

New AAC plant adds premium product to BS Group in Uzbekistan

Ever since the demand for faster and more efficient construction started to grow in Uzbekistan, Aircrete Europe has been part of the wave to introduce the knowledge and experience, to bring high-quality AAC products to local construction projects. The company Bekzodsher (BS Group) was one of the first to use AAC blocks in its construction projects in Uzbekistan and after extensive evaluations and rounds of talks with all major AAC equipment suppliers, BS Group decided to engage Aircrete Europe to build a new AAC facility in 2020 in the town of Syrdaryo, 75 km southwest of the capital Tashkent (Fig. 1a and Fig. 1b). The factory is based on the latest state-of-the-art European Aircrete technology with a 1,000 m³/day installed capacity and additional space for expanding to 1,500 m³/day and production of reinforced AAC panels and AAC lintels. Aircrete took on this project as a turn-key supplier, which included the delivery of the building, infrastructure and of course the full technological production line, including piping, steam generation, etc.. Delivering and commissioning a plant throughout the COVID pandemic proved to be a hard task but all involved teams managed to work around these challenges to keep the effects on the project timeline and budget to a minimum. Today, Aircrete is proud to announce that BS Gazoblok brand AAC blocks are officially being produced since March 2023 and, due to their very smooth (so-called super smooth) surface and premium appeal, will surely become a trendsetter for the local construction industry.

The potential for Autoclaved Aerated Concrete in Uzbekistan

Back in 2019, a decree was signed by the president of the Republic of Uzbekistan about “Additional measures to accelerate the development of the building materials industry”. The decree provides for the specialization of 24 districts (cities) in the production of building materials, including autoclaved aerated concrete blocks, reinforced concrete products and further

instructs to increase the production of AAC blocks by 7 times. Additionally, over the last few years, the incumbent president initiated a process of liberalization resulting in an increasing appetite of (foreign) external financiers to extend debt and equity financing to local projects to support the country's growth. In macroeconomic terms, Uzbekistan is the hottest prospect for development in the CIS region with its close to 35 million population, a fast urbanization rate, and 5.7% GDP growth in 2022 (World Bank).

Fig. 1a: BS Gazoblok future production hall in construction in 2022



Fig. 1b: BS Gazoblok production hall in 2023





Fig. 2: The heart of an AAC factory with the unique Aircrete flat-cake cutting line

The Aircrete Hybrid Model

With the introduction of large-sized AAC blocks in the Uzbeki market, BS Group wanted to become a strong supplier with a competitive edge in the Syrdarya region and adjacent markets of Tashkent. Hence, the plant was designed by Aircrete based on the latest cutting technology (Fig. 2). The plant was designed with an initial capacity of close to 1,000 m³/day of AAC blocks (with densities of 400 – 600 kg/m³) to find the sweet spot between the level of investment and ability to enter the market strongly. Of course, as any Aircrete factory, the plant can be modularly expanded by adding more autoclaves (to a maximum capacity of

600,000 m³/year). An important aspect for the investor to engage Aircrete, was to have the future option to make AAC panels and lintels, for which the Aircrete flat-cake production technology provides a large variety of possibilities and flexibilities. The envisaged expansion to produce AAC panels is planned for 2024.

The BS Gazobeton plant is now able to produce AAC blocks with a very smooth surface. Due to Aircrete's unique flat-cake cutting technology with limited cake handling and double-wired cutting technology, it is possible to achieve very minimal waste levels as Aircrete factories do not experience sticking issues and thus do not require separating of layers of cakes.

Fig. 3: The raw materials preparation area with 3 (150 m³) slurry tanks and a 25 ton/hour ball mill.



As with every Aircrete factory, an advantage from the Aircrete cutting technology is the possibility to produce AAC products with the attractive very smooth surface (resulting from non-tilting and cutting with double, oscillating wires). This allows BS Gazobeton to sell a product with fewer finishing requirements as after only skimming the joints, the wall already becomes directly ready for wallpapering and/or painting, which is a major competitive advantage in the market.

The Aircrete factory for BS Group is yet another factory supplied by Aircrete under the Hybrid Plant concept, whereby the core part of the equipment comes from the Netherlands and a larger than usual part from China (Fig. 3). With Aircrete's own manufacturing facility in Shaoxing, China, Aircrete is able to in-house manufacture a large variety of customized equipment, based on Aircrete's original European engineering and design specifications and, in addition, maintaining full quality control of the end result (Figs. 4, 5, 6). As a result, BS Group was able to optimize the total project investment in the plant, while still owning a European-designed and built factory. Due to the unique combination of European design and engineering excellence combined with more cost-effective production in Asia for part of the factory the Hybrid Model seems to rapidly becoming a big success in selective markets in Asia, Africa and Latin America. For more information on another hybrid Aircrete project, please refer to the article "Innovative AAC plant in China sets new standards for panel production" in 1st edition of AAC Worldwide in 2022.

Sherzod Vafoev, the owner of BS Group, commented: "It was of great importance for me as the owner of BS Group to select a technology partner that was able to support BS Group beyond just the equipment supply. As Aircrete is recognized for having made strategic co-investments in a few AAC factories, the important and complex know-how of the AAC production process is embedded in the Aircrete organization. That fact, in combination with the - in my view - superior Aircrete Flat-Cake cutting technology, made BS Group decide to engage Aircrete for this important project. In addition, Aircrete enabled this project with their support by arranging export finance through Invest International, which again proves their reputation as a true, integrated technology partner and not just a machine supplier."

Invest International enables export finance for BS Group's AAC factory

Another element in this project, was the use of attractive export finance for BS Group, through a bank-to-bank export finance construction between the Dutch Invest International and a local bank in Uzbekistan. Invest International, the Dutch joint-venture between the Dutch State and the Dutch Development Bank FMO, provides innovative finance solutions contributing to the realization of the Sustainable Development Goals. For the project with BS Group, Invest International

Fig. 4: Stacking of green cakes and de-stacking of white cakes on the background. Examples of equipment produced at Aircrete's manufacturing facility in China.





Fig. 5: Autoclave loading and unloading with the traverser car.

provided a EUR 15.4 million loan to support the export of yet another Aircrete factory. As project financing is becoming a more and more important aspect of successfully realizing AAC projects, particularly in today's world with increasing interest rates and inflexibility of local commercial banks, Aircrete Europe puts great importance on offering this option to its client globally. Over the past decade, Aircrete Europe has already successfully realized projects with dif-

ferent structures of export financing, ranging from simple, smaller supplier's credits for factory upgrade projects (already available from EUR 150k), direct buyer's credits for the Aircrete equipment scope, but also complete bank-to-bank funding for the entire project. See for more information the article "Invest International enables export finance for the first Aircrete project in Uzbekistan" from November 2021 on the Aircrete website.[1]

Fig. 6: Automated packing line with a Stretch Hood Foiling Machine.



The road to becoming an integrated, leading player in the Uzbeki construction industry

A decade ago, BS Group was solely focused on construction and development activities. Nevertheless, already back then the ambition for a strategic vertical integrated building group existed. Over the years, the group expanded with other activities, and with the new Aircrete factory, BS Group has now also added autoclaved aerated concrete to an already wide range of construction products offering, particularly interesting for the in-fill walling market for its own construction projects and other clients in Uzbekistan (Fig. 7). It was also a very necessary move by BS Group, as over the past decade, AAC rapidly became a number one product of choice as it is renowned for the exceptional thermal insulation properties, durability and extremely fast construction speed. The BS Group's AAC blocks are widely used in residential, commercial, and industrial construction projects. Architects, engineers, and builders rely on the BS Group's expertise and reliable products to create energy-efficient and environmentally friendly buildings.

On the market side, BS Group continues to educate the local market on the advantages of AAC, utilizing its in-house engineering (>100 people) and design team. Together with other AAC producers in Uzbekistan, education on superior qualities of AAC continues. Aircrete Europe also continues its mission for a greener and safer construction world, by informing the Uzbeki construction industry about the benefits

of AAC products in modern construction (Fig. 8). A recent example of that is the participation in the UzBuild construction materials fair (of which Aircrete is considered a resident exhibitor) and, in addition, occasional presentations at industry events, such as the International Conference of the Construction Industry (the ICCI) in Tashkent last year.

According to Anton Kupava, Sales Manager at Aircrete Europe, this educational role is part of the core values of the Aircrete organization. "The establishment of this new AAC plant has an additional benefit of avoiding soil erosion associated with clay extraction for the production of traditional bricks, minimizing the negative environmental impact in the long term. Since we have been an official member of the European Autoclaved Aerated Concrete Association (EAACA) we feel an even larger responsibility to promote the advantages of AAC and contribute on our side with engineering and building the most sustainable AAC factories. Through continuously introducing new innovations and energy-saving solutions to the market, we ensure to remain on top (or even ahead) of global construction trends. We are committed to continuously promoting this through our worldwide presence at trade shows and conferences. At the next International Conference on Autoclaved Aerated Concrete (7th ICAAC) in September in Prague, we are presenting our latest views and insights on this".

Fig 7: BS Group utilizing AAC Blocks in its own projects in the city of Guliston, Uzbekistan



As for every AAC project, starting up the production is hardly ever without challenges. For this specific project, sourcing high-quality quick lime with fast reactivity value proved to be a challenge. Nevertheless, through in-house chemical engineering capabilities Aircrete (together with BS Gazobeton) managed to find a workable recipe to be ready for the construction season 2023. Meanwhile, a joint effort together with the local lime producer is ongoing to improve the lime quality.

Another main challenge that was encountered (which is an issue for many new factories) was the contracting of the right, quality personnel to run and support the factory operations. Through Aircrete's large international network this issue was solved by putting BS Group in contact with a number of experienced Turkish AAC professionals, that eventually were hired by BS Group to run the daily operations of BS Gazobeton. All in all, the factory is ramping up steadily (with Aircrete's continuous on-site and remote support) and is expected to reach designed capacity and stable final quality over the course of the next few months.

About BS Group

The BS Group is a multi-discipline privately-owned organization with headquarters in Guliston city, Uzbekistan. BS Group's core business is an EPC contractor with in-house manufacturing of concrete, dry mortar and other construction and finishing materials. Since March 2023, the company is producing autoclaved aerated concrete under the brand BS Gazobeton. The newly-opened factory is one of the largest factories in Uzbekistan for the production of AAC products, with an annual production capacity of up to 450,000 m³. ●

[i] <https://www.aircrete.com/aircrete-news/export-finance-for-the-first-aircrete-project/>



Fig. 8: Current way of building with red clay bricks is very labour intensive, leaves a lot of waste and requires extra reinforcement



Aircrete sponsors free download possibility of the articles for all readers of AAC Worldwide. Simply scan the QR code with your smartphone to get direct access to the Aircrete Company Channel.



Aircrete Europe
Munsterstraat 10
7575 ED Oldenzaal
Netherlands
T +31 541 571020
info@aircrete.com
www.aircrete.com



BS Group
Chupon ota str. 17
Yakassary area
Tashkent
Uzbekistan
T +998991502222
info@bsgroup.uz
www.bsgazobeton.uz