

INDUSTRIALIZE ARCHITECTURE



## SANY AUTOCLAVED AERATED CONCRETE PRODUCTION LINE



## SANY CONSTRUCTION TECHNOLOGY CO., LTD.

SANY Industrial City, Changsha Economic and Technological Development Zone, Hunan, China  
Tel: 400010 3311

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SANY CONSTRUCTION ENGINEERING TECHNOLOGY CO., LTD.

# Industrialize architecture

## Industrialize architecture

We aspire to be a hard-tech company of intelligent construction

We aim to make mass construction structurally safe, high quality, efficient and less manpower

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SANY CONSTRUCTION TECHNOLOGY CO.,LTD

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# ENTERPRISE INTRODUCTION

SANY Group provides the most comprehensive engineering and construction equipment in the world, and PCTEAM empowers the five-pronged ecology of building design, production, construction, development and operation.

## About Us

Founded in 2016, PCTEAM is positioned as a digital technology platform for industrializing architecture with intelligent equipment and core technologies. It is committed to industrializing architecture and making construction easier in the world.

Derived from SANY Group's global strength as a construction machinery brand, intelligent manufacturing experience and industrial internet advantages, we provide key technologies and related standards, intelligent equipment and digital plants, software platforms and sharing models for industrializing architecture.

- **Key Technologies and Related Standards:** We provide key technologies of SPCS structure in the industry to solve the pain point of vertical structure technology for prefabricated concrete buildings, and launch related technical standards to complete the prefabricated building system in such areas as prefabricated structure and waterproofing of underground works.
- **Intelligent Equipment and Digital Plants:** We provide a complete set of intelligent equipment for prefabricated construction and digital plants driven by data intelligence to help customers with less manual and intelligent production operations and intelligent construction, which can effectively improve operational efficiency and achieve digital transformation.

- **Software Platforms and Sharing Models:** We provide professional design software, industrial software, component management and other SaaS software and digital platforms to support digital twin in the construction ecology that covers "the whole cycle, all the roles, and complete elements". Based on the industrial internet foundation and powerful computing power of SANY Group, we develop professional algorithms and build an architecture industrialization platform economy under the sharing model jointly with industry leaders.

- PCTEAM's intelligent equipment includes a complete set of PC equipment, AAC production equipment, a complete set of steel reinforcements, construction recycling equipment, industrial software, etc. PCTEAM has now become the largest supplier of the most comprehensive PC sets in China, owning a public market share of over 50% in China. It now holds more than 600 patents on prefabricated construction related technologies to realize seamless and efficient connection of all aspects of architecture industrialization.

- With the advanced concept of high quality, high reliability, low loss, and less manual labor, PCTEAM provides solution packages for the new building material of AAC. All equipment of the SANY AAC production line is connected online, and digital technology is applied to drive the whole business process of the new building material of AAC from production to logistics and construction to truly achieve intelligent and lean management.



## Brand Development History

1989

SANY Group invented this production line and was the earliest manufacturer of construction machinery and equipment in China.

1994

The first large-displacement and high-pressure concrete pump in China was born in SANY, breaking the monopoly of foreign brands.

1998

SANY's concrete pump successfully created the record of domestic pumping height at 300.8m in SEG Plaza, Shenzhen, and it was crowned as "King of Pump in China".

2005

SANY's pump production and sales volume ranked the first in the world, and SANY Heavy Industry became the first share in the equity division reform.

2008

SANY formally entered the PC industry as the first enterprise in China to engage in the research of architecture industrialization technology and prefabricated construction system.

2014

At SANY Group, architecture industrialization is a key segment. SANY has built a PC experiment plant in Changsha covering an area of more than 300 mu and completed the building and training of installation and service teams for the PC production line in more than 30 provinces and cities across China.

March, 2015

SANY Group has applied to become a national base for residential industrialization, and in April of the same year, it established the Research Center for Integrated Construction Engineering Technology of New Architecture Industrialization with North China University of Technology and China State Construction.

2016

**PCTEAM was officially established, and SANY held more than 50% of the market share for complete set of PC equipment.**

November, 2017

SANY Group was approved as one of the earliest national industry base for prefabricated construction and sold more than 400 PC production lines nationwide and across the world.

2018

PCTEAM launched the SPCS structure technology system, which was well received by academicians, who commented that this complete set of technology generally met the advanced international standard and the composite column technology was in a leading position in the world.

2019

The equipment segment of PCTEAM developed to be an intelligent manufacturing solution package provider that covered professional equipment such as complete set of PC, AAC production equipment, construction waste treatment equipment, construction robots, and industrial software. PCTEAM was also awarded the national title of "Enterprise with Intellectual Property Advantage".

2020

PCTEAM officially released SPCS v3.0

## Enterprise Honors

Some of the honors that PCTEAM has received in the industry since its establishment.



>National Industry Base for Prefabricated Construction



>Research Center for Integrated Construction Engineering Technology of New Architecture Industrialization



>National Base for Residential Industrialization



>Group member unit of the Construction Robot Professional Committee of China Association of Automation



> Vice president unit of China Prefabrication Industry Alliance



>Vice president unit of the Architecture Industrialization Branch of China Association for Engineering Construction Standardization



> Five-star After-sales Service Certificate



>BIM Talent Training Center



>High-tech Enterprise



>Grade-3 Enterprise of Safe Production Standardization



> Little Giant Enterprise in Hunan Province



>Prefabricated Construction Industry Base in Hunan Province



>National Enterprise with Intellectual Property Advantage



>Excellent Enterprise in Prefabricated Construction Industry in Hunan Province in 2018

## Core Advantages

SANY Group has always upheld its vision since its establishment in 1989 and built the well-known “SANY” brand. It has become a leading global equipment manufacturer. SANY is also one of the first pilot demonstration enterprises of “intelligent manufacturing” in China. Based on the main business of equipment manufacturing, SANY Group is strongly developing new businesses such as new energy, finance and insurance, prefabricated construction, industrial internet, military industry, fire fighting, and environmental protection. At present, SANY has become a mature provider of complete sets of equipment for prefabricated construction in China.

01

### Top R&D Strength in China

SANY spends about 7% of its annual sales revenue on R&D. It runs a national technology development center and a post-doctoral mobile workstation. It has applied the most patents in the industry and has won five national science and technology awards. It not only is the “National Base for Residential Industrialization”, “National Industry Base for Prefabricated Construction”, and “Research Center for Integrated Construction Engineering Technology of New Architecture Industrialization of the Ministry of Housing and Urban-Rural Development”, but also sponsored and initiated the “Residential Industrialization Alliance of Hunan Province” and established the only “BIM Talent Training Center” in Central China in deep cooperation with Nemetschek Engineering GmbH.

02

### Marketing Services Around the World

SANY operates in more than 150 countries and regions around the world, including more than 30 marketing service companies, more than 500 marketing service network points, and more than 6,000 top salespersons nationwide.

03

### Whole Industry Chain Financial Services

SANY Finance can provide mortgage loan services for customers who purchase new equipment from SANY. This one-stop and whole-process financial service system can keep you worry-free.

04

### Intelligent Manufacturing Lean Production

SANY Equipment Manufacturing introduces the best lean manufacturing model in the world and implements the 6σ quality control standards, with each process committed to excellence and exceeding your expectations.

05

### Customer First Perfect Delivery

In order to improve the quality of product installation and delivery and enhance customer satisfaction, SANY has its own professional installation teams and service engineers all over the country to ensure “perfect delivery” specifically for customers.

06

### Exclusive Training Operation Proxy

SANY provides comprehensive training on production, operation and marketing, as well as package operation proxy services for customers.



SANY

品质改变世界

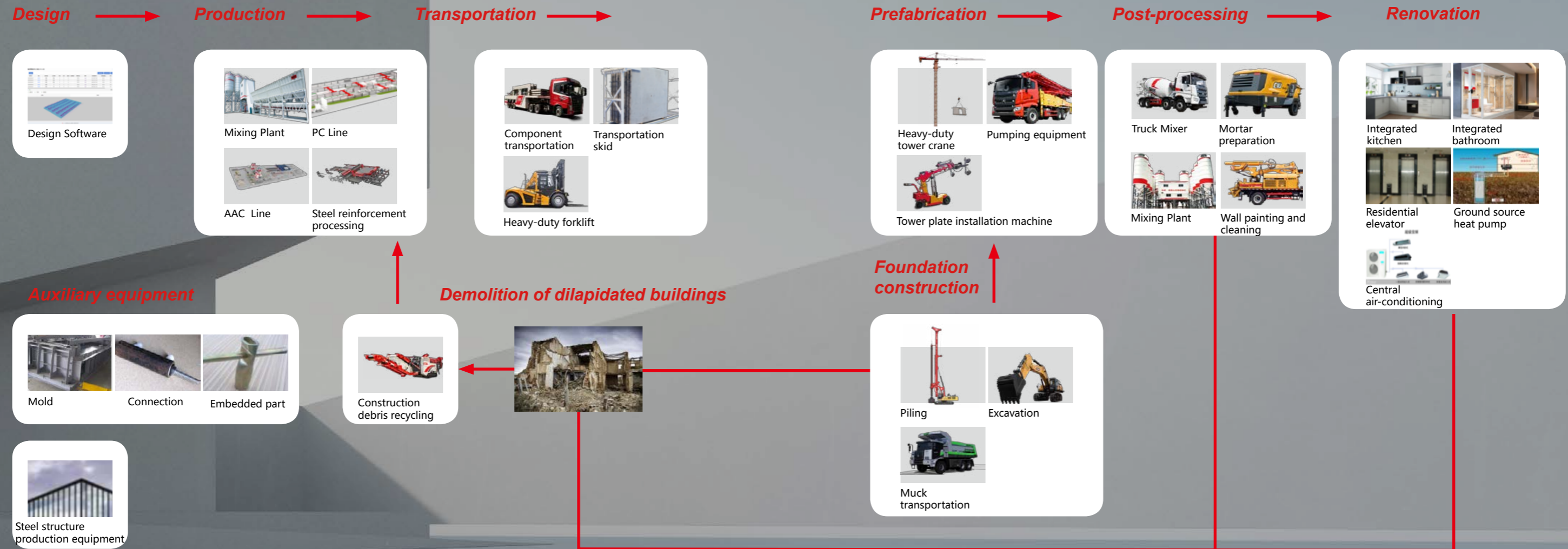
Quality Changes the World 三一重工

# PRODUCT OVERVIEW

All equipment of the SANY AAC production line is connected online, and digital technology is applied to drive the whole business process of the new building material of AAC from production to logistics and construction to truly achieve intelligent and lean management.

# SANY Complete Set of Equipment for Prefabricated Construction

Relying on SANY Group's equipment advantages in the traditional construction engineering industry, PCTEAM has become a supplier of most complete equipment for prefabricated construction in China, providing design, production, transportation, prefabrication, post-processing, and decoration services as well as auxiliary equipment.



## Overview of SANY AAC Production Line

Relying on the unparalleled R&D strength of SANY Group, SANY AAC flow production line adopts core technologies such as coarse and fine weighing and metering, high-precision cutting, dry waste recycling and fully automatic steam curing. The SPCIAMES fully automatic central integrated control system is also developed to provide customers with advanced production line equipment, create good user experience, and lead the industry in a new direction.



### Customization

Based on JIT (Just-In-Time) production mode and production line control technology platform, we build different process modules and combine them on demand to form product series such as slab production line, slab parts processing equipment, and upgrading and renovation of existing block line equipment.



### High Return

The comprehensive application of core automatic control technology has greatly improved production efficiency. The takt time is 3 to 5min, the manual demand is reduced by 30%, and the return on investment in equipment is short.



### Information-based

Industry 4.0 is deeply applied to the digital plant to support automatic matching of key process parameters, automatic data-driven production of reinforcing mesh, APP-based digital quality inspection, and efficient and balanced scheduling for dynamic global optimization.

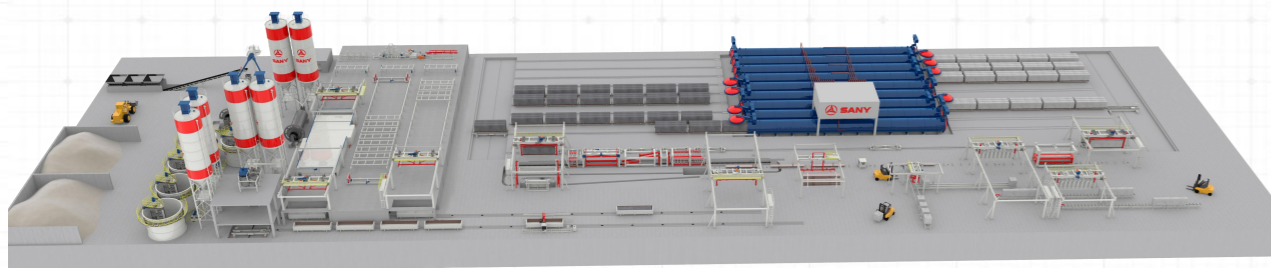


### Fast Delivery

Powerful and advanced manufacturing capacity, service outlets all over the country, SANY's internal professional installation teams, and information-based online collaborative platform can perform delivery within 120 days for standard lines and help you seize opportunities for quick win.

# SACE6012HHK3-6-meter AAC Plate Production Line

Automatic Steam Curing Dry Recycling Energy Saving Stable Cutting Digital Driving



- Core technologies such as dry waste recycling, coarse and fine weighing, and fully automatic steam curing are indicatively used;
- The cutting unit is provided with a segmented slanting beam design, which conforms to ergonomics;
- The design of double station tilting table has been adopted for higher efficiency;
- Zero-momentum swing frame design is adopted to ensure smooth cutting and back and forth swing;
- Domestic innovation has been made in using intelligent matching technology for autoclave process parameters, achieving full unmanned steam curing, energy conservation, and high production;
- Workshop energy management system is combined with waste heat recovery technology, online water/electricity/steam consumption, energy-saving and emission reduction to reduce gas costs;
- Digital driven production, intelligent manufacturing of cockpit, and digital operation.

## Product Making



• AAC building blocks



• AAC plates

## Core Equipment



• Cutting unit



• Double station tilting table

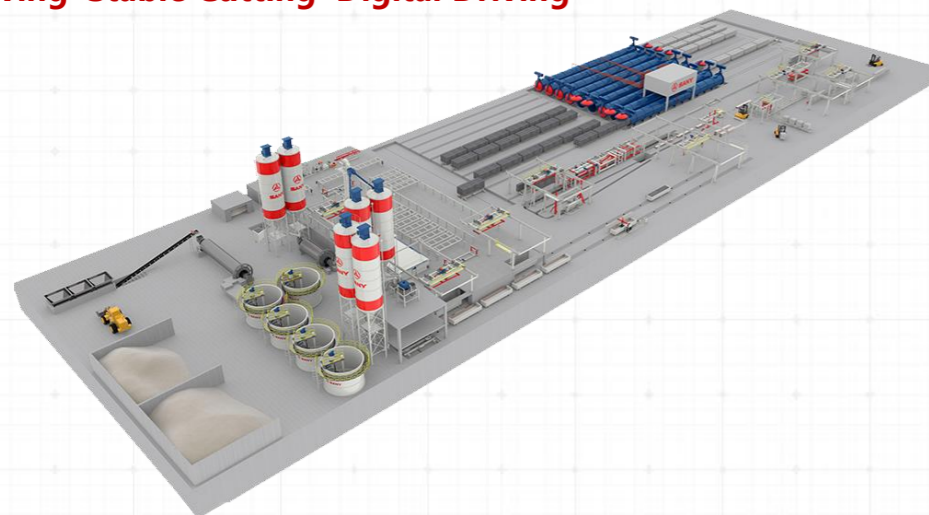
• Main pouring building

## Product Parameters

1	Production line capacity	300,000 to 500,000 cubic meters per year (7-10 autoclaves)
2	Production line rhythm	3~5min
3	Product specification	Building blocks and plates (in accordance with national standards GB/T 11968-2020 and GB/T 15762-2020)
4	Intelligent configuration	AMES production management system, ACM production-sale-inventory management system, digital factory cockpit, SPCI mini program
5	Optional function	Automatic steam curing system, waste heat recovery system, energy management system, automatic cleaning of sawing wire

## SACE4812HHK1 -4.8-meter AAC plate production line

Old line Renovation Automatic Steam Curing Dry Recycling  
Energy Saving Stable Cutting Digital Driving



- The machine is suitable for old line renovation, which fully inherits the excellent functions of the 6-meter plate production line, has the characteristics of precise measurement, uniform mixing, stable cutting, convenient maintenance, and intelligence with less manual operation, and can greatly improve the automation and intelligence level of the production line.
- Extreme over crossing capability such as cranes and shuttle buses can greatly reduce the renovating cost of old factory buildings.
- Domestic innovation has been made in using intelligent matching technology for autoclave process parameters, achieving full unmanned steam curing, energy conservation, and high production;
- Workshop energy management system is combined with waste heat recovery technology, online water/electricity/steam consumption, energy-saving and emission reduction to reduce gas costs;
- Digital driven production, intelligent manufacturing of cockpit, and digital operation.

### Product Making



• AAC building blocks



• AAC plates

### Core Equipment



• Glass



• Flip stripper



• Vertical cutting machine

### Product Parameters

1	Production line capacity	250,000 to 400,000 cubic meters per year (7-10 autoclaves)
2	Production line rhythm	3~5min
3	Product specification	Building blocks and plates (in accordance with national standards GB/T 11968-2020 and GB/T 15762-2020)
4	Intelligent configuration	AMES production management system, ACM production-sale-inventory management system, digital factory cockpit, SPCI mini program
5	Optional function	Automatic steam curing system, waste heat recovery system, energy management system, automatic cleaning of sawing wire

# Equipment Composition of AAC Production Line

## Processing of Raw Materials:

- 1 Sand hopper
- 2 Belt conveyor
- 3 Ball mill
- 4 Lime/cement silo
- 5 Slurry tank

## Reinforcing mesh processing:

- 6 Jackrod drilling crane
- 7 Jackrod pulling crane
- 8 Drilling steel cleaning machine
- 9 Anti-corrosion crane
- 10 Drying oven
- 11 Saddle frame ferry vehicle
- 12 Hanging net work station
- 13 Saddle circulation line
- 14 Mesh machine

## Resting and Curing after Pouring:

- 15 Weighing scale
- 16 Pouring mixer
- 17 Lift pouring head
- 18 Pore finishing machine
- 19 Pouring ferry vehicle
- 20 Mold cart
- 21 Ferry vehicle for resting and curing
- 22 Oiling machine

## Demolding and Cutting:

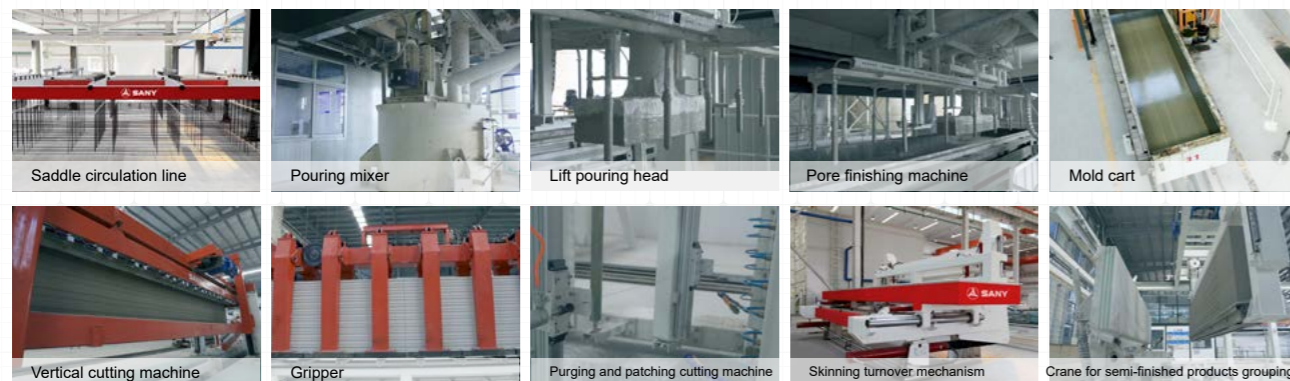
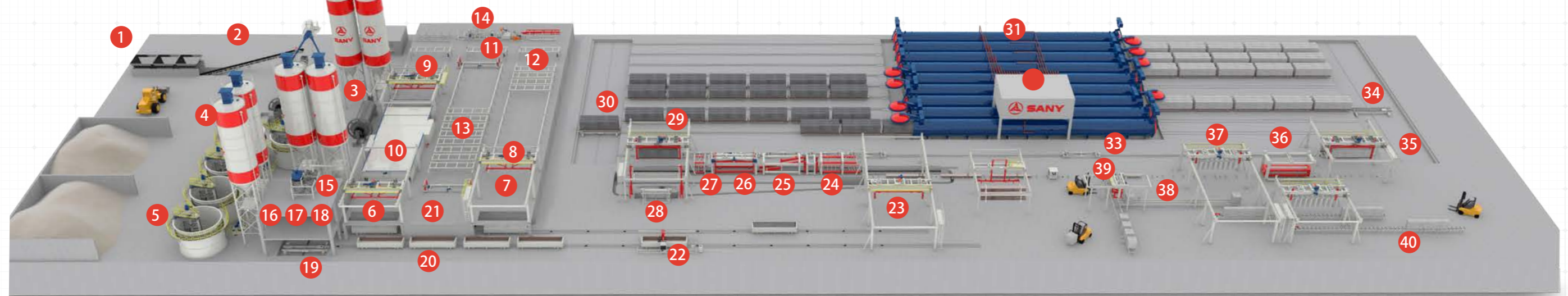
- 23 Air-flip demolding machine
- 24 Lateral cutting slotting machine
- 25 Horizontal cutting machine
- 26 Vertical cutting machine
- 27 Purging and patching cutting
- 28 Skinning turnover mechanism

## Curing by Grouping:

- 29 Crane for semi-finished products grouping
- 30 Autoclave feeding ferry vehicle
- 31 Autoclave
- 32 Steam distribution platform
- 33 Steam curing trolley

## Finished Products Off-line:

- 34 Autoclave discharging ferry vehicle
- 35 Crane for finished products grouping
- 36 Glass severing machine
- 37 Single-mold gripper crane
- 38 Rotating gripper
- 39 Pallet dispenser
- 40 Finished products conveying line



## Core Technical Advantages of SANY AAC Production Line

### Advantage 1: Precise weighing and even mixing

The patented technology of coarse and fine weighing is adopted in the production of powder and slurry for AAC slabs/slurry to realize the precise weighing of raw materials.

The pouring and mixing system is designed with a high rotating speed at 900-1,200 rpm, so that the materials are fully mixed in a short time and the slurry density is more uniform. 16 vibrating pokers are grouped to vibrate under control in a variety of foam combing modes to achieve better defoaming effect.

### Advantage 2: Stable cutting and convenient maintenance

The cutting unit is designed with segmented slanting beam, and the overall frame is in the shape of cage to ensure stable swing during the cutting process and greatly reduce damage to the slab body by the shaking of the cutting frame. The special ergonomic design with upper column facing down and lower column facing up makes it more convenient to replace and maintain the steel wire.

### Advantage 3: Automatic steam curing, energy saving, and environmental protection

The parameters intelligent matching technology that is first introduced in China to apply in the autoclave process increases the annual output by 30,000 m<sup>3</sup>. The first fully automatic steam curing technology in the industry and the independently developed AMES software system achieve unmanned steam curing throughout the process, eliminating quality problems caused by human errors. Energy is saved by more than 30% through intelligent identification of the state of each autoclave, automatic scheduling of steam conduction between autoclaves, and reuse of waste steam. A multi-stage precipitation system is used to precipitate and recover condensate water, which saves 43,200 t of water per year.

### Advantage 4: Digital control, intelligence and less manual labor

SANY's central control system can control and manage the processing of raw materials, pouring and mixing, resting, curing and cutting, steam curing, finished products packing, and processing of steel reinforcements. It also implements online management over panoramic monitoring of the plant, procurement of raw materials, make-to-order, finished products storage and delivery, as well as ERP functions such as cost calculation and financial statement. The takt time is 3-5min, and the manual demand is reduced by 30%.



## Introduction to the Equipment of SANY AAC Production Line



## Solution Package for Construction Information ( SPCI )

### The core of SANY AAC production line

For the sake of efficiency improvement and process transparency and control, PCTEAM provides a set of industrial software dedicated to AAC digital plants, including parts design analysis and process simulation, parts production, and quality inspection and off-line delivery of parts to truly realize digital-driven production.

#### SPCI with leading industrial software for prefabrication parts production

- ✓ We connect different architectural design software, so as to provide data sources for data-driven applications (a leading technology at home and abroad)
- ✓ SANY's equipment under drive control to achieve IT-based efficient and collaborative production (a leading technology in the industry)

### Application Scenarios

#### Parts design analysis and process simulation

©SPCI-ACAPP

(AAC parts library and production process management system)

- Automatic data pre-processing

#### Parts Production

©SPCI-AMES(AAC Production Line Management System)

- Automated and efficient production

#### Quality inspection and off-line of parts

©SPCI-QIS(Parts Quality Management System)

- Quality inspection of raw materials, production process, and finished products
- Fully automatic no-load operation quality inspection involving all equipment on the entire line (a leading technology at home and abroad)
- Defending the last quality line for customers

## SPCI-AMES AAC Production Line Management System

The design data acquired after automatic design analysis through SPCI-ACAPP is sent to the controller to directly drive the AAC production line to perform automatic processing of raw materials, intelligent dosing and pouring, automatic production of slab mesh, data-driven resting, curing and cutting, intelligent steam curing, automatic autoclave feeding and discharging, severing and delivering off-line.

### Design Analysis



- The SPCI-ACAPP enables design-driven production of slabs and blocks. Information like slab size, mesh size, formula, and strength is extracted from the design model to intelligently drive the production line to complete production efficiently.

### Data-driven Production



- Integrated AAC reinforcing mesh JIT production and whole process of production and installation based on scheduling of mold vehicle and tracking of mesh. Key processes are automated, including automatic processing of raw materials, intelligent dosing and pouring, automatic production of slab mesh, data-driven resting, curing and cutting, intelligent steam curing, automatic autoclave feeding and discharging, severing and delivering off-line, with takt time of 3-5min throughout the line.

### Process Adaptation

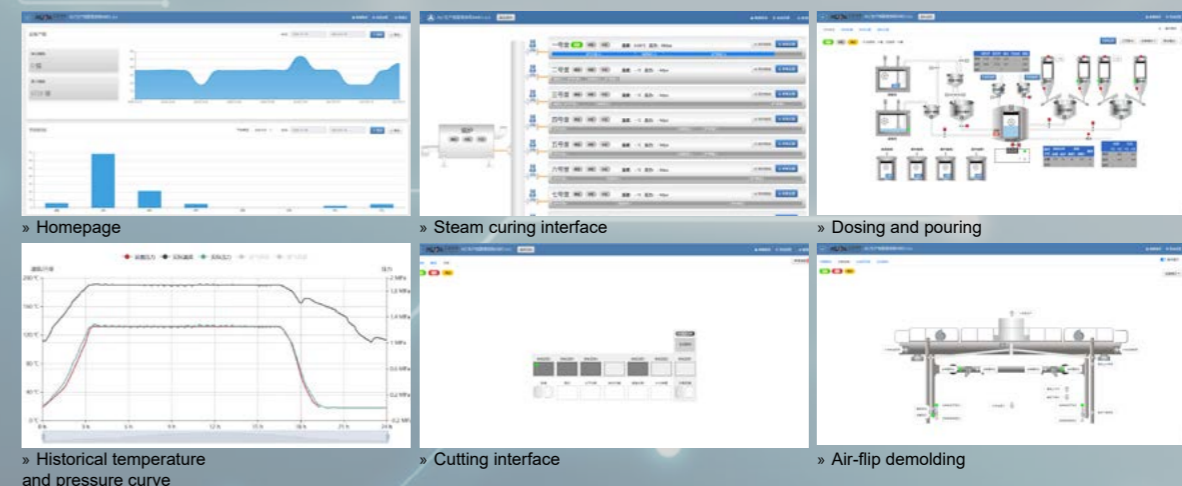


- APP digital quality inspection of key processes such as slurry, resting and curing, cutting, autoclave discharging, and finished products can improve the off-line rate of finished products and completely change the current manual recording of quality inspection data that fails to track and analyze quality problems in the AAC plant.

### Visibility on Touch Screen



- Users can see the operation of equipment and the operation and management of production, sales, and inventory in the plant in real time on the SPCI applet and PC terminal. Service call with one key is supported. Troubleshooting service is provided online transparently and efficiently.



## Dosing and weighing equipment



### Precise weighing

- The patented technology of coarse and fine weighing is adopted for both powder and slurry, with a metering accuracy of 0.5%, which is higher than the average accuracy level of 1% in the industry.



### Intelligent dosing

- The SPCI+AMES system is adopted for automatic scheduling to achieve adaptive proportioning and fully automatic weighing of raw materials for slabs, blocks and products with different volume weights.



The dosing and weighing equipment is suitable for secondary processing, storage, mixing and weighing of raw materials in the production line. The coarse and fine weighing technology is adopted to accurately weigh slurry and powder; the intelligent dosing technology is adopted to realize real-time monitoring and adjustment of the status and proportions of raw materials; the production line is characterized by high weighing precision, stable and controllable proportioning, high production efficiency, and stable quality of finished products. It includes slurry pool, slurry tank, mixer, double screws, integrated weighing layer and intelligent aluminum powder feeding equipment.

## Transfer Equipment



### High transfer precision

- The first crane and ferry vehicle for resting and curing that rely on servo drive in the industry provide strong power and precise positioning to ensure efficient operation of the production line.



### Fast, accurate and stable

- Driven by floating gear, the crane and ferry vehicle run more smoothly, faster and with higher precision.



The transfer equipment is mainly in charge of the transfer of semi-finished and finished products in the production line and the scheduling of work stations. It includes all kinds of cranes, ferry vehicles, friction wheels, and tractors. The various walking mechanisms are driven by servo motors, supported by patented technologies such as efficient synchronization and floating gear drive, to ensure smooth operation, precise positioning, and continuous and efficient operation of the whole production line. Each equipment is equipped with an action interlocking mechanism, and the cranes are equipped with maintenance platforms to enhance operation safety and maintenance convenience.

## Saddle Circulation Equipment



### Fully automatic circulation

- The SPCI+AMES system is adopted to automatically schedule the waxing, anti-corrosion and drying of reinforcing mesh with takt time.



### Safe and efficient

- Independent partitioning of the hanging net stations for manual operation ensures the safety of workers, and the transfer of mesh cage saddle frames is fully automatic and efficient.



The saddle circulation equipment prepares reinforcing mesh or cage for slab production. The anti-corrosion and drying treatment of saddle circulation, jackrod drilling, jackrod pulling, mesh or cage is fully automatic. The automatic scheduling technology of SPCI+AMES system which is easy to operate, safe and efficient is adopted. It mainly consists of jackrod drilling and pulling cranes, saddle conveying line, waxing and anti-corrosion cranes, saddle frame ferry vehicle, drying oven, waxing pool, anti-corrosion pool, hanging net station, and storage station.

## Mixing and Pouring Equipment



### Even and efficient

- The double-layer cross blades plus draft tube mixing structure, with deflectors on the tube wall, ensures optimized powder feeding angle, even mixing, and high efficiency.



### The takt time is 3-5min.

- The slurry preheating function can reduce the process of regulating steam temperature in the mixer, which greatly shortens the mixing takt time.



The main function of the mixing and pouring equipment is to inject the slurry, cement, quicklime, gypsum and aluminum powder into the tube in certain proportions and order, then inject the even slurry mixture into the mold within a certain time limit, and complete the combing of foams in the slurry; the double-layer cross blades plus draft tube mixing structure ensures optimized powder feeding angle, even mixing, and high efficiency; through simulation and optimization, the vibrating pokers are arranged asymmetrically for more even combing of foams and higher strength of finished products.

## Resting and Pre-curing Equipment



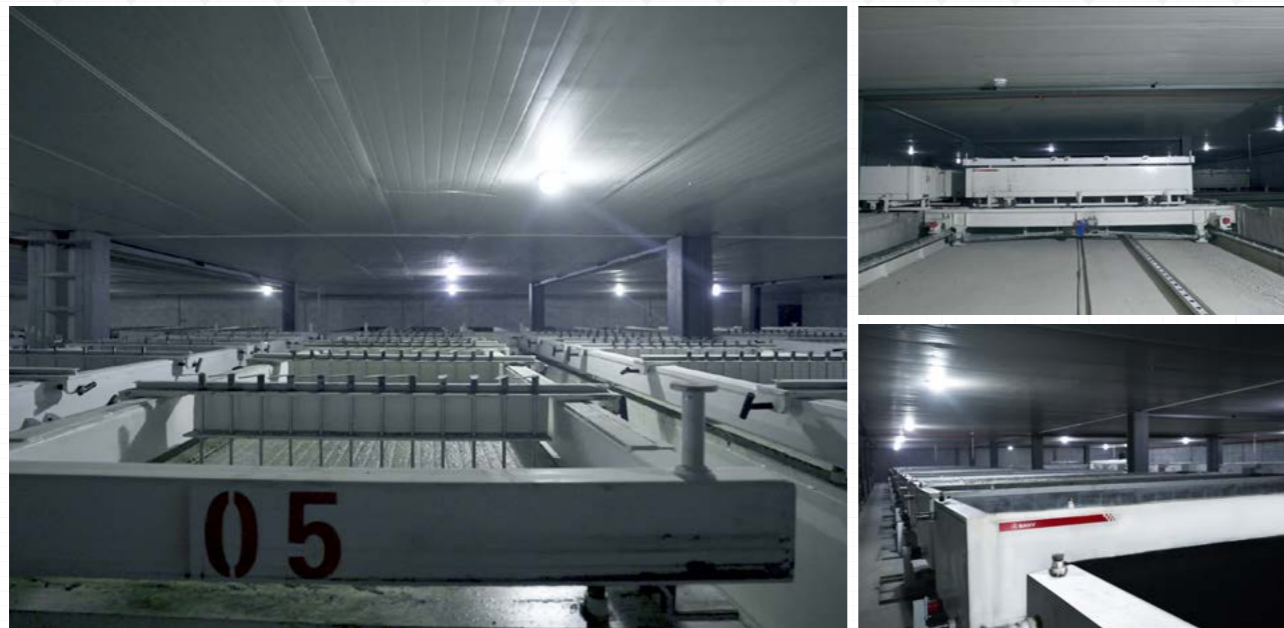
### Intelligent scheduling

- The SPCI+AMES management system schedules the storage/retrieval of mold carts as a whole and achieves intelligent scheduling and best takt time according to the different curing duration of



### Even curing

- The circular steam curing tube and the distributed control of temperature ensure more even room temperature for curing and improve the curing efficiency.



The resting and pre-curing equipment performs curing under constant temperature and transfer of mold carts after the pouring step is completed. Through intelligent scheduling and optimization of steam curing tube, the room temperature for resting and curing will be more even, the progress in slurry thickening and hardening can be grasped accurately, and the curing duration can be controlled. At the same time, high-speed ferrying equipment is provided to complete fast transfer of mold cart. It has the characteristics of even curing and efficient transfer. It mainly consists of the ferry vehicle for resting and curing, friction wheels, and insulation pipeline.

## Slab Cutting Equipment



### Intelligent control

- The SPCI+AMES management system matches the optimal cutting sequence and takt time according to the cutting characteristics of different slabs and blocks.



### Dry waste recycling

- Chain tracks are cleaner, and service life is increased. There is no need to keep the flushing pump running for a long time during production, saving electricity charge of RMB 200,000/year.



The slab cutting machine is designed to cut and shape the slab body before steam curing in the production line, including the cutting of the slab body's outer contour, cutting by thickness and length, and mortise cutting. The original patented technologies such as powerless dry cutting waste recycling and humanized wire hanging are applied to complete efficient and high-precision cutting with low energy consumption to produce super thin slabs under the scheduling of intelligent control system. It mainly consists of lateral cutting slotting machine, horizontal cutting machine, vertical cutting machine, cutting drive system, and purging and patching cutting machine

## Steam Curing Equipment



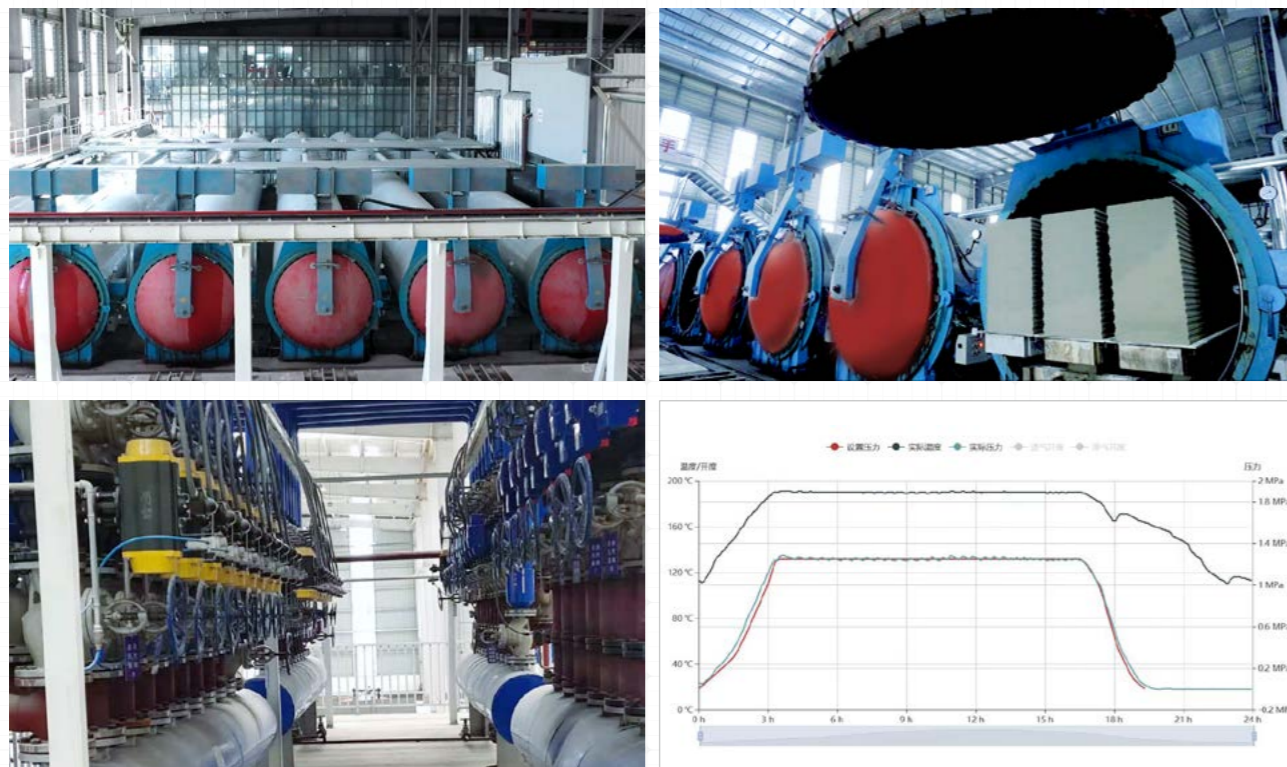
### Intelligent and efficient

- It can operate automatically throughout the whole process to reduce the dependence on workers' skills and realize unattended steam curing. It can precisely control air inlet, air guide and exhaust, with efficiency increased by 20%.



### Stable and energy-saving

- Through the scheduling of the SPCI-AMES system, the steaming pressure curve can be controlled with accuracy up to 95%, cracks in slabs during the steam curing process can be reduced by 90%, and the energy consumption can be reduced by more than 30%.



The steam curing equipment mainly consists of the automatic steam curing system of autoclave which includes a high-precision proportional control valve and PLC control system. Each autoclave is controlled by separate electric control cabinet to operate functional modules such as 100% automatic steam curing process, including automatic vacuumizing, automatic temperature regulating, automatic air guide, and automatic drainage and sewage disposal. With good human-machine interface available, customers can adjust the steam curing process curve conveniently, with real-time steam curing curve control accuracy up to 95%.

## Severing Equipment



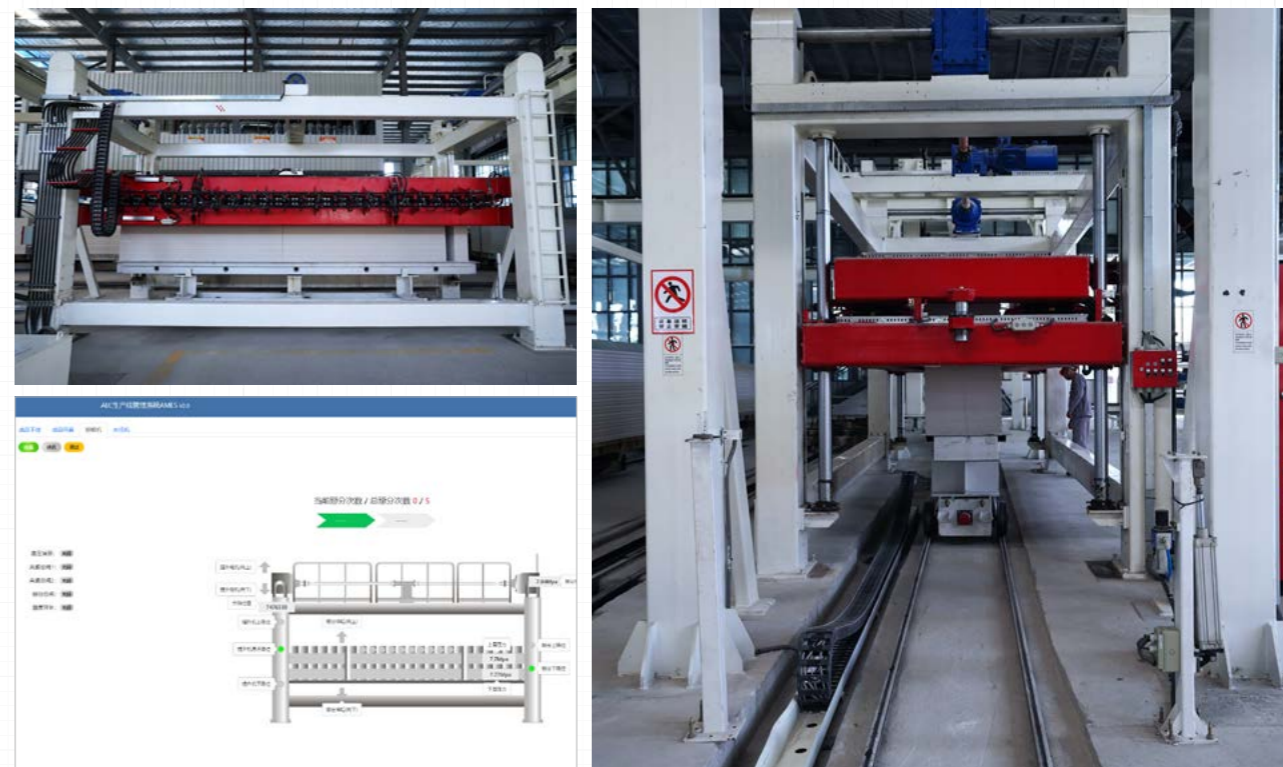
### Convenient setting

- Intelligent proportional control of gripping and severing pressure, quick setting of pressure and time.



### Stable and reliable

- It can sever slabs of 50mm and above, with low breakage rate under fast severing.



The severing equipment is used to sever the slabs and blocks which are adhered after steam curing. Hydraulic gripping and motor lifting are adopted to ensure reliable gripping and smooth lifting; intelligent proportional valve control is provided to support automatic adjustment of the gripping force and severing pressure; the control panel includes good HMI; the severing thickness and other parameters can be adjusted automatically, with easy operation and low breakage rate of finished products.

## Finished Products Processing Equipment



### Stable and reliable

- The equipment is stable and reliable. Slabs and blocks are automatically packed offline and the offline delivery process is fully automatic, with low breakage rate.



### Intelligent and efficient

- The SPCI-AMES system is used for slab scheduling and block offline delivery, with slabs and blocks automatically distinguished to realize efficient automatic operation.



The finished products processing equipment mainly completes the automatic offline delivery of slabs and blocks. It consists of slab combination conveying line, slab conveying line, rotating gripper, pallet dispenser, and automatic packing machine. The conveying line is designed with frequency conversion conveying technology with adjustable speed; the pallet dispenser stores and automatically dispenses the pallets; the rotary gripper realizes combination and stacking of blocks; the packing machine completes automatic packing and offline delivery.

## Introduction to Finished Products of SANY AAC Production Line

### AAC slabs are the best environmentally friendly material for prefabricated construction

The new building material of Autoclaved Aerated Concrete (AAC for short) is a porous concrete forming slab made from the main raw materials of fly ash, silica sand, cement, and lime through steam curing under high pressure. It can be used as wall materials and roofing panels. It is a new type of building material with superior performance and has eight characteristics that are incomparable to traditional building materials.

### Eight characteristics of AAC slabs



#### Fire safety

- A 100mm AAC slab can resist fire for >4 hours.



#### Light weight and high strength

- It weighs 1/3 of clay brick and 1/4 of concrete.



#### Green and environmental protection

- From raw material to production process, all wastes and residues can be recycled.



#### Dimensional accuracy

- Industrialized manufacturing, with slab dimension accuracy to less than 1mm



#### Sound insulation and noise reduction

- It can meet the 30-60 decibel building sound insulation requirements and provides sound absorption.



#### Thermal insulation

- AAC slabs have low thermal conductivity and are 10 times more insulating than concrete and 5 times more insulating than fired perforated brick.



#### Easy construction

- AAC slabs can be up to 6m long, which facilitates the construction of large span structures.

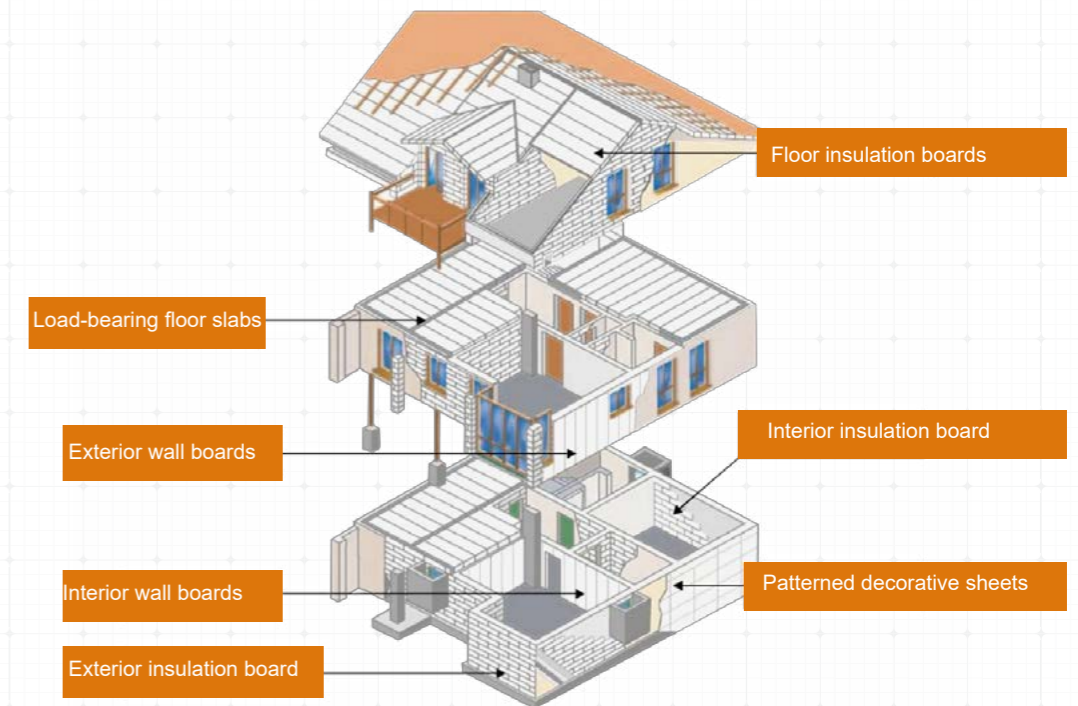


#### Enduring

- AAC slabs are inorganic materials with a stable internal crystal structure.

AAC slabs are used in a wide range of applications.

SANY CONSTRUCTION  
TECHNOLOGY CO., LTD



# WORRY FREE SERVICE

Guided by the service concept of “all for customers and creating value for customers”, PCTEAM provides customers with services such as plant construction consultation, process design, professional installation, production training, after-sales service, and talent training.

## Plant Construction Consultation



### New Park Planning

Starting from the customer's intention, PCTEAM's pre-sales team will fully cooperate with the customer to provide technical conditions, main land indexes and energy consumption indexes for the construction of the proposed plant; it will also cooperate with the customer to provide the general plan layout, logistics plan design, plant design, and storage yard design of the proposed AAC industrial park; it will also provide the main standard parameters of offices, dormitory, and other buildings in the proposed industrial park, as well as the plan and design of auxiliary implementation equipment (such as power distribution room, pump room, and boiler room).



### Old Plant Renovation

For old plant renovation projects, PCTEAM's pre-sales team will communicate with the customer as soon as possible and provide the planning scheme and construction plan of AAC production line for the proposed park after combining the customer's demand with the existing conditions of the plant.



### Large-scale Project Planning

For large projects, PCTEAM's pre-sales team can also assist customers in project feasibility analysis and provide consulting services for them.

## Process Design



### Design Services

PCTEAM's process design team can not only provide customers with a complete set of production process flow chart design, but also provide a full set of production equipment configuration plan according to the customer's site condition and specific requirements.



### Free Offerings

PCTEAM's process design services provide customers with a full range of value-added services, such as production organization, equipment selection, and determination of energy consumption indexes.

## Professional Installation

PCTEAM has professional installation service teams of nearly 300 members in more than 30 provinces and cities across China that can provide efficient and professional installation services

AAC production line is a set of equipment that is highly automated and is able to operate under complex operating environments and meet high reliability requirements. On the one hand, high manufacturing quality is needed; on the other hand, excellent on-site installation is essential. The equipment of AAC production line is 70% quality and 30% installation. In order to ensure the best quality products to customers, PCTEAM has prepared meticulously in terms of installation personnel, tools and equipment, workmanship, and material modular design.



### Technicians with Excellent Skills

■ In order to guarantee the quality of installation services, the installation service personnel of PCTEAM are all inherent resources of the company. At the same time, the company organizes regular training and assessment to ensure that their skills and product knowledge are in the best condition.

■ The core employees of PCTEAM's installation service team are selected from tens of thousands of employees from SANY Group through a strict screening process. They are qualified for special operations (crane, forklift, lifting, welding, electricity, gripping) and have proven excellent work performance. Most of the installation employees are multi-skilled workers with excellent skills.

### Top-quality Tools

■ A handy tool makes a handy man. In order to improve the quality and efficiency of installation, the company has equipped the installation team with a full set of professional tools of the best quality in the industry according to the installation working environment. The electrical installation and debugging personnel are also equipped with special tool kits to greatly improve the quality of electrical work and better guarantee the stable operation of the products.

### Installation Operation Manuals

■ AAC has a wide range of equipment, and the management team has prepared an installation operation manual for each equipment, with each step of equipment installation guided by a standard manual. Thus, each team is highly consistent in the quality of products they install.

### Parts Prefabrication and Product Modular Design

■ Starting from the design source, the products are made modular. Most of the assembly work for most products is done in the company, and the modules are assembled by at the customer's site to reduce the amount of on-site work and operational difficulties.



PCTEAM's management team also keeps abreast of the progress on-site in real time through digital means, requiring all employees to be dressed in standard uniform. Each team holds meetings and organizes the installation site on a daily basis to meet the 6S requirements, namely sort, set in order, shine, sustain, standardize, and safety. This digital management approach also enables timely scheduling and resolution of abnormalities to ensure that standard projects are delivered within the specified time.

## Production Training

### Theoretical training

- A systematic introduction to the equipment composition, working principle, main performance, and general information of the production line.
- An introduction to the operation, maintenance knowledge, and simple troubleshooting of each equipment
- Production formulas of Classic AAC blocks and slabs.

### Practical operation

- Organize a series of practical courses such as on-site operation of equipment
- Provide in-plant services during the production of components
- Organize training on the whole process of AAC production.
- Organizing training on the standards and main quality control nodes for quality inspection of AAC product process and finished products.
- Organize professional and technical personnel to guide the production and explain the process in detail on site.
- Arrange technical personnel to follow up and give feedback on production on site based on the consultation between both parties at appropriate time.



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## Talent Training

Hunan SANY Polytechnic College is the only school in the industry that is authorized to grant college degrees under the approval of the Minister of Education. Around the three important aspects of design, manufacturing and assembly of construction industrialization, it builds professional clusters in the whole industry chain, such as BIM design, plant manufacturing and prefabricated construction and creates a talents training base and a research center of construction industrialization. It joins hands with upstream and downstream enterprises to train professional talents for the whole industry chain from design to manufacturing and prefabrication for construction industrialization. It actively organizes basic training to "eliminate illiteracy", summit forums and special training, builds a platform for talents training and exchange in the industry, and delivers operation and management talents for the construction industrialization industry.



## After-sales Services

### “12127” Service Commitment

- Making reply via telephone or WeChat within 1 quarter
- Solving problems online within 2 hours
- Resuming temporary production or solving problems offline within 1 day
- Delivering common accessories or solving problems offline within 2 days
- Solving special problems within 7 days

### Service Concept

All for customers and creating value for customers

### Service Commitment

Choose SANY and enjoy lifetime worry-free services

### Service Target

Exceeding customer expectations  
Exceeding industry benchmarks

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[www.pcteam.com](http://www.pcteam.com)

# Industrialize architecture

## SANY CONSTRUCTION TECHNOLOGY CO., LTD.

SANY Industrial City, Changsha Economic and Technological Development Zone, Hunan, China  
Tel: 400010 3311

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