

Quick Facts Autoclaved Aerated Concrete (AAC)



AAC consists 80% air by volume, making it lightest available walling material (weights 1/3rd that of clay bricks).

Formed as a result of reaction of Aluminum on a proportionate blend of lime, Cement & Flyash, the hydrogen gas that escapes creates millions of tiny air cells giving it a strong honeycomb like structure.



It is further strengthened by high pressure steam curing in **Autoclaves**.

Invented in 1923, AAC now accounts for 40% of all construction in UK, 60% of all construction in Europe.

The rise in demand in India has been so phenomenal that in last 3 years the production has increased by almost 500%

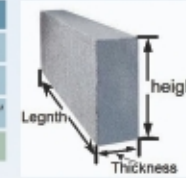
No wonder, AAC is termed as the Building Material Innovation of the century !

Innovative construction technologies like autoclaved aerated concrete blocks help cut construction costs by upto 30% this eco-friendly material also boasts of construction and saving in labour costs upto 20% Unfortunately many designers & architects are not aware of this technology.

- ECONOMIC TIMES

Dimensions

	mm	inches
Length	600 mm	24"
Height	240 mm	9.5"
Thickness	75 / 100 / 125 / 150 / 200 / 250 mm	3" / 4" / 5" / 6" / 8" / 10"
Tolerance	± 1%	



For the best result use with
aeroBOND
&
aeroPLAST

Landmarks built using AAC blocks



aeroBLOCK



aeroBLOCK

#7, Shivam Complex, Near Nalanda Medical College,
Kankarbagh Main Road, Patna-800 020 (Bihar)
Contact No. : 7372 0000 44 / 7372 0000 55
Email : aeroblock.ind@gmail.com

Production Unit at : Ranipur Industrial Area,
Didarganj, Patna (Bihar)

The Wonder Building Material

A Product by

Sinha Engicon Pvt. Ltd.

Specifications

Parameter	Value
Density (Oven Dry)	550 - 650 kg/m ³
Compressive Strength	4 N/mm ² (MPa)
Shear Strength	0.6
Modulus of Elasticity	2040 Mpa
Coefficient of Thermal Expansion	8.1 x 10 ⁻⁶ K ⁻¹
Water Absorption (at equilibrium)	8%
Thermal Conductivity	0.16 w/m ² K
Thermal Resistance (R Value)	0.46 m ² -°K/w
Drying Shrinkage	0.04%
Fire Rating	4 Hrs.(for 200 mm wall)
Sound Transmission Class Rating	44 db

aeroBLOCK

Fire Resistant

Its unique cellular structure provides excellent fire rating. Due to this Cellular structure AAC blocks do not disintegrate even in fire. It is best in class fire rating of 4 hours. The melting point of AAC blocks are over 1600°C, more than twice the typical temperature in building fire 650°C.



Cost Saving



Earthquake Resistant

Earthquake forces on structure are proportional to the weight of the building, hence light weight blocks show excellent resistant to earthquake forces. Regions of high seismic activities like Japan exclusively use AAC block. It has been proven to withstand wind loads of category 5 tropical storms.



Acoustic Properties

With its closed air pockets, AAC lightweight blocks can provide very good sound insulation/ sound absorption with an STC (Sound Transmission class) rating of 44. It can also be used as a sound barrier wall along busy roads. AAC wall has an excellent Sound transmission Class (STC) rating of 44. Result, virtually sound proof interiors!



Thermal Insulation

Highest thermal rating in the industry R30! Its cellular structure provides well insulated interiors, keeping out warm air in summers and cold air in winters. AAC reduces air conditioning cost by upto 30%



Ease of working

AAC can be drilled, sawed, nailed, and chiselled. Basically, one may work Autoclaved Aerated Concrete like wood, using wood working tools. Unlike standard concrete, AAC yields readily without chipping or cracking.



Pest Resistant

With solid wall construction and finishes, there are fewer if any, cavities for insects and rodents to dwell in. Termites and ants do not eat or nest in AAC blocks. Being made up of inorganic minerals, light weight blocks does not promote growth of molds.



Cost Impact Analysis Compare to Bricks

Cost Component	Saving in Component	Estimated Impact on Project Cost	Explanation
Mortar Material	66 %	1 %	aeroBLOCK are 8 times the size of conventional bricks, resulting in 1/3rd the number of joints. Thus an overall mortar savings up to 66%
Plastering material	55 %	3 %	Exceptional dimensional accuracy & smooth surfaces, eliminates need of plaster walls and allows for a final 2-3 mm skin coat (putty/gypsum plaster).
Wastage	10 %	0.5 %	Breakage in Bricks might be as high as 10% which in case of AAC blocks is less than 2%
Structural Material (Steel & Concrete)	18 %	7 %	Being light weight, AAC blocks drastically reduce the dead weight of the building. This translates to design of lighter structures leading to reduction in steel and concrete up to 20%
Increase in Floor space area	2 %	4 %	Due to exceptional thermal insulation & weather barrier properties, its possible to use thinner blocks, which results in increase of carpet area.
Savings in Capex for HVAC Systems	30 %	0.3 %	AAC blocks have excellent insulation properties, which results in saving in capex and opex of HVAC systems.
Savings in Labour Cost	20 %	3.5 %	AAC blocks are larger in size thus, saves in carriage cost. Use of aeroBOND and aeroPLAST reduces material premixing labour cost.
Total Impact on Project Cost		19.30 %	Thus, overall saving in the construction cost is approximately 20%

Water Barrier

Microscopic Structure of lightweight blocks does not allow for capillary action making it impervious to water. Its water barrier properties are further enhanced by adding silicone based additives.



High Strength

High pressure steam-curing autoclaving process gives AAC blocks unmatched strength to weight ratio higher than even M 150 concrete, and far exceeds the Indian Building Code Requirements.



Energy Efficient

AAC is 100% green building material & is a walling material of choice in LEED certified buildings (ITC centre the highest rated green building has been built using AAC)

AAC It is most energy and resource efficient in the sense that it uses least amount of energy & material per M³ of product.

Unlike brick manufacturing process which use precious layer too-layer agricultural soil, AAC uses fly ash (65% of its weight), thus provides the most constructive solution to the nation's fly-ash utilization problem.

