



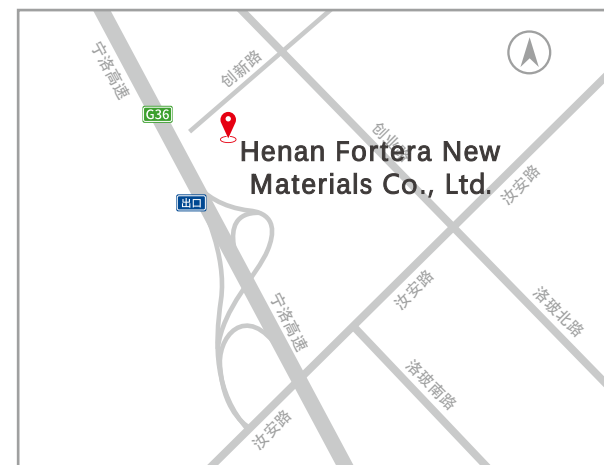
China's First AAC Panel Smart Factory

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Henan Fortera New Materials Co., Ltd.

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Company Profile

Henan Fortera New Materials Co.,Ltd

Henan Fortera New Materials Co., Ltd. is a leading manufacturer dedicated to innovative Autoclaved Aerated Concrete (AAC/ALC) building solutions. Situated in the Industrial Cluster District of Ruyang County, Luoyang City, our modern production facility spans 145,000 square meters and is equipped with world-class automated production lines.

Powered by advanced Aircrete flat-cake cutting and autoclaving technology, we utilize premium quartz sand to manufacture high-precision AAC panels (including 50mm & 75mm thin panels and structural wall/floor slabs). This advanced process ensures superior dimensional accuracy, smooth wire-cut surfaces, and reliable anti-corrosion steel mesh reinforcement.

Designed for modern prefabricated construction, our lightweight, fire-rated, and thermally insulated AAC systems are widely applied in exterior cladding, internal partitions, and acoustic boundary walls.

With a strong commitment to international standards, Henan Fortera provides global clients with end-to-end support—from tailored product engineering and strict quality control to export-grade packaging and reliable international supply chain execution.



Production Line Exterior



Workshop Interior



Cutting Area



Pre-curing Area



Central Control Room



Slurry Preparation Workshop

Products

Product Introduction

Autoclaved Aerated Concrete (AAC) is a green, energy-saving, and precast building material that has been actively used in the global market for over 70 years. It is manufactured from natural raw materials such as water, sand, lime, cement, and a small amount of aluminum powder. AAC products (e.g., partition panels, steel-reinforced structures, and blocks) feature outstanding environmental protection, thermal insulation, acoustic insulation, seismic resistance, fire resistance, and lightweight characteristics.

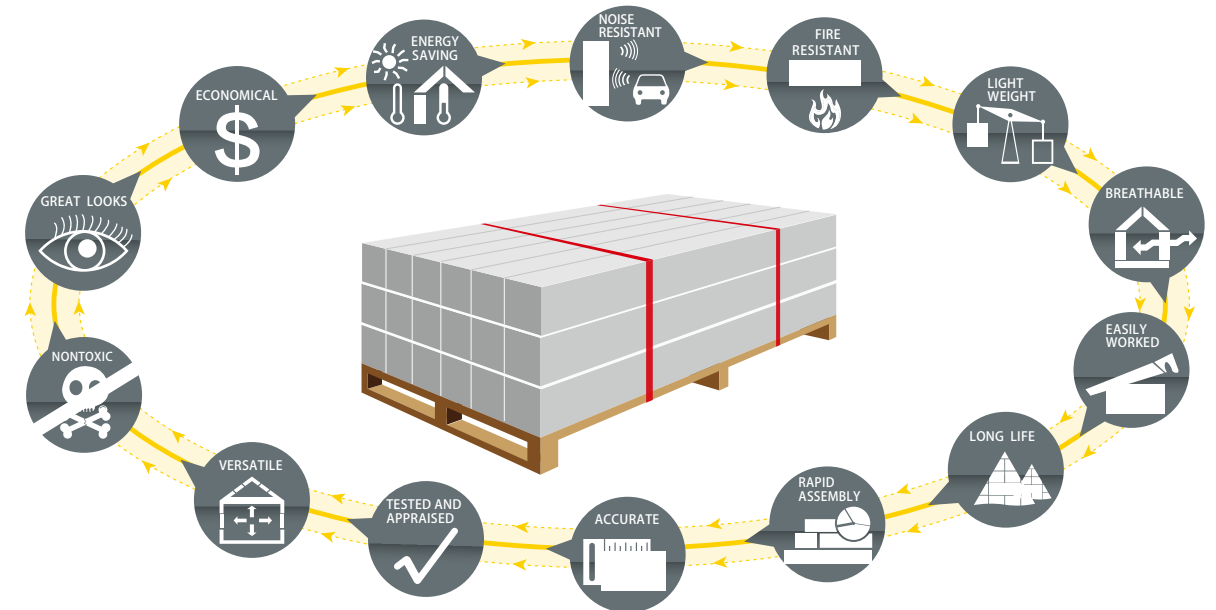
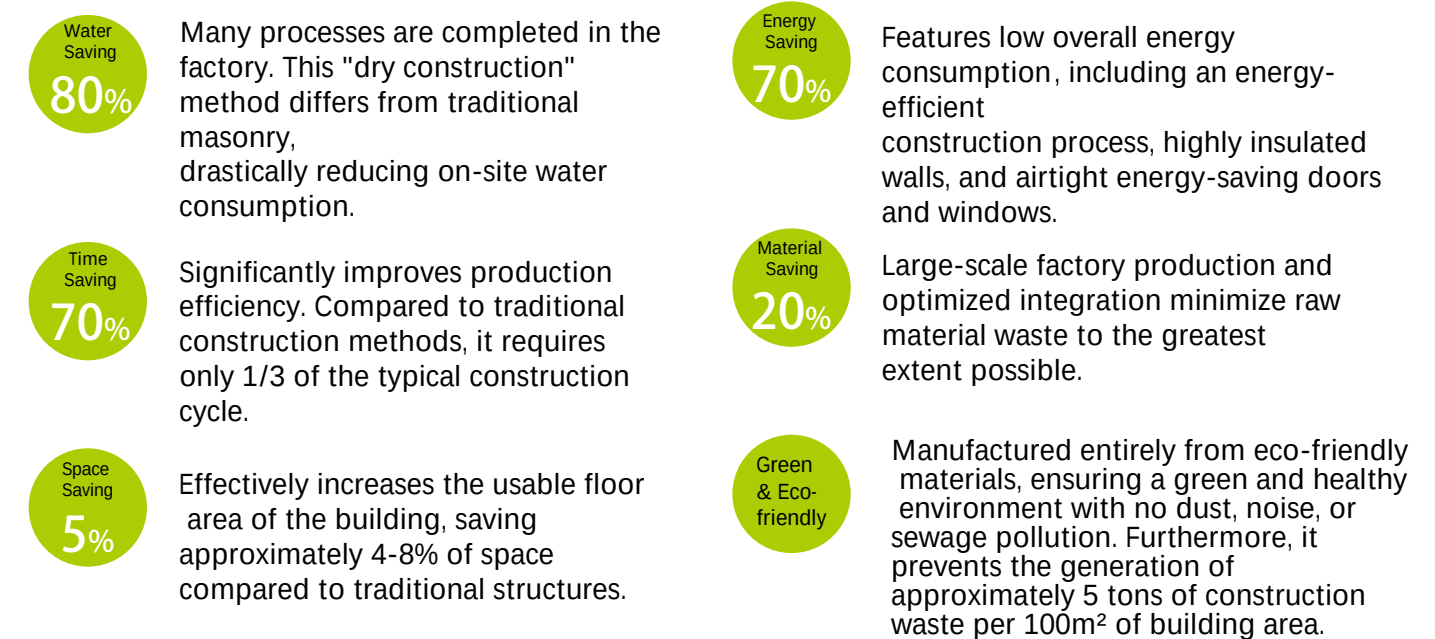
AAC products provide a fast, economical, and sustainable building material solution for the traditional construction market. Compared to traditional residential and commercial building materials, AAC panels offer unique technical advantages:

- 1. High Workability:** Allows for precise post-processing (such as drilling, sawing, and nailing) directly on blocks and panels.
- 2. Superior Thermal Insulation:** Significantly reduces HVAC energy consumption for building heating or cooling.
- 3. Thin-Joint Application:** Can be utilized in locations requiring thin-joint connections, reducing raw material usage and construction costs.
- 4. Lightweight:** The weight is only about 1/5 of traditional concrete.
- 5. High Load-Bearing Capacity:** Enabled by built-in steel-reinforced structures.



Product Performance

Compared to traditional buildings, green buildings utilizing AAC products offer significant advantages in saving water, energy, time, materials, and land, while also increasing the usable floor area and promoting environmental sustainability.



Product Showcase

Autoclaved Aerated Concrete (AAC) Exterior Wall Panels



AAC Exterior Wall Panels - Initial Installation



AAC Exterior Wall Panels - Fully Completed



AAC Exterior Wall Panels - Initial Installation



AAC Exterior Wall Panels - Fully Completed

AAC Exterior Wall Panel Common Specifications Table						
Length (mm)	3500	4500	5500	6000	6000	6000
Thickness (mm)	100	125	150	175	200	250

Product Showcase

Autoclaved Aerated Concrete (AAC) Interior Wall / Partition Panels



AAC Partition Panels - Initial Installation



AAC Interior Wall Panels - Full-Wall Mesh Application



Factory AAC Interior Wall Panels - Initial Installation



Residential AAC Interior Wall Panels - Initial Installation

Common Specifications Table for AAC Interior Wall Panels/Partitions							
Length (mm)	3000	4000	5000	6000	6000	6000	6000
Thickness (mm)	75	100	125	150	175	200	250

Product Showcase

Autoclaved aerated concrete (AAC)roof/slab panels



AAC roof panel installation process



AAC roof panel initial installation effect



AAC Floor Initial Installation Effect



AAC Floor Installation Initial Effect From Above View

Common Specifications Table for AAC Roof Panels/Floor Slabs								
Length (mm)	1500~6000							
Thickness (mm)	100	125	150	175	200	250	300	350

Product Showcase

Autoclaved aerated concrete (AAC)precision blocks



AAC precision block



AAC Block Initial Installation Effect



AAC precision block



AAC Block Initial Installation Effect

Common Specifications Table for AAC Roof Panels/Floor Slabs												
Length L(mm)	Width B(mm)										Height H(mm)	
600	100	120	125	150	180	200	240	250	300		200	240 250 300

Product Showcase

Steam-cured aerated concrete (AAC) fire-resistant panel



AAC Fireproof Panel Beam Initial Installation Effect



AAC Fireproof Panel Beam Initial Installation Effect



AAC Fireproof Panel Beam Initial Installation Effect

Thermal Insulation

The thermal insulation performance of AAC fireproof panels is 3 times that of glass, 3 times that of clay bricks, and 10 times that of ordinary concrete. It effectively eliminates cold and thermal bridge issues in building structures, significantly reducing the overall energy consumption of the building.

Excellent Durability

AAC fireproof panels are made of silicate materials, which are non-aging, weather-resistant, and highly durable. Their standard service life perfectly matches the designed lifespan of various permanent buildings.

Fire Resistance & Flame Retardance

As an inorganic material, AAC fireproof panels are strictly non-combustible. With a low thermal conductivity coefficient and slow heat migration rate, they can effectively resist fires and minimize fire-induced damage to the building structure.

Convenient Construction

Featuring precise dimensions and a lightweight profile, AAC fireproof panels can be easily sawed, drilled, planed, and nailed. They are primarily installed using dry construction methods, offering a simple and highly efficient process that effectively shortens the construction timeline.

Product Showcase

AAC Pipeline Integrated Panel



AAC Integrated Conduit Panel Installation Site



AAC Integrated Conduit Panel Installation Site



Finished Installation of AAC Integrated Conduit Panels

Product Introduction

AAC integrated conduit panels are manufactured by precisely positioning and pre-embedding electrical boxes and conduits within the autoclaved aerated concrete according to detailed blueprints and unified standards, all cast in a single process.

Product Advantages

These integrated panels eliminate industry pain points such as wall damage, cracking risks, and environmental issues caused by on-site slotting and conduit routing. Furthermore, they contribute an additional 2 to 5 points to the customer's prefabricated building evaluation score.

Product Showcase

Cavity Wall



Finished Installation of Cavity Wall



Finished Installation of Cavity Wall

Product Introduction

Cavity wall: The original 200mm indoor partition is replaced by a "75mm panel + 50mm cavity + 75mm panel" configuration, creating a functional cavity mechanism.

Product Advantages

- **Lightweight & Easy Handling:** A single 75mm panel weighs only 80-90kg. The dual-wall system reduces overall dead load by 25%, drastically improving seismic resistance.
- **Crack-Free Joints:** Highly controllable vertical mortar joints effectively eliminate shrinkage cracks during construction.
- **Damage-Free MEP Routing:** Conduits can be routed directly through the 50mm cavity. Zero wall slotting or patching is required, preserving structural integrity.
- **Ultra-Smooth Finish:** Manufactured via advanced Aircrete flat-cake technology, our thin panels deliver superior surface flatness, eliminating difficult-to-finish reverse sides.
- **Superior Insulation (75+50+75mm):** Outperforming a standard 200mm solid wall, this cavity configuration provides exceptional fire resistance and acoustic insulation up to 56dB.
- **Cost-Efficient:** Lowering the building's dead load reduces the required structural steel and concrete reinforcement, significantly cutting overall project costs.

Product Showcase

Fencing / Protection



Prefabricated Permanent Fencing (Boundary Wall)



Prefabricated Permanent Fencing (Boundary Wall)

Fire Resistance & Sound Insulation

AAC Panel Fire Resistance Performance			
Product Type	Thickness (mm)	Fire Resistance Limit (h)	Combustion Performance
Wall Panel	100	≥4	Non-combustible Material
	150	≥5	
	>150	>5	
Fireproof Thin Board	50	≥3.50	

AAC Panel Sound Insulation Performance		
Wall Thickness and Combination Format	Unit	Test Value
100mm AAC Panel + Putty on Both Sides	dB	40.8
120mm AAC Panel + Putty on Both Sides		45.1
150mm AAC Panel + Putty on Both Sides		46.6
180mm AAC Panel + Putty on Both Sides		48.1
200mm AAC Panel + Putty on Both Sides		51.3
Combination 1: (Rock wool on both sides + Middle panel) 150mm Panel + 40mm Rock Wool on both sides + 10mm Gypsum Board (Finishing) on both sides + Putty on both sides		55.2
Combination 2: (Rock wool on both sides + Middle panel) 100mm Panel + 50mm Rock Wool on both sides + 100mm Thick Panel + Putty on both sides		58.6

Product Showcase



Versatile AAC Systems for Australia

Lightweight, dry-assembly B04-grade panels fully compliant with NCC 2022 and AS 5146. Designed for rapid construction across diverse applications:

External Walls: Max FRL 240/240/180 rating, ideal for bushfire-prone zones.

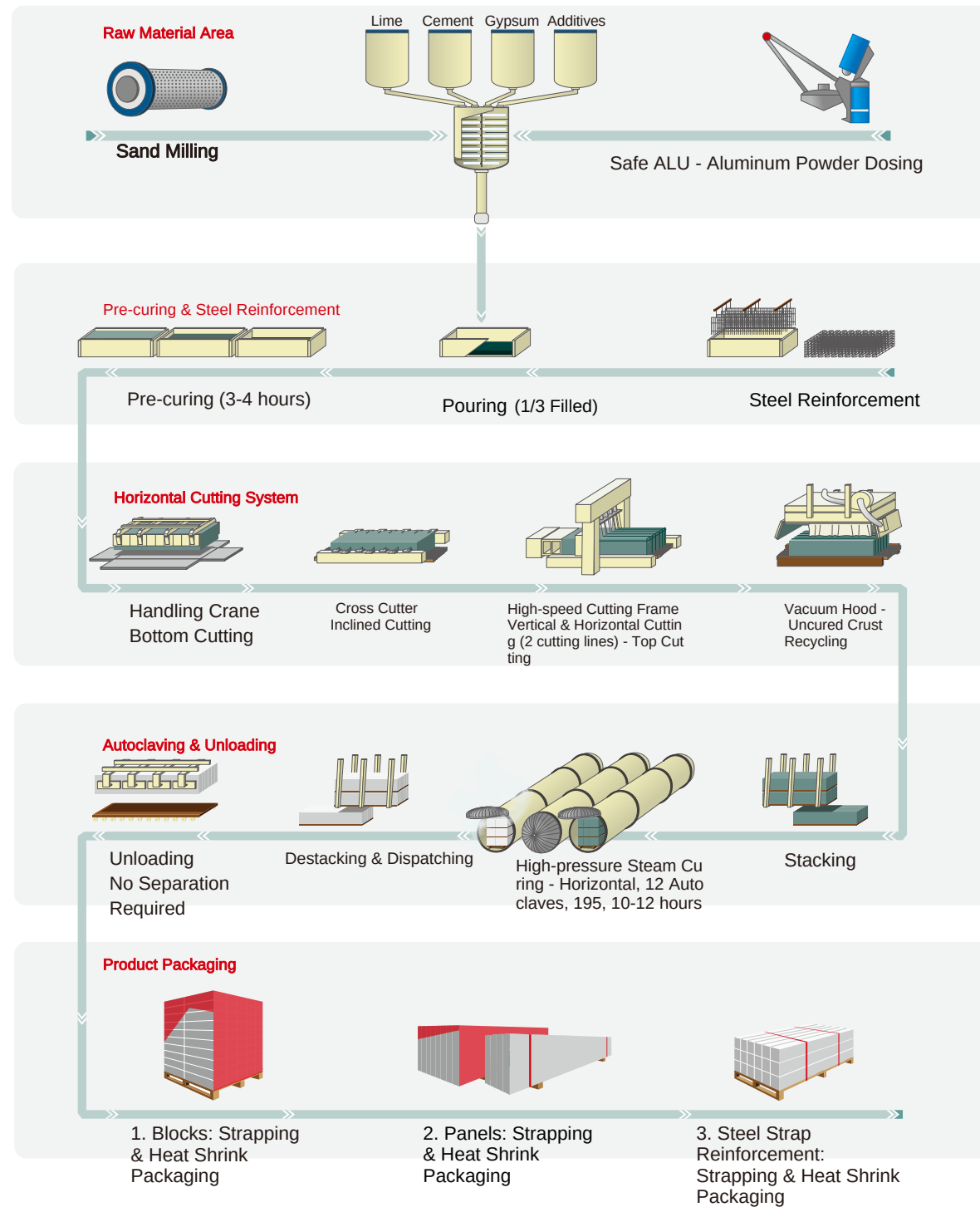
Intertenancy Walls: Superior fire and acoustic separation (Rw+Ctr 50).

Internal Partitions: 50mm/75mm ultra-thin panels to maximize usable space.

Flooring & Fencing: Robust thermal mass floors and sound-absorbing boundary fences.

Technology

Production Process



Production Equipment



Finished Product Packaging System



High-efficiency Energy-saving Autoclave



Aircrete Vacuum Hood Machine



Aircrete Cutting Machine



Batching System



Ball Mill

Technical Advantages

1. Advanced Slow-Mixing Process

Multi-blade slow mixing ensures raw materials are fully reacted, resulting in uniform density and superior structural integrity.



3. Aircrete Flat-Cake Process

By eliminating mechanical separation of the green cake, our streamlined process achieves zero raw material waste (< 1%).

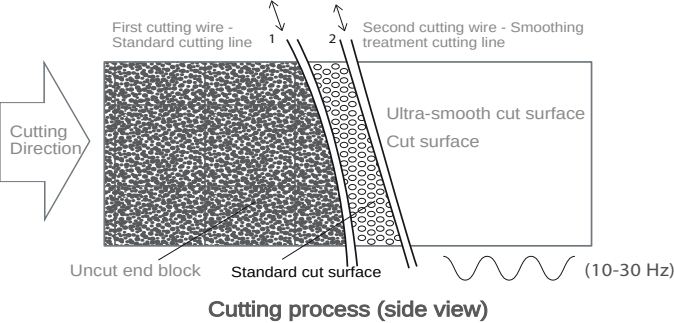
5. 98% First-Pass Yield

An industry-leading 98% qualification rate guarantees consistent premium quality and stable, reliable supply for large-scale projects.

Production Process Comparison			
Process Step	工艺类型	Turn-over Cutting System	
		Horizontal Shifting Cutting System (No separation needed)	Post-curing separation
Step 1		Use handling crane	Turn over (90°)
Step 2		Cutting (Horizontal placement)	Cutting (Vertical placement)
Step 3		Horizontal autoclaving	Vertical autoclaving
Step 4		Sorting & Packaging	Bottom waste removal
Step 5		/	Pre-curing separation
Step 6		/	Horizontal autoclaving
Step 7		/	Sorting & Packaging

2. Dual-Wire Precision Cutting

Our high-frequency cutting technology achieves a <1mm error margin. The ultra-smooth finish significantly reduces on-site plastering costs.



4. Ultra-Thin Panel Capability

Equipped for precision thin-panel manufacturing, we lead the market in producing ultra-thin AAC products down to a 35mm thickness.

Construction

Construction Workflow



Deliver & Stack Panels on Site

Transport AAC panels to the construction site and stack them according to specifications.



Erect the Panel

Move the mortared AAC panel to the marked position and install it upright.



Setting Out (Marking Lines)

Set out lines according to the architectural construction drawings.



Apply Mortar (Adhesive)

Evenly apply the mixed mortar to both edges of the AAC panel.



Transport to Installation Area

Transport AAC panels to the marked area and stage them for installation.



Mix Masonry Mortar

Mix masonry mortar according to the required usage volume.



Fix with U-Clips or Hook Bolts

Adjust the flatness and verticality of the AAC panel according to the marked lines, then secure it firmly with U-clips.



Joint Grouting

Use specialized mortar to fill and smooth the panel joints.

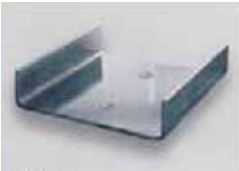


Initial Installation Completed

Visual effect of initially installed AAC panels.

Construction Accessories

Construction Accessories		
No.	Accessory Name	Application / Use
1	Half U-Clip	Interior wall panel installation
2	U-Clip	Interior wall panel installation
3	Double-ended Bolt	Interior & exterior wall panel installation
4	Hook Bolt	Interior & exterior wall panel installation
5	Angle Bracket	Interior wall panel installation
6	Square Connector	Interior wall panel installation
7	Angled Connector	Exterior wall panel installation
8	Specialized Support Bracket	Support and tie-connection for thermal insulation thin blocks
9	Steel Pipe Anchor	Exterior wall panel installation
10	Pipe Clamp	Interior & exterior wall panel installation
11	Hollow Wall Anchor	Interior & exterior wall panel installation
12	L-shaped Iron Bracket	Block masonry connection
13	Pry Bar	Panel installation
14	Panel Cart	Panel transportation



U-Clip: For interior wall panel fixation



Double-ended Bolt: For reinforcing interior wall panel door/window openings



Hook Bolt: For exterior wall panel fixation and installation



Specialized Support Bracket: For support and tie-connection of thermal insulation thin blocks



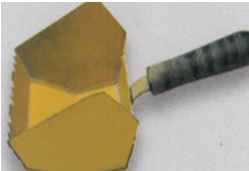
Pipe Clamp: For interior & exterior wall panel fixation and installation



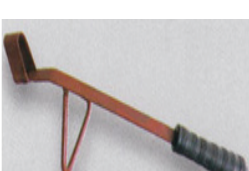
L-shaped Iron Bracket: For block masonry connection

Construction Tools

Construction Tools		
No.	Tool Name	Application / Use
1	Mortar Scoop	Dedicated scoop for thin-joint masonry
2	Grooving Tool	Grooving for conduit embedding
3	Sanding Rasp	Local surface finishing after wall masonry
4	Steel-toothed Rasp	Local surface finishing after wall masonry
5	Mixer	Dry powder mixing
6	Tri-blade Drill Bit	Drilling holes (e.g., for hook bolts)
7	Nail Gun	Nail fastening
8	Lifting Sling	Panel hoisting / lifting
9	Rotary Hammer	Drilling holes (e.g., for expansion bolts)
10	Electric Drill	Drilling holes (also used for dry powder mixing)
11	Portable Cutting Machine	Block and panel cutting
12	Small Cutting Machine	Panel cutting
13	Multi-purpose Hatchet	Interior wall panel installation
14	2m Straight Edge	Checking wall verticality
15	Chalk Line Box	Snapping installation lines



Mortar Scoop: Dedicated for thin-joint masonry



Grooving Tool: For grooving various conduit embeddings



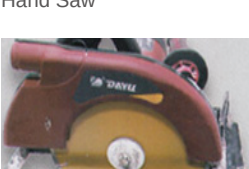
Tri-blade Drill Bit: For drilling and fixing hook bolts on the wall



Nail Gun: For wall connection and fixation of U-clips



Hand Saw

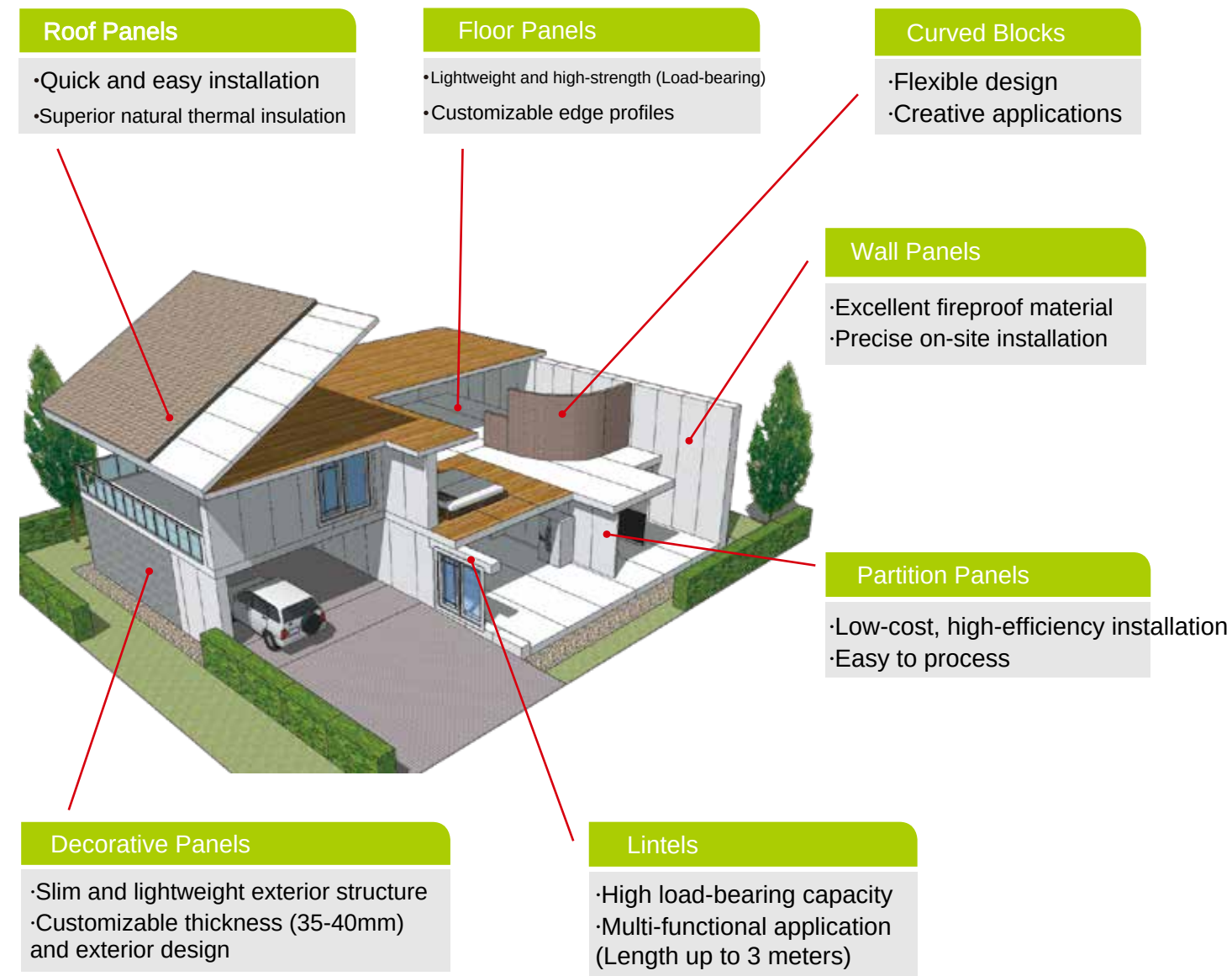


Portable Cutting Machine: For cutting panels and blocks

Applications

Application Scope

AAC products offer extensive versatility. They are applicable to exterior walls, interior walls, roofs, and floor slabs in new constructions, renovations, and expansions of public, industrial, and civil buildings. Through external cladding or adhering methods, AAC ultra-thin panels and low-density blocks are widely integrated into self-insulation systems, exterior wall insulation systems, composite extension systems, and integrated decorative systems.



Project Showcase

Public Buildings



Luoyang Olympic Center

Area: 182,800 m²

Application: Fortera AAC panels for exterior/interior walls and floor slabs.



Luoyang Int'l Convention & Exhibition Center

Area: 234,000m²

Application: Fortera high-precision blocks and interior AAC partition panels.



Luoyang Dahehui

Area: 184,000 m²

Application: Fortera prefabricated AAC exterior and interior partition panels.



Ruyang Vocational and Technical College

Area: 238,000 m²

Application: Fortera AAC interior wall panels.

Civil Buildings



Poly Huguang Yiyuan
Area: 246,400 m²
Application: Fortera AAC exterior/
 interior panels & floor slabs.



Vanke Metropolis
Area: 173,800 m²
Application: Fortera high-precision AAC
 blocks.



Sunac Dahe Chenyuan
Area: 272,000 m²
Application: Fortera 50mm AAC fireproof
 panels.



Luming Yihe Mansion
Area: 150,000 m²
Application: Fortera AAC exterior/
 interior panels & floor slabs.

Hospitals / Schools



Xuchang Jian'an No.1 High School
Application: Fortera high-precision AAC
 blocks.



Pingyuan New District Hospital
Area: 190,000 m²
Application: Fortera AAC interior
 panels.



Jiaozuo Vocational & Technical College
Area: 225,800 m²
Application: Fortera AAC interior
 panels.



Luohe Maozhai Middle School
Application: Fortera high-precision
 AAC blocks.

Industrial / Warehousing



Zhonghong Phoenix Valley Industrial Park
Area: 240,000 m²
Application: Fortera AAC exterior & interior panels.



GLP Logistics Park
Area: 266,000 m²
Application: Fortera AAC exterior / interior & fireproof panels.



DFD Chemical Factory
Application: Fortera AAC exterior & interior panels.



SF Express Industrial Park
Application: Fortera AAC exterior & interior panels.

Civil Buildings



Zhengzhou Country Garden Time City
Area: 280,000 m²
Application: Fortera AAC interior partition & integrated conduit panels.



Ruyang Country Garden
Area: 107,000 m²
Application: Fortera AAC interior partition panels.



Poly Yunhui Garden
Area: 157,000 m²
Application: Fortera AAC interior partition & integrated conduit panels.



Luoyang Vanke Hongya Garden
Area: 239,000 m²
Application: Fortera AAC interior partition panels.

Civil Buildings



Zhengzhou Country Garden Phoenix City
Area: 2,700,000 m²
Application: Fortera AAC interior partition & integrated conduit panels.



Xincheng Time Impression
Area: 120,000 m²
Application: Fortera AAC interior partition & integrated conduit panels.



Xi'an Gaoling Cultural & Sports Hotel
Application: Fortera AAC interior partition panels.



Luohe Bairui Building
Application: Fortera AAC interior partition panels.



Luohe Talent Apartments
Application: Fortera AAC interior partition panels.



Handan Solar "Thermal+" Project
Application: Fortera AAC interior partition panels.



Luoyang Zhongyuan Environmental Protection Park
Application: Fortera high-precision AAC blocks.



Hongyun Neighborhood Center
Area: 2,600 m²
Application: Fortera AAC exterior & interior panels.