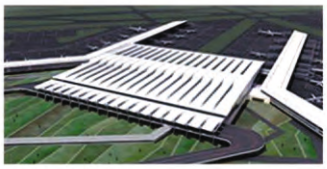
biltech™ | SIPOREX

Build Smart







Introduction

Autoclaved Aerated Concrete (AAC) is a fully integrated building system of panels and blocks that are used for residential, commercial and industrial buildings. AAC, a light-weight green building material, is fire resistant and has good thermal insulation, solid structure and is easy to work with. AAC is manufactured by about 200 plants in 35 countries and is used extensively in residential, commercial and industrial buildings.

Biltech Building Elements Limited is India's largest manufacturer of Fly Ash Based Aerated Autoclaved Concrete with 6 operating plants all over the country and a cumulative manufacturing capacity of around 10,50,000 cu.m. across states of Maharashtra, Gujarat, West Bengal & Karnataka. It is the only AAC player with a truly Pan India presence.

Biltech has acquired Siporex AAC Plants in Pune (Maharasthra) & Tumkur (Karnataka).

Siporex was operational in India since 1972, in collaboration with Internationella Siporex AB of Sweden. The unique flexibility, structural and physical properties of Siporex (ALC- Aerated Light Weight Concrete/AAC) are appreciated the world over and is the preferred building material for sustainable construction. It is ideal for all types of climatic and seismic zones.

Process

A mixture of fine fly ash, together with lime, gypsum and cement as binding agents, water and aluminium powder acting as a foaming agent, is made. The mixture is then poured in the moulds, allowed to rise and set. For reinforced units, anti-corrosive solution coated steel reinforcement cages are positioned in the mould before casting.

Once the material is set, the mould is turned through 90 degrees. Three sides of mould are then removed and cake is positioned lengthwise on its narrow side, which then rests on the curing plate. Tilting the mould through 90 degrees makes it possible to shape all sides of the product, for example, the tongue and grooves into the reinforced units and blocks. The material is trimmed and then cut to shape and loaded into Autoclaves where they are steam cured for about 10-12 hours at 190°C under a saturated steam pressure of 12 bar.

1. MOULD ASSEMBLY

2. MATERIAL SLURRY POURING

3. MATERIAL VERTICAL CUTTING

4. AUTOCLAVING

Area of Application

Residential Buildings

Commercial Buildings

Industrial Buildings

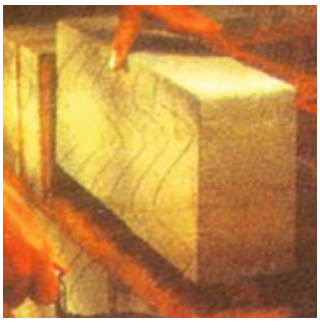
Institutional Buildings

Add on Floors & Extension

BILTECH-ACE : A certified green building material.

AAC Block & Its Workability

AAC blocks can be used in external as well as internal walls. They are manufactured as per IS 2185 (III)-1984 and masonry is carried out as per IS 6041-1985 and IS 1905-1987. Their workability is better than wood. They can be cut, drilled and nailed by using normal hand tools. Power tools can be used for rapid chasing for embedding service lines. AAC blocks can be cut virtually in any shape or angle making them extremely adaptable.



MASONRY CAN BE DONE WITH 1:6 (CEMENT:SAND) MORTAR. OR WITH READY MIX MORTAR

CAN BE CUT TO ANY SIZE AND SHAPE WITH CARPENTERS SAW.

SMALL GROOVES AND CHASES FOR SERVICES CAN BE CUT WITH A MANUAL CHASING TOOL.

BLOCKS CAN BE DRILLED TO PROVIDE ELECTRICAL SOCKETS.

NAILS CAN BE PUT WITH NORMAL HAMMER.

CAN BE PLASTERED WITH THE SAME MORTAR AS USED IN MASONRY.

Product Data

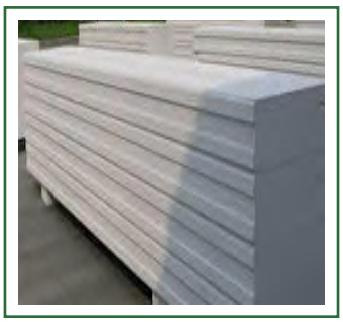
S.No.	Plant	TYPE	Length	Height	Thickness
* 1	Pune	AAC Block	650 mm	240 mm	75 mm, 100 mm, 125 mm, 150 mm, 200 mm, 225 mm
* 2	Tumkur	AAC Block	600 mm	200 mm	100 mm, 125 mm, 150 mm, 200 mm, 225 mm
3	Bighwan	AAC Block	625 mm	200 mm	100 mm,125 mm, 150 mm, 200 mm, 225 mm
		AAC Block	625 mm	200 mm	
4	Kolkata	AAC Block	625 mm	250 mm	100 mm,125 mm, 150 mm, 200 mm, 225 mm, 250mm
5	Surat	AAC Block	625 mm	240 mm	100 mm, 125 mm, 150 mm, 200 mm, 225 mm
		AAC Block	600 mm	200 mm	
6	Palghar	AAC Block	625 mm	240 mm	100 mm, 125 mm, 150 mm, 200 mm, 225 mm
		AAC Block	600 mm	200 mm	
7	Delhi	AAC Block	625 mm	240 mm	100 mm, 125 mm, 150 mm, 200 mm, 225 mm
		AAC Block	625 mm	200 mm	

***SIPOREX BRAND**

Technical Specification

Properties	Values
Density (Oven dry)	451-550 & 551-650 kg/m^3
Compressive Strength	As per IS 2185 Part (III)
Thermal Conductivity	0.16 W/M deg. K (Average)
Resistant to Fire	2-6 hrs. Depending upon Thk
Sound Reduction Index	37-49dB depending upon Thk
Design Density	800 Kg/m^3 (appx.)

SIPOREX AAC Slab



SIPOREX AAC slabs are an ideal replacement for conventional R.C.C. slab. These slabs can be used for roof & floor applications in new constructions with R.C.C., or steel framing systems.

SIPOREX AAC reinforced slabs are also used for adding floors or for extension of existing structures. Slabs are available in 650 Kg/M^3 (oven dry) and density are provided with tongue & groove profile on edge to facilitate easy placements and transmission of loads to main structure. Use of Siporex AAC Slabs eliminates requirement of shuttering materials, can be installed faster & request minimum curing activities.

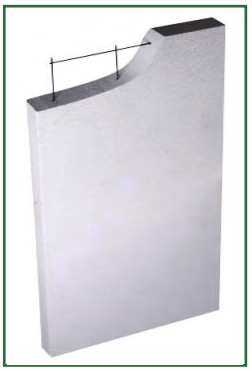
SIPOREX AAC slabs can be designed for superimposed loads (live load + finishing load). Depending on use and span SIPOREX AAC slabs can be designed for loads upto 550 Kg/M^2.

Product Data

Length	Width	Thickness
1 to 3 meters (span as required)	600 mm	Minimum 100 mm (depending on load & span)

Properties	Bending Compression	Shear Strength	Modulus of Elasticity	Coefficient of Linear expansion
Values	15 Kg/Cm^2	1 Kg/Cm^2	2.1 x 10^4 Kg/Cm^2	0.000008 per $^{\circ}$C

SIPOREX AAC Wall Panel



SIPOREX AAC wall panels available in 640 Kg/M^3 (oven dry) density and can be used as load bearing or non-load bearing walls. Wall panels are light in weight and provided with unprofiled edges. SIPOREX AAC wall panels can be designed for Wind load upto 200 Kg/M^2.

Siporex AAC wall panels provides more benefits than conventional masonry in terms of acoustics, fire resistance properties. Construction methods is dry. It enhances productivity and contributes more in carpet area for lesser thickness of wall panel in comparision to conventional walling materials.

Wall panels is used for partition walls for Office, Commercial Complex, Industrial & Residential buildings.

Product Data

Length	Width	Thickness
1 to 3 meters (span as required)	600 mm (depending on load & span)	Minimum 100 mm (depending on load & span)

SIPOREX AAC Lintel

SIPOREX AAC precast lintel blocks are used over door and window openings. The reinforcement and other parameters in the lintel blocks are designed as per codal provisions and project requirements.

SIPOREX AAC lintel are available in 640 kg/ M^3 (oven dry) density and can be designed up to superimposed loads of 100 Kg/M.

Product Data

Length	Width	Height
700 mm to 2000 mm (span as required)	100 mm 150 mm 200 mm 200 mm	150 mm 150 mm 150 mm 200 mm

Features and benefits

LIGHT WEIGHT

BILTECH-ACE blocks have a density 1/3rd of bricks of 1/4th the density of R.C.C. Using them helps in the reduction of dead loads on the structure and consequently reduction in the size of foundations, columns and beams in the structure as compared to conventional walling material.

HIGH THERMAL INSULATION

The cellular structure of BILTECH-ACE blocks makes it far better thermal insulator than 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 reduced as much as 40% approx. (depending on building design) leading to saving in recurring energy cost.

FIRE RESISTANCE

BILTECH-ACE blocks are inorganic and totally incombustible. They provide 6 hours of fire rating for 200mm thick walls and are particularly suitable for fire related application.

LOW MAINTENENCE

AAC is an inorganic material impervious to rot, insects and other pests. Buildings constructed over sixty years ago in different climates have proven AAC to be one of the most durable and stable building materials available.

ENVIRONMENTALLY FRIENDLY

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

ENERGY EFFICIENT

The manufacturing process creates millions of tiny air cells which provide excellent thermal resistance. This thermal resistance combined with the benefits of thermal mass inertia and whole wall coverage eliminates the need for additional insulation.

FIXING

Doors and windows frames can be fixed in BILTECH-ACE blocks masonry by using screws with rawl plugs.

PRECISION

The process of manufacturing BILTECH-ACE products ensures constant and consistent dimensions. Factory finished blocks provide a uniform base for economical application of a variety of finishing systems. Internal walls can be finished directly by P.O.P., thus eliminating the need of plastering.

Few of Our Prestigious Clients

Biltech Building Elements Limited

Registered Office:
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E-mail: rajdeep.chowdhury@bilt.com, info@biltechindia.com **Website:** www.biltechindia.com

Corporate Office:
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Phone: +91-11-49696600, **Fax:** +91-11-49696699
E-mail: info@biltechindia.com, nkarya@biltechindia.com **Website:** www.biltechindia.com

Regional Offices:

- 810, 8th Floor, Hubtown Viva, Sankarwadi, Jogeshwari, East Mumbai - 400060
- 4A, Poonam Building, 5/2 Russell Street, Kolkata - 700071, **Phone:** +91-33-40086716
- Block No. 309, Opp. Patco Foods, P. O. Dhamdod, Taluka - Mangrol, Dist. - Surat, Gujarat, **Phone:** +91-8511127233

Works:

East

- CESC Power Plant Site, Mauja Pujali Municipality, J. L. No. 42,P. S., Budge Budge Dist. 24 Praganas (South), West Bengal-700138

West

- 72-76, Industrial Estate, Mundhwa, Pune - 411036
- 105, Mile Stone, Pune-Solapur Highway, Village - Bhadalwadi, Paundhwadi, Near Bhigwan, Tal - Indapur, Dist - Pune. 413105.
- Village : Gowade, Manor - Palghar Highway, Taluka - Palghar, Distt. - Thane, Maharashtra

South

- Plot No: 88/P, 89,170/P, Vasantha Narasapura Industrial Area,Nagenahalli Village, Kora-Hobli, Dist: Tumkuru -572128. Karnataka.