

General Aspects

No.	PARAMETER	AAC BLOCK	CLAY BRICK
1	Structural Cost	Steel saving up to 15%	No such saving
2	Cement Mortar for Plaster & Masonry	Requires less due to flat, even surfaces & less number of joints	Requires more due to irregular surface & more number of joints
3	Breakage & Utilization	Negligible breakage almost 100% utilization is possible	Average 10 to 12% breakage, so 100% utilization is not possible
4	Construction Speed	Speedy construction due to it's big size, light weight & ease to cut in any size or shape	Comparatively slow
5	Labour output	Approximately double of conventional brick	Comparatively low
6	Quality	Uniform & Consistant	Normally Varies
7	Efflorescene	No such chance, which improves the durability of wall along with plaster & paint in a long run	Most chances are there
8	Fitting & Chasing	All kind of fitting & chasing possible (as per IS:1905)	All kind of fitting/chasing possible
9	Carpet Area	More due to less thickness of walling material	Comparatively low
10	Storage	Readily available at any time & any season in a short notice so no storage required	Particularly in monsoon, stock at site is compulsory which block large working space
11	Water Required	Requires less in wetting & curing, hence saving in electricity bill & labour cost.	Need more curing resulted to higher amount of electricity bill & labour cost
12	Energy Saving	Approximately 30% reduction in air-conditioned load for both heating & cooling	No such Saving
13	Maintanance	Less due to its superior properties	Comparatively High



LIGHT | **STRONG** | ECONOMICAL
AAC Blocks

Product History at a Glance

AAC (Autoclaved Aerated Concrete) Blocks, though largely new to many parts of India, it's not a new building material. It was developed in SWEDEN in 1920, in response to increasing demands of timber supplies. AAC is lightweight building stone, comprised of all natural raw materials. AAC block is used in a wide range of commercial, industrial and residential application and has been in use in EUROPE over 90 years, the Middle East for the past 40 years and in America and Australia for 25 years. It's an estimate that AAC now account for over 40% of all construction in UK and more than 60% of construction in Germany. In INDIA production of AAC block started in 1972. AAC is a lightweight, high strength building material and is produced in a variety of forms from blocks to structural floors and wall panels.

AAC is credited by LEED (Leadership in Energy and Environmental Design) and USGBC (US Green Building Council) as a "green" alternative to traditional construction materials. Indian Green Building Council (IGBC) recommends its use in India.

AAC consists of 80% of Air. It is manufactured by combining silica in the form of recycled flyash, cement, lime, water and an expansion agent-aluminium powder and paving it into a mold. When added to concrete, the aluminium powder reacts with the silica, resulting in the formation of millions of microscopic hydrogen bubbles. The hydrogen bubbles cause the concrete to expand to roughly five times its original volume. The hydrogen evaporates and leaving a highly closed cell aerated concrete. It is then cut into blocks which are then steam and pressure cured in an autoclaved. Using AAC is very advantageous because it is environmentally friendly qualifies as a "green" building material from manufacturing to recycling.

AAC is so lightweight, it weights 1/5" of the weight of the standard concrete, which results in lower transportation costs, faster work-flow lower material handling costs etc. AAC is in 'ready to build' material, requiring no onsite curing time. It has unparalleled workability because it can be sown, drilled, nailed, screwed and milled with common hand tools.

The accurate panels are finished with very thin mortar joint producing a surface that requires minimum rendering. AAC possesses excellent structural integrity, resisting moisture penetration.

AAC has outstanding durability qualities over traditional materials, like humidity, freeze/thaw cycles and chemical attack. AAC is non-combustible. It offers the greatest fire resistance than any building material.

The use of AAC eliminates the need for applying costly fire proofing materials. AAC has extraordinary thermal insulating qualities and because of its unique physical structure. AAC provides much greater thermal insulation than conventional masonry.

Its relatively low consumption of low materials, excellent durability, relative cost effectiveness and the ability to be recycled. AAC has been aptly called the "Superhero" of building materials.

One of the major advantages of AAC over other cementitious construction materials is its lower impact on environment. It has no efflorescence emission (white salt appearance) at large.

It is highly thermal insulating product used for both internal and external construction. It is easy and quick to install since the material can be routed, sanded and cut to size on site using standard carbon steel band saws, hand saws and drills. Major application of AAC products include light weight partition walls, protection of steel structure and lintels. The common sizes are (LxVxH) 600mm x 200mm x 200mm; 600mm x 150mm x 200mm; 600mm x 100mm x 200mm etc.



SATYAM
BUILDTECH

Autoclaved Aerated Concrete (AAC) Block

285, GIDC Phase-II, Dediyanan, Mehsana-384 002. (North Gujarat)
Phone : +91 2762 224072 Mob.: 94261 75767
E-mail : info@satyambuildtech.com Website : www.satyambuildtech.com

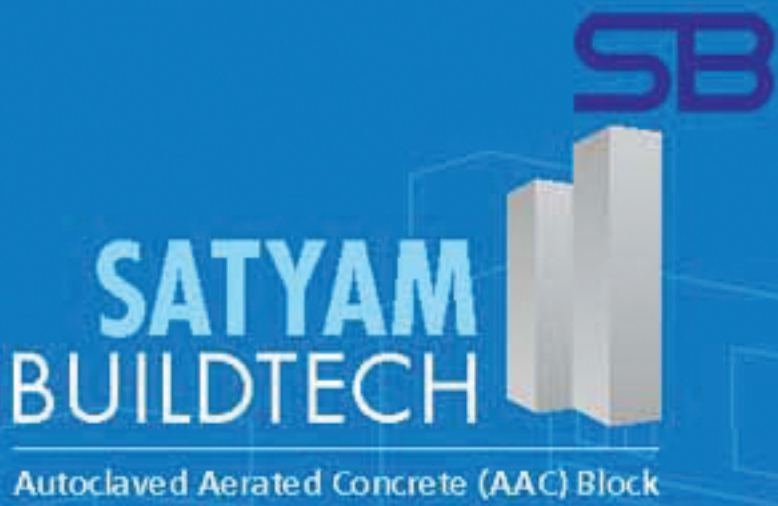
SB

SATYAM
BUILDTECH

Autoclaved Aerated Concrete (AAC) Block

LIGHT | **STRONG** | ECONOMICAL

AAC Blocks



Autoclaved Aerated Concrete (AAC) Block

SAVINGS OF CONSTRUCTION COST

AAC blocks are one third lighter than conventional clay bricks, hence, it reduce dead load of structure so we can save steel upto 22% to 25%, concrete up to 10% and AAC blocks are 7 time bigger than the size of the clay bricks. Bigger size means less number of joints so overall 60% reduction at cement mortar.

EASY AND FAST WORKABILITY & SIZES

AAC can be drilled, sawed, nailed and chiselled like wood, using wood working tools. AAC blocks comes with larger sizes less joints and light weight. So easy to handle and faster construction work.

SUPERIOR FIRE RESISTANT

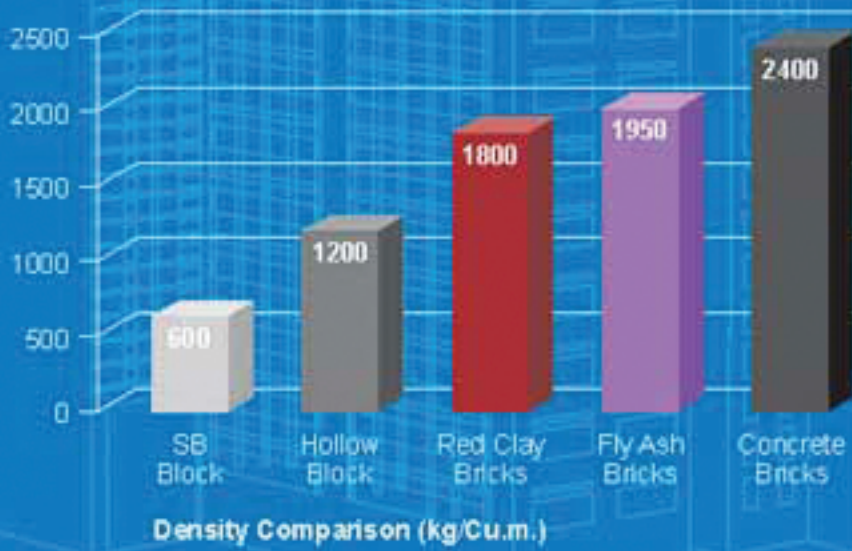
100 mm thick AAC block provided a fire resistance value of 4 hours and 150 mm thick block 6 hours. The melting point of AAC blocks are over 1600°C, more than twice the typical temperature in building fire 650°C.

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.

LIGHT WEIGHT

AAC block has density of 550-650 kg/m3 which is 1/3 times lighter than clay brick hence, AAC bricks is very light weight materials



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 blocks. It has been proven to withstand wind loads of category 5 tropical storms.

SOUND INSULATION & ABSORPTION

The air porosity of the AAC block will have significant effect on the performance of the wall 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!

NO.	PARAMETER	AAC BLOCK	CLAY BRICK
1	Size (LxHxT)	600 x 200 x (100 to 230) mm	230 x 75 x 115 mm
2	Precision in Size	1.5 mm (+/-)	05 to 15 mm (+/-)
3	Compressive Strength	3.5 N/mm ² & above (as per IS 2185)	2.5 to 3.5 N/mm ² (as per IS 1077)
4	Dry Density	550-650 Kg/Cum (oven dry)	1800 Kg/Cum
5	Fire Resistance	02 to 06 hours (Depending upon Thickness)	02 Hours
6	Sound Insulation Index	45 db for 200 mm Thick Wall	50 db for 230 mm Thick Wall
7	Thermal Conductivity	0.24 (w/ k-m)	0.81 (w/ k-m)

WATER BARRIER

Structure of AAC blocks does not allow for capability action making it impervious to water. Its water barrier properties are further enhances by adding silicone based additives.

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.

COMPRESSIVE STRENGTH

High pressure steam-curing autoclaving process gives AAC blocks unmatched strength to weight ratio, higher than even M150 concrete and far exceeds the Indian Building Code Requirements.

HIGH 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 up to 30%

