

Example for an AAC production line layout.

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Turnkey services for autoclaved aerated concrete projects

Several aspects need to be considered when building and managing an AAC factory, including market research, market demand identification, site selection, raw material analysis, investment budget, investment return period, environmental management, energy management, and many other aspects and perspectives. However, investors cannot always fully cover all these aspects in a short period of time. Therefore, Dongyue has been meticulously building turnkey projects since 2010, providing effective factory construction consulting and turnkey services for investors, reducing project research and construction time, as well as reducing investment risks.

Analyzing market demand and feasibility of investment

Presently, the global application of AAC products is very diverse. According to survey data from the European Autoclaved Aerated Concrete Association, Europe is the birthplace of AAC with approximately 140 AAC factories currently operating. Asia is the region with the most AAC production lines, with approximately 2800 factories, of which over 2000 are situated in China. But there are only very few AAC plants in Africa, North- and South America and Oceania.

Due to the superior performance characteristics of AAC products, such as low weight and high strength, superior thermal insulation, fire and noise reduction, and earthquake resistance, Dongyue is willing to contribute its efforts to the global promotion of AAC, allowing more houses in different regions to be built with AAC products, and allowing AAC to enter the next century of high-quality development. Dongyue was pioneering the AAC industries in countries like Vietnam, Cambodia, Myanmar, Philippines, Uzbekistan, Nepal and some more in the past 13 years. The company conducted investigations on the status of wall materials in various countries and regions, analyzed the feasibility of AAC factories in these regions, conducted investment analyses, and carefully calculated the return period to help these countries and



Dongyue's first AAC production plant in Vietnam.

regions end their history of not using AAC products and assist in preparing national standards for AAC products.

Sharing AAC production management experience

The production line of AAC blocks and panels can be divided into 10 sections according to the process flow, namely the raw material crushing and grinding section, the raw material storing section, the weighing and mixing section, the static curing section, the demolding and cutting section, the grouping section, the autoclaving section, the finished product separation section, the packaging section, and (for panels) the reinforcement processing section.

The production line of AAC should also include experienced personnel. Based on changes in raw materials and market requirements for product grade or quality, the formula ratio, static curing process, steam curing process, etc. should be adjusted in a timely manner to meet market demands and effectively control production costs.

Dongyue has 20 years of experience in process design and equipment manufacturing, with over 800 customers worldwide. It has rich experience in factory construction, process planning, and project general contracting. The company has built production lines for AAC blocks and panels using siliceous materials such as quartz sand and fly ash. Dongyue has accumulated substantial production management experience, providing a worry-free guarantee for the operation of the new factory after its establishment.

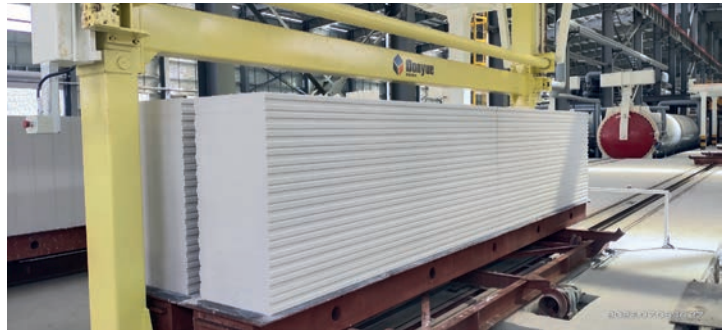
Reliability of auxiliary equipment and worry-free after-sales service

AAC production lines consist of more than 150 types of equipment or materials, mainly including autoclave, ball mill, boiler, slurry machine, pouring mixer, cutting unit, loading crane, turning table, separator, packaging machine, steel welding machine and many other key equipment.

With regards to processing and manufacturing specialized equipment, Dongyue has established a company branch to independently research, develop, produce and manufacture pressure vessels, such as autoclaves, sub cylinders, gas storage tanks, etc., to ensure the supply and quality of large equipment. In terms of supplying general equipment, high-quality Chinese brands are selected, such as Dabo Pump and Jutong Oiling Machine, etc., to ensure the quality and stability of outsourced equipment. In terms of equipment for components, internationally renowned brands such as SKF bearings, SEW reducers, Siemens motors, Siemens PLC, Schneider Electric, etc. are selected to ensure the stability and versatility of components and solve the concerns of maintenance in foreign markets.

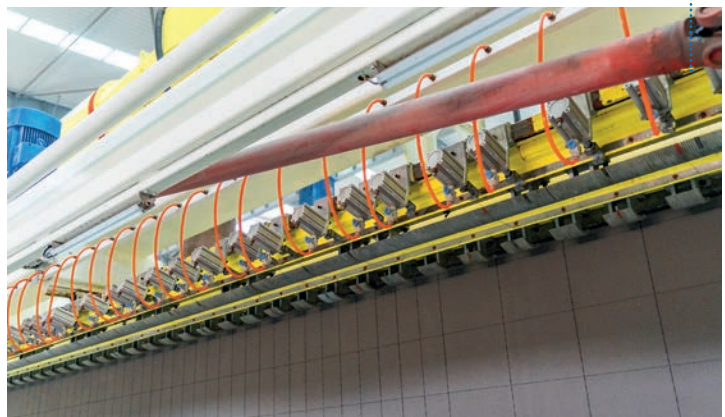
Raw material analysis and testing

After a hundred years of development, siliceous raw materials suitable for the production of AAC products are no longer limited to quartz sand. Additional materials, once treated, can also be used as siliceous materials for the production of AAC products, such as sea sand, fly ash, iron ore sand, ceramic saw mud, granite saw mud, coal gangue, etc. However, based on the characteristics of these materials, it is necessary to test their components such as silicon, aluminum, calcium, magnesium, iron, and carbon, and analyze the related feasibility of producing AAC products and the impact on the production process.



AAC panels and blocks made with Dongyue equipment.

High precision vertical cutting machine and multi column horizontal cutting machine.



Dongyue operates two laboratories, one for testing the characteristics of raw materials and finished products, and the other for conducting production tests on different raw materials. The laboratory is equipped with ball mill, mixer, measuring scale, drying furnace, and autoclave, which can complete the entire process from raw material ball milling to slurry production and autoclave curing. Based on the chemical analysis of the raw materials, the process formula is calculated, and experiments are conducted. When necessary, large-scale trials on the company's own production line are completed to ensure that customers can produce high-quality products after investing in the factory.

Factory Design and Automation Service Team

Dongyue attaches great importance to factory planning and design, adhering to the principle of prioritizing process planning. It has seven designers who can effectively plan and design in the early stages of project investigation. Design and planning of production capacities, models, product specifications, packaging methods, etc. is based on the different conditions of each country and region, market conditions of the factory location, and financial conditions for customer investment. For example, there are two working methods for autoclaves, double door and single door, and packaging methods include bundling and stretching film. The production capacity can increase from 100 m³ to 2000 m³ per day, to meet different market demands.

A professional electrical design team is also a major feature of Dongyue. Due to the complexity of the AAC process, relying on external suppliers may not suit the production process. Therefore, Dongyue established specialized electrical automation systems, which are adjusted to the equipment and production process design, to form a complete and fully automated production line operation system. The system can simultaneously achieve centralized control, regional control, and single machine control, and includes remote operation and maintenance functions, order management systems, etc. Through material management, production process control, data analysis, etc., a foundation for the implementation of MES systems is provided.

Sophisticated machining center to ensure equipment accuracy

In order to ensure sufficient processing and manufacturing capabilities, as well as excellent AAC production facilities, Dongyue can supply hundreds of pieces of production equipment, including CNC lathes, milling machines, drilling machines, grinders, laser cutting machines, CNC machining centers, heat treatment centers, etc. The frame and surface of the host equipment can be processed, such as the mold bottom frame, the side plate bottom frame, the crane walking frame, the end beam, the separating machine frame, the turnover platform frame, the crane walking track, etc., to ensure the accuracy of their horizontal assembly.

Dongyue Laboratory production testing.



In addition, all power equipment are equipped with a platform for performance testing in the factory. Only qualified equipment can be shipped to the customer's construction site.

Establish overseas offices and improve international market services

In 2009, Dongyue Machinery established its first overseas office in Vietnam to develop the country's block machinery market. Dongyue successfully built seven sets of AAC block production lines and over 50 sets of concrete hollow brick lines in Vietnam. While developing the market, Dongyue found that technical personnel and accessory services are particularly important for overseas markets. Therefore, it dispatched technical personnel to the office to serve new and old users and established a common accessory library to achieve a timely supply of repair parts.

From 2011 to 2023, Dongyue extended its overseas office model to India, Indonesia, Uzbekistan, and Cambodia, selecting regions with more users and convenient transportation to share technical service personnel and accessory libraries, establish and improve overseas market service systems, and lay a foundation for further development of the international market.

Turnkey capability for AAC production

After many years of optimization, Dongyue has fully developed the turnkey service capability for AAC production. These services are supported by a comprehensive design team, technical team, sales team, engineering project team, and installation team.

Pre-sales services include factory construction condition consultation, cost analysis, investment budgeting, raw material testing and many more. The in sales services cover the on-site construction drawing handover, assistance in supervising civil construction, professional equipment installation, etc.

Dongyue's after sales services offer remote operation and maintenance systems, project manager on-site tracking services, 7/24 service hotlines, a 2-hour response to customer issues, a 24-hour arrival at the customer site (from the branch office), two annual regular follow-up visits, zero profit accessory sales, etc.

The extended services include AAC industry resource sharing, market information sharing, product standards analysis, equipment upgrade planning, diversified product processing planning, construction method advise for AAC blocks and panels, student training, production management experience sharing and market promotion experience sharing.



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