



AAC BLOCK

IS 2185 : PART 3

 CML No. 7200072806

Autoclaved Aerated Concrete (AAC), also known as autoclaved cellular concrete (AAC). It has been refined into a high thermal insulating concrete-based material used for both internal and external construction. Besides AAC's insulating capability, one of its advantages in construction is its quick and easy installation. The material can be routed, sanded or cut to size on-site using standard tools.

ADVANTAGES

- Improved thermal efficiency reduces the heating & cooling load in buildings.
- Porous structure allows for superior fire resistance.
- Workability allows accurate cutting, which minimizes the generation of solid waste during use.
- Light weight properties saves cost, labour expenses and transportation charges.
- Being light weight it increases the resistance against seismic activity.
- Larger size leads to faster masonry work.

PCS PER CBM

SIZE (inch)	625 x 240 (mm)	600 x 200 (mm)
2"	133.33 (PCS)	166.67 (PCS)
3"	88.89 (PCS)	111.11 (PCS)
4"	66.67 (PCS)	83.33 (PCS)
4.5"	57.97 (PCS)	72.46 (PCS)
5"	53.33 (PCS)	66.67 (PCS)
6"	44.44 (PCS)	55.56 (PCS)
8"	33.33 (PCS)	41.67 (PCS)
9"	29.63 (PCS)	37.04 (PCS)
12"	22.22 (PCS)	27.78 (PCS)

VARIOUS SIZES, EASY WORKABILITY & DESIGN FLEXIBILITY

GLOBCON AAC BLOCKS can be easily cut, drilled, nailed, milled and grooved to fit individual requirements and available in custom sizes

GLOBCON AAC BLOCKS simplified hydro-sanitary and electrical installations, such as pipes or ducts, installed after the main construction is complete.



PARAMETER	GLOBCON AAC BLOCKS	CLAY BRICKS
Sizes : L x H x T L x H x T	600 x 200 x 50 to 300mm 625 x 240 x 50 to 300mm	225 x 75 x 100mm
Compressive Strength	≥ 4 N/mm ² (As per IS:2185)	2.5-3 N/mm ² (As per IS : 1077)
Dry Density	550 - 650 kg / Cum (oven dry)	1950-2000 Kg / Cum
Fire Resistance	2 to 6 hours (depending on thickness)	2 hours
Sound Insulation Index	42db for 200mm thick wall	50db for 230mm thick wall
Structural Cost	Steel saving up to 15% & Concrete upto 7%	No Such savings
Cement Mortar Consumption	Requires less due to flat, even surfaces & less number of joints	Requires more due to irregular surface & more number of joints
Breakage & Utilization	Negligible breakage almost 100% utilization is possible	Average 10 to 12% breakage, 100% utilization is not possible
Construction Speed	Very high due to bigger size, light weight & easy to cut & drill in any size or shape	Comparatively Slower
Efflorescence	No such chances, which can improve the durability of wall along with plaster & paint in a long run	Most chances are there
Contribution to Carpet Area	3-5% due to less thickness of walling material	No Contribution
Energy Saving	Apx. 30% reduction in Air-Conditioned load for both heating & cooling	No Such Saving



TECHNICAL PARAMETERS OF GLOBCON BLOCKS :

SIZE AND SPECIFICATION

DIMENSIONS	mm	Inch
Length	600 / 625 mm	24" / 25"
Height	200 / 240 mm	8" / 9.6"
Thickness	75 / 100 / 125 / 150 / 200 / 225 mm	3" / 4" / 5" / 6" / 8" / 9"
Tolerance		± 1%

SPECIFICATION

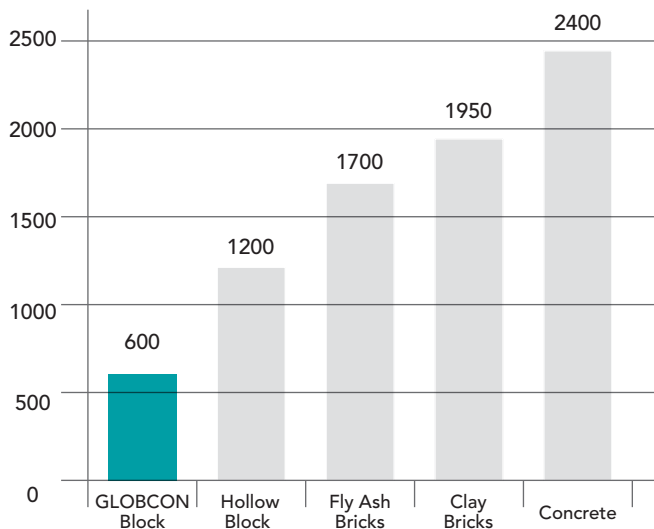
Parameter	Value
Compressive Strength	≥ 4 N / mm ² & above
Dry Density	550-650 kg/ cum (oven dry)
Fire Resistance	02 to 06 hours (depend on wall thickness)
Sound Insulation Index	45db for 200 mm thick wall
Thermal Conductivity	0.20 w / m° k
Water Absorption (at equilibrium)	15%

APPLICABLE IS CODES

IS2185 (Part III) : Specification for concrete masonry unit (AAC Blocks)

IS 6041 : Code of practice for construction of AAC block masonry.

DENSITY COMPARISON OF WALLING MATERIALS :



BENEFITS & KEY FEATURES



High Thermal Insulation (K value: 0.12 W/mK)

- Low thermal conductivity.
- Thermal performance five times better than brick & ten times better than RCC.
- Provides good comfort in the interior area during all weather conditions.
- Saving in recurring energy cost in air-conditioning.
- Lowest K-Value amongst all AAC brands .



High Resistance to Air & Water Penetration

The AAC products have cellular and discontinuous microstructure, which are superior to the regular concrete in water penetration resistance. The external surface of AAC walls provides excellent resistance to air and moisture penetration than the traditional masonry products.



Superior Fire Resistance

- Fire rating of 4 hours
- Suitable for all fire-rated applications



Compressive Strength

AAC blocks have an average compressive strength of minimum 4 N/mm² which is superior to most lightweight blocks, 25% stronger than other products of the same density.



Sound Insulation & Absorption

The cellular structure of AAC Blocks provides superior sound absorption reduction up to 42 db. The aerated AAC Blocks system consists of millions of tiny non-interconnected air cells giving very low air porosity. This provides high resistance to the passage of airborne sound relative to density.



Insects/ Efflorescence Resistance

Inorganic materials, AAC block, does not promote fungus growth and keeps termites away; it also resists the wall from efflorescence.



Light Weight (Dry Density: 550-650 kg/cum)

- 1/3rd weight of clay bricks.
- Saving in cement and steel due to less dead load.
- Suitable for low soil bearing capacity zones.
- Faster constructions.



Durability & Dimensional Stability

AAC products have been in use for nearly 70 years. Since then, production has spread to most parts of the world. The material has proved its durability under significantly different climatic and chemical conditions. The linear expansion coefficient of AAC Blocks is approximately 0.02%



Earthquake & Weather Resistance

Lightweight blocks reduce the mass of the structure. Hence, it decreases the impact of the earthquake on a building. It has an excellent property to resist any weather condition.



Cost Saving / Economical

- AAC blocks are more prominent than clay bricks. So it reduces joints and mortar up to 66%.
- The uniform shape & texture of AAC blocks give an even surface to the walls. Thus there is about a 35% reduction in the cost of plastering.
- AAC significantly reduces the building's dead load, resulting in reduced steel up to 15% and concrete up to 7%.



Easier & Quicker to Install

Construction time is substantially reduced while using AAC blocks it can be cut using a handsaw, easy to chase for plumbing and electrical works hence provides minimum wastage due to excellent workability.



Increase floor space area

The use of 6" block instead of 9" bricks for the external walls leads to an increase in floor area between 3-5%. Variety in sizes of blocks helps in increasing carpet area.