

North Khorasan **SABOK SAZAN SHARGH**

The only producer of AAC concrete in the density of 450-350 kg/m³
selected industrial unit in IRAN - 2016



Sabok Sazan Shargh Co.

"SABOK SAZAN SHARGH" company was established in 2011 with a production capacity of 150,000 M³ Autoclaved aerated concrete per year in Bojnourd, the capital of North Khorasan province.

This company is the only AAC concrete production factory in Iran that most of its machines are domestically made. It is also the only company in Iran that has the capability to produce AAC concrete in the density of 350-450 kg/m³



Autoclaved aerated concrete

AAC stands for Autoclaved Aerated Concrete, and is used to build walls and floors.

In terms of nature, it is a concrete product that is obtained by baking a mixture of cement, silica or silica sand, lime, aluminum powder and water at high pressure and temperature. It is physically solid, inelastic and porous, and its density is less than that of water. It has a light gray color and is somewhat malleable. This product has unique properties such as low density, heat insulation and sound insulation.

All these properties are due to the porosity of this product.

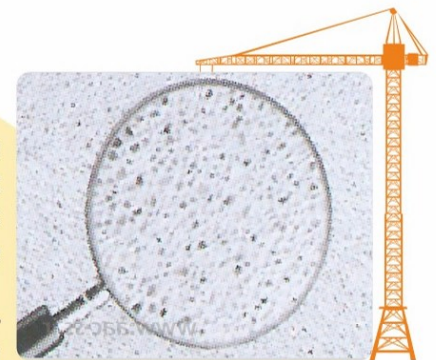
Strengths of lightweight concrete

Lightweight but Resistant and durable

Due to the use of new technologies in creating unique (cellular) porosities in the manufacture of autoclaved aerated concrete, the product is very light (almost half a barrel of water). And that means reducing the weight of the building. This will reduce the cross section of the skeleton and make the structure more resistant to the destructive force of the earthquake.

This product, despite its light weight, is durable and will have a very long life. For more than half a century, structures made in different climates of the world

have used autoclaved lightweight concrete, which is due to the excellent mechanical properties of this product. The strength and durability of this product is due to the filling of air cavities by calcium silicate and production under pressure of about 12 atmospheres.



Earthquake resistance

Excellent earthquake resistance of AAC makes it superior to other materials. AAC blocks are joined together by a thin layer of mortar to form an integrated wall, which increases earthquake resistance. The high surface to mass ratio of AAC reduces vibrations and makes it an ideal insulator for the building.



Excellent sound insulation

Using lightweight concrete can be a good solution to create a calm and pleasant environment at work and at rest. In many sources, AAC falls into the category of acoustic insulation building materials. According to ASTM standard, this product is classified in the category of very good sound insulation. The following tables show the classification of sound insulation according to ASTM standard and the study of sound absorption of AAC blocks based on thickness.



Sound absorption rate (DB)	Sound absorption rate (DB)	Description
20-30	Weak	Ordinary conversation can be clearly heard from behind the wall
30-35	Somewhat good	Loud conversation is heard, normal conversation is audible but not meaningful
35-40	good	a conversation is heard loudly but is not understood
40-45	very good	Loudspeaker, medium-volume radio and television are only slightly audible
50 & more	Excellent	Loud and high quality sound, soft or inaudible.

Thickness	10 Cm	15 Cm	20 Cm
The amount of sound absorption	39 Db	44 Db	50 Db
Type of sound insulation	Good and very good border	very good	Excellent

Frost resistance

The microcellular structure of AAC provides significant protection against the effects of frost. Freezing tests show that under these conditions there is no reduction in the strength of AAC. In practice, the continuous use in cold regions of the world and Iran in recent years is evidence of this claim.





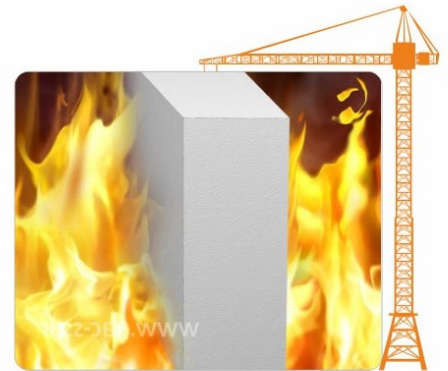
Fire resistance

Concrete is made of natural minerals that are non-flammable and transfer heat slowly. So that the average fire speed in places made of this type of block is about 3 cm per hour.

This feature introduces concrete in the category of fireproof walls.

Accordingly, the AAC is in the "Class A of Euro standard" for flammability, which is actually the best level in this field.

Concrete can also withstand up to about 1200 ° C.



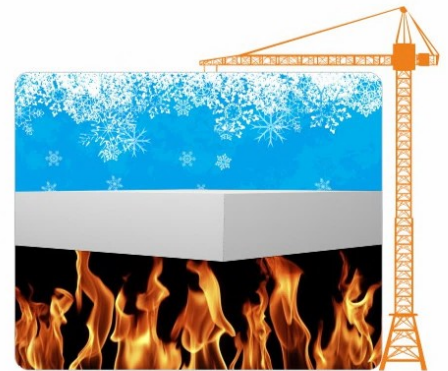
The minimum wall thickness	7.5 Cm	10 Cm	15 Cm
Fire resistance time	3 hr	4 hr	5 hr



Proper heat insulation

AAC has a high ability as one of the thermal insulation materials in the building due to the large number of small air bubbles in it.

Therefore, the research of German researchers on AAC walls shows that it is possible to save up to 28% in the cost of building cooling and heating facilities and up to 30% in the current costs of the installation sector.



Eco-friendly

Studies show that this concrete is fully compatible with the environment, so it is not harmful to nature. Due to the recyclability of AAC shear waste, this product does not produce any waste or contaminants.

AAC production does not require the use of valuable Clay and also does not cause severe pollution.

It can be said that using AAC is an approach to accessing a greener world.



Flexibility in working with AAC blocks

Working with AAC blocks is very easy. The AAC block can be cut according to the need in the place used, by the saw and therefore it is economical in terms of wage costs.

It is possible to place the installation location (socket outlets, power lines, etc.) on the AAC block, which eliminates the need for layers of gypsum soil.



Economic efficiency and speed in implementation

The very low weight of the AAC reduces the cost of transporting it to the project site. The amount of mortar used to install and execute this product is much less than other products such as bricks and pottery.

The use of AAC reduces the cost of the executive team, which has significant savings compared to other products.



Special Mortar (AAC adhesive)

Cement-based adhesive of AAC is used to connect lightweight wall blocks. Low consumption percentage, reasonable price, high strength and resistance and moisture resistance are the unique properties of this adhesive and do not require any additives other than water.

Block adhesive eliminates the heat bridge of the cement-sand mortar site and speeds up the installation of parts.



Technical specifications of AAC

Density: The volumetric mass of the product is (450-350) and (550-450) kg / m³.

Thermal conductivity: AAC has a thermal conductivity of 0.17 watts per square meter in Kelvin.

Compressive strength: The compressive strength of AAC (350-450) and (550-450) is usually between 20 to 40 kg / cm².

Tensile strength: The tensile strength of AAC is between 15 to 25% of the compressive strength and its shear strength is between 25 to 33% of its compressive strength.

Thermal expansion coefficient: AAC thermal expansion coefficient is about 8*10⁻⁶ Cm⁻² less than ordinary concrete and steel.

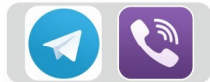
Water absorption: AAC due to its pore structure can absorb up to 60% of its weight in water, which is up to 40% of the weight in the form of penetration and then in the form of capillaries.

Advantages of Sabk Sazan Shargh Co. over other competitors



Selected industrial unit in 2016

Find us on:



A) Production of AAC in the density of 350-450 kg/m³ for the first time in Iran, which will lead to the following benefits for those involved in the construction industry:

- 1) Lightening the dead load of the building and reducing steel consumption for structural design and reducing costs.
- 2) More insulation due to more porosity
- 3) Reduce transportation costs by up to 20% so that in this company each trailer (for export) loads about 40 cubic meters, which is about 7 cubic meters more than other factories.

B) Production of AAC in different sizes (25-20-15-12-10-7 / 5) and also the possibility of production with the size required by the customer

C) High resistance to low density, which is about 35 kg/cm²

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