other solid building materials

Cost-Efficient Construction
Savings due to less, materials, less manpower, less waterproofing, sound insulation and more.

Cost-saving Benefits

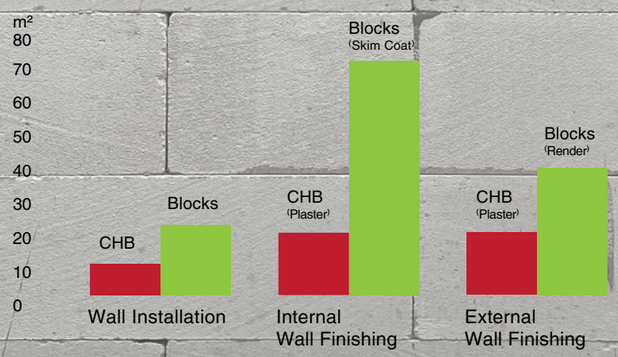
1 Save up to 25% of Foundation Cost

CHB vs AAC Block (30 Storey Building)



2 Wall Installation Speed

AAC Block vs CHB (m²/ worker/ day)



3 Thermal Control

Heat insulation 6 times superior than CHB



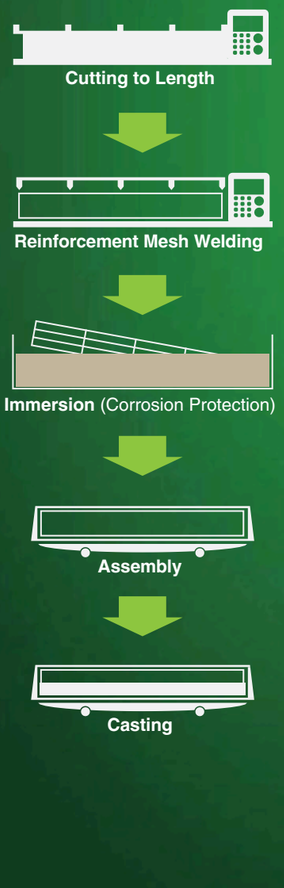
8" AAC Wall

Note : Building uses approximately 30% less energy for cooling and heating the interior air space.

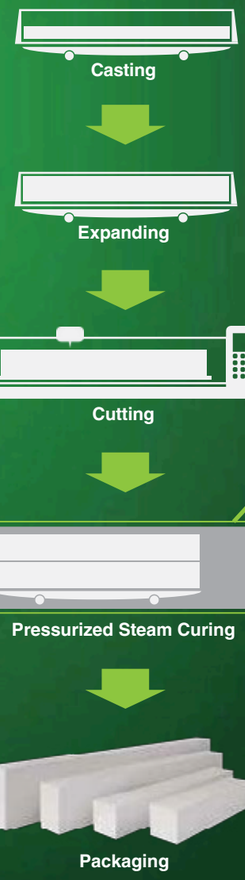
Production Process



Reinforced AAC



Non-reinforced AAC



STÄRKEN AAC Building System

WHERE TO APPLY STÄRKEN PRODUCTS?

STÄRKEN AAC is ideal for load-bearing and non-load bearing applications. In addition, it is suitable for various types of buildings such as:

- **Residential Units**
- **Commercial Units**
- **Hospitals**
- **Factories / Warehouses**
- **Schools / Universities**
- **Hotels**
- **Shopping Malls**
- **Mass Housing Project**



Green Label Singapore · AITECH Accredited · Member · TUV Certified · ASTM International · ISO Certified

Sustainability

STÄRKEN AAC is a sustainable material and contains up to 20% of recycled materials. It provides long life span and is also recyclable, making it an exceptional green building material.

Design

STÄRKEN AAC products are manufactured in standard sizes for ease of installation and compliance to Industrialized Building System (IBS) requirement.

Manufacturing & Delivery

STÄRKEN AAC production incorporates recycled materials and employs strict waste minimization while the transport fleets use less fuel (energy) to deliver goods to job sites.

Construction

STÄRKEN AAC products have better dimensional tolerances, and can be cut easily and accurately. Consequently, superior finishing on completed walls meeting CIDB's QLASSIC requirement can be achieved. Available in sizes larger than conventional bricks/blocks, STÄRKEN AAC products can be erected up to 3 times faster than CHB wall.

Use

STÄRKEN AAC products are not only lightweight technology but also provide high performance features such as thermal comfort, energy saving, high impact, water and fire resistance.

End of Life

STÄRKEN AAC blocks are fully applicable for recycling to create new construction materials. Building made of AAC can be altered easily according to specifications to avoid the hassle of demolishing & rebuilding.

Standard Block



Durapro5

S5 AAC BLOCK

Applications

- General internal & external walls
- Party, compartment & separating walls
- Acoustic & fire-rated walls

Working Dimensions: Length x Height (mm)

Blocks are available in 600 x 200

STÄRKEN Standard Blocks offer a fast, convenient and versatile solution for most walling requirements. One square meter of wall is equivalent to 8.33 pieces of blocks.

DuraPro5	StrongPro7	Properties:
Compressive Strength: **5.5 MPa**	Compressive Strength: **7.0 MPa**	Modulus of Elasticity: **1,500 - 2,500 MPa**
Thermal Conductivity: **0.244 W/m.K**	Nominal Dry Density: **650 ± 50 kg/m³**	Ultimate Tensile Strength: **0.44 - 0.55 MPa**
Nominal Dry Density: **600 ± 50 kg/m³**	Working Density: **910 ± 50 kg/m³**	Modulus of Rupture: **0.44 - 0.55 MPa**
Working Density: **840 ± 50 kg/m³**		

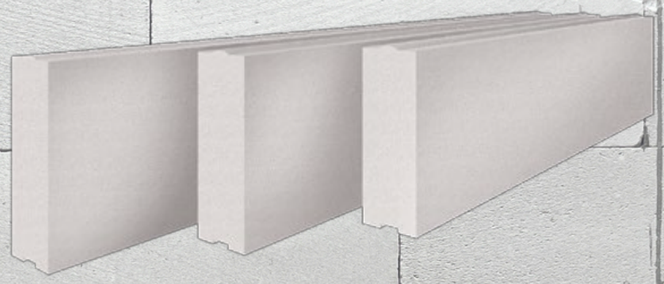
Packaging:

Length x Height (mm)	Thickness (mm)	Quantity per pallet	Coverage per pallet m²	m³
600 x 200	50	360	43.2	2.2
	75	240	28.8	2.2
	100	150	18	1.8
	125	120	14.4	1.8
	150	100	12	1.8
	175	96	11.5	2
	200	70	8.4	1.68
	225	72	8.6	1.9
	250	60	7.2	1.8
	300	60	7.2	2.2

Length x Height (mm)	Thickness (mm)	Quantity per pallet	Coverage per pallet m²	m³
600 x 200	50	360	43.2	2.2
	75	240	28.8	2.2
	100	180	21.6	2.2
	125	144	17.3	2.2
	150	120	14.4	2.2
	175	96	11.5	2
	200	84	10.1	2
	225	72	8.6	1.9
	250	72	8.6	2.2
	300	60	7.2	2.2

Note :
1. The above information may subject to change.
2. Do not use the above information for calculating the transportation weight and volume.

Wall Panels



Building with STÄRKEN AAC Wall Panels is simple, efficient and cost effective. STÄRKEN's wide range of panel sizes yield smart savings of time and money.

STÄRKEN AAC Panels also contribute to the building's safety as fire protection. Fire tests according to current standards have proven that STÄRKEN AAC Wall Panels can withstand a fire up to 6 hours.

Additionally, each wall panel is reinforced with corrosion-protected and fully welded steel cage. STÄRKEN AAC Wall Panels are available up to 6m in length.

Compressive Strength: 3**.5 MPa**
Thermal Conductivity: **0.172 W/m.K**
Dry Density: **Dry 550 kg/m³**
Working Density: 780 - 820 **kg/m³**

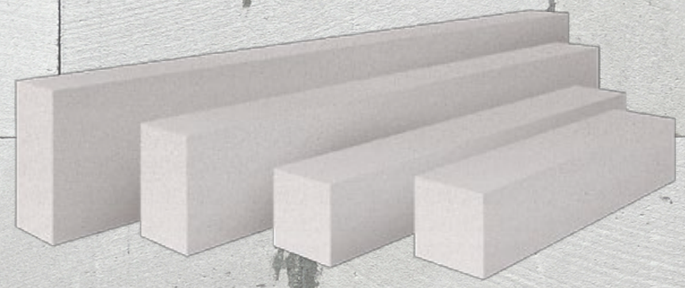
Properties:
Modulus Elasticity: 2,190 MPa

Wall Panel Summary:

Length (mm)	Height (mm)	Thickness (mm)	General Usage
3,600	600	75, 100, 125, 150, 175, 200	All wall panels are applicable for infill walls & load-bearing walls

STÄRKEN Reinforced AAC Wall Panels are available in various edge profiles such as standard square, chamfered, tongue and groove or a combination of any of these edge profiles. Panel installation incorporates special brackets secured to structural members such as beams/ columns/ slabs to provide wall lateral stability.

Lintel Beams



STÄRKEN AAC Lintels are reinforced elements similar to panels. They are used as support over windows, doorways and other openings.

Lintels are available in standard block thickness of 100mm, 125mm, 150mm and 200m and lengths up to 3,600mm.

They are also used as spreaders under the end supports of reinforced concrete beams to distribute high bearing stresses into the supporting AAC wall.

Compressive Strength: 3**.5 MPa**
Thermal Conductivity: **0.172 W/m.K**
Dry Density: **Dry 550 kg/m³**
Working Density: 780 - 820 **kg/m³**

Properties:
Modulus Elasticity: 2,190 MPa

Lintel Beam Summary:

Length (mm)	Height (mm)	Thickness (mm)
3,600	200	100, 125, 150, 200
3,600	300	100, 125, 150, 200

Thin Bed Adhesive



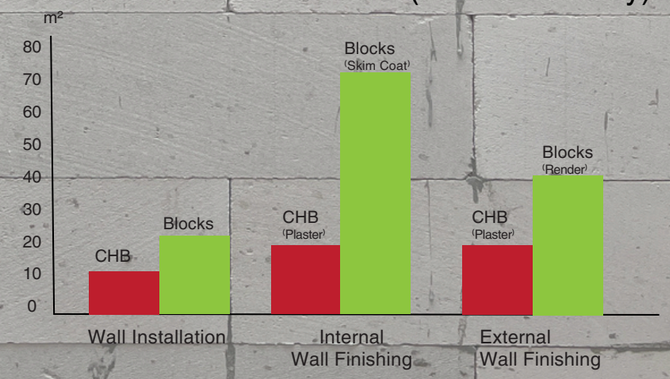
Packaging	40 kg bag
Colour	Light Grey / Off White
Mixing Ratio	13 - 14 liters of clean water / 40kg bag
Open Time	4 hours
Coverage	Approx. 15-18 m² / 40 kg for 100mm blockwork (Estimated based on 2mm thick bedding for 100mm blocks)
Fire Hazard	Non - Flammable
Toxicity	Nil
Min. Flexural Strength	0.44 MPa
Fire Rating	Up to 4 hours when used with STARKEN AAC blocks

STÄRKEN AAC Thin Bed Adhesive is a high-quality cementitious adhesive specially formulated and recommended for bonding STÄRKEN AAC products such as blocks, panels and lintels. Backed by extensive testing and historical performance, the use of STÄRKEN's adhesive ensures optimum performance of the completed assembly, including strength and fire rating.

Wall Installation Speed

Thin Bed Adhesive vs. General Purpose Mortar (m²/ hour)

AAC Block vs CHB (m²/ worker/ day)



Render & Skim Coat



STÄRKEN AAC Render is recommended for external rendering of an external wall, it can also be applied to AAC block wall where a thicker plastering is needed such as wall thickening for tiling purpose.

STÄRKEN Skim Coat Base & Skim Coat Finish are applied as a two-coat system and designed for internal wall applications to give a smooth finish.

Technical Data:

Render	Render	Skim Coat Base	Skim Coat Finish
Packaging	40kg bag	40kg bag	25kg bag
Color	Gray	Gray	Gray
Mixing Ratio	7-8 liters water / 40kg bag	11-12 liters water / 40 kg bag	11-12 liters water / 40 kg bag
Pot Life	2 hour	2 hours	3 hours
Coat Thickness	3 - 5 mm	2 - 3 mm	1 - 2 mm
Coverage Approx.	2kg / m² / mm thickness 6.6 m² / 40kg bag at 3mm thickness	2kg / m² / 1.2mm thickness 10 m² / 40kg bag at 2.4mm thickness	1.25kg/ m² /1.2mm thickness 10 m² / 25kg bag at 2.4mm thickness
Binder	OPC / Hydrated lime	OPC	OPC
Max Aggregate Size	Graded sand 2.5 mm max	Graded limestone powder / sand 1.0 mm	Limestone powder 0.5 mm
Additives	Water soluble additives to improve workability, water retention, durability, and adhesion	Water soluble polymers to improve workability, water retention, durability, and adhesion	Water soluble polymers to improve workability, water retention, durability, and adhesion
Fire Hazard	Non-flammable	Non-flammable	Non-flammable
Toxicity	Nil	Nil	Nil

Note: Actual coverage may vary depending on the straightness of the block wall

Tools & Accessories

Primary Tools: (STÄRKEN Exclusive)

**Available at STÄRKEN Philippines, Inc*



150mm Notched Trowel

100mm Notched Trowel



Tungsten Carbide Tipped Saw

Other Tools: (Locally Available)



Stirrer



Spirit Level



Rubber Mallet



Wall Trencher



Hand Drill



Mixing Container



Sanding Float



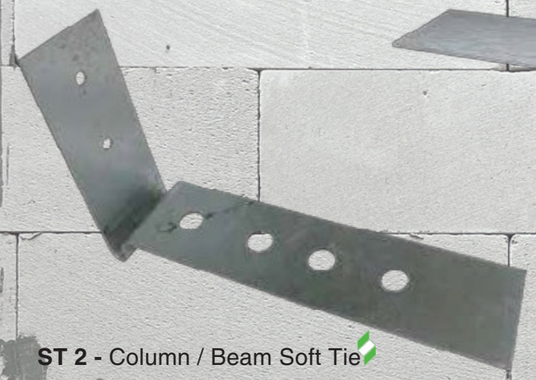
Standard Masonry Trowel

Accessories: (STÄRKEN Exclusive)

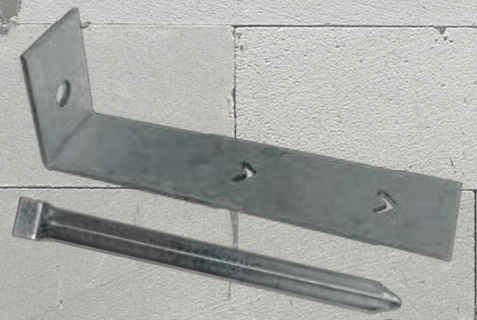
**Available at STÄRKEN Philippines, Inc*



ST 1 - Control Joint Tie



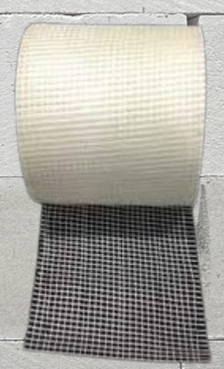
ST 2 - Column / Beam Soft Tie



ST 8 - Vertical Wall Panel Tie

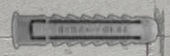


ST 2 - Horizontal Wall Panel Tie



Fiber Mesh
150mm x 50m
(Locally Available)

Anchor Selections: (Locally Available)

Light Duty	Medium Duty	Heavy Duty
1) Nylon Anchor 8mm x 50mm	1) Nylon Anchor 10mm x 50mm / 60mm / 100mm	1) Injection Mortar
		
Approx. load up to 10 kg	**Approx. load** up to 50 kg	**Approx. load** up to 150 kg
Applications: • Coat Hook • Light Fitting • Small Mirror • Painting • on/off Switch • Meter Box	**Applications:** • LCD/ Plasma TV • Shelf • Satelite Disc • Meter Box • Towel Rail • Curtain Rod/ Rail • Kitchen Cabinets • Window Frame • Air-cond Compressor • Door Frame • Clothes Dryer • Sink/ Urinal/ Basin • Pipe Bracket	**Applications:** • Heavy DB • Fire Hose Reel • Signboard • Sink/ Urinal/ Basin • Cantilever Support • Awning/ Window Shade

The STÄRKEN Process

1



STÄRKEN AAC products delivered to project sites.

2



Free technical training done by STÄRKEN AAC Experts.

3



Installation of STÄRKEN AAC Wall System.

4



Render and Skim Coat applications.

5



Constant technical site inspection.

6



Technical support throughout project's duration.

Installation Method

