



AAC
Autoclaved Aerated Concrete

Sipolite





Autoclaved Areated Concrete (AAC Blocks) is invented by Swedish people in 1920's and since it is use worldwide. In present scenario it is compulsion for conserving natural resources and energy. The need to use building components with maximum strength to weight ratio, which will interalia reduces the handling, transportation and erection cost as well as ensure less loads on foundations, thus enabling constructions even comparatively on poor soil conditions. AAC is a micro and macro cellular aerated composite of Cement and Fly Ash transformed to state of hydromonocalcium silicate through (high pressure steam curing) is not only light weight but also possesses adequate structural strength. It has unique properties such as excellent.

The Swedish formulated a mixture of cement, lime, water and sand that expanded due to aeration upon addition of aluminium powder. A material like wood but without the disadvantages of combustibility, decay and termite damage was obtained. The material was further developed to what we know today as Autoclaved Areated Concrete (AAC) Blocks.

AAC Blocks are among the most eco friendly building products. Which are designed to minimize waste and maximize energy efficiency by using waste material of power plants with zero wastage helps to reduce carbon footprints. It saves depletion of the fertile top –soil and usage of fly ash and industrial waste into an useful building product with high efficiency.

AREA OF APPLICATION



Residential Buildings



Commercial Buildings



Industrial Buildings



Institutional Buildings



Add on Floors & Extension

PRODUCT DATA

Type	Length	Height	Thickness	M ³ / Block	Nos of Block per M ³	Area Per Block (sq.ft)	Area Covered / M3
“Sipolite” AAC Blocks	600mm	200mm	100mm	0.0120	83.33	1.291	107.60
	600mm	200mm	125mm	0.0150	66.67	1.291	86.08
	600mm	200mm	150mm	0.0180	55.56	1.291	71.73
	600mm	200mm	200mm	0.0240	41.67	1.291	53.80
	600mm	200mm	225mm	0.0276	37.04	1.291	47.82
	600mm	200mm	250mm	0.0300	33.33	1.291	43.04
“Sipolite” AAC Blocks	600mm	250mm	100mm	0.0150	66.67	1.614	107.60
	600mm	250mm	125mm	0.0188	53.33	1.614	86.08
	600mm	250mm	150mm	0.0225	44.44	1.614	71.73
	600mm	250mm	200mm	0.0300	33.33	1.614	53.80
	600mm	250mm	225mm	0.0338	29.63	1.614	47.82
	600mm	250mm	250mm	0.0375	26.67	1.614	43.04

WORKABILITY

Providing and laying of “**Sipolite**” Autoclaved Aerated Concrete (AAC) block masonry using blocks having dimensions of 600 mm x 200 mm / 240 mm, thickness ranging from 100 mm to 250 mm conforming to IS-2185 (part-III). In case of partition walls (100 mm/125 mm thk.), the joint reinforcement i.e. 1 number of 6-8 mm diameter bars shall be placed at every alternate course to be anchored properly with the main structure. All other structural requirements like stiffening of masonry, joint reinforcement etc. in the AAC masonry work strictly be carried out as per instructions laid down in IS 6041 –1985, IS -1905.

Their workability is better than wood. That can be cut. Drilled and nailed by using normal hand tools. Power tools can use for rapid chasing of embedding service lines.”**Sipolite**” AAC Blocks can be cut virtually in any shape or angle making them extremely adaptable.



“**Sipobond**” ready mix jointing mortar with 3-4mm thickness or Keep limited to 10 -12mm with regular conventional cement mortar (1:6).



Use tools like hacksaw or rotary cutter. Can be cut to any size, shape and angle.



Minimum 150mm support for linets at both side. Lintels should be placed mortar bed.



Block can be drilled to provide electrical sockets.



Nail can be put with normal Hammer.



Can be plaster with regular conventional cement mortar (Cement: Sand).Ready Mix Plaster can be used in external. Gypsum plaster can use in internal.

TECHNICAL SPECIFICATION

PROPERTIES	VALUES
Density (Oven Dry)	550 – 650 Kg / m ³
Compressive Strength	As per IS 2185 Part – III 3-4 N/mm ²
Thermal Conductivity (K Value)	0.162 W/mk (average)
Sound Reduction (in db)	40 – 50 db depending on Thickness
Resistance to Fire	2 – 5 hours depending upon Thickness

FEATURES & BENEFITS



LIGHT WEIGHT / HIGH STRENGTH

Oven dry density of AAC Block is 550 to 650 kg/m³. i.e. just $\frac{1}{3}^{\text{rd}}$ the weight of conventional clay bricks and $\frac{1}{4}^{\text{th}}$ weight of density concrete(R.C.C.).Due to which dead load on foundation as well as structure are reduced ensuring economic design thereby saving in concrete and reinforcement steel.

High pressure steam –curing /autoclaving process gives blocks high strength to weight ratio higher than even M150 concrete.



HIGH THERMAL INSULATION

The Cellular structure of “Sipolite” AAC blocks make it far better thermal insulator than clay brick or R.C.C., thereby making living environment inside the building more comfortable during summer and winter. In case of air conditioning, the building A/C load can be reduce as much 30% approx. Leading to saving in recurring energy cost.



FIRE RESISTANT

AAC block have one of the highest hourly fire-resistant rating compared to any building material and non combustible. The melting point of AAC Block is more than twice the temperature in a building fire.



SOUND INSULATION

An AAC block has an excellent sound transmission class rating of 40 to 50 db. Hence ideal for Residential, Commercial Auditoriums, Theaters and Industrial for cutting of workshop sound from offices.



LOW MAINTENANCE

AAC is an inorganic material impervious to rot, insects and others pests. Building constructed over sixty years ago in different climates has proven AAC to be one most durable and stable building material available.



ENERGY EFFICIENT

AAC Blocks are energy and resource efficient in the sense that it uses least amount of energy and material per m³ of product. Unlike bricks manufacturing process which uses precious top layer agriculture soil, AAC block used fly ash 60% thus provides most constructive solution to The Nation's fly ash utilization problem.



ENVIRONMENTALLY FRIENDLY / ECO FRIENDLY

The Manufacturing process creates no by products and use raw material that are in abundant supply. Process is efficiently engineered to recycle inputs.AAC is recycle, inert and nontoxic. AAC is not source of chemical off-gassing, thus creates a suitable ambient environment.



SAVINGS

Cost – AAC blocks are 7-8 time the size of clay bricks, reducing the need for mortar joints by over 60%. Hence save cement and sand. Light weight properties lead to a lighter dead load on building structure resulting reduction in reinforcement steel and concrete. Due to surface accuracy of the blocks the thickness of plaster on AAC blocks is comparatively less. Thus save cement,sand & labour.

Water- AAC blocks are steam cured hence no need of curing after production unlike concrete bricks. At the time of construction block can be joined using readymade jointing mortar, so no need curing of wall, where as at least 7 days curing required for clay bricks / concrete blocks.

Time- Time consumed in building walls decreases due to light weight of the product and its size over conventional clay bricks decreasing lead time, as well as installation time.