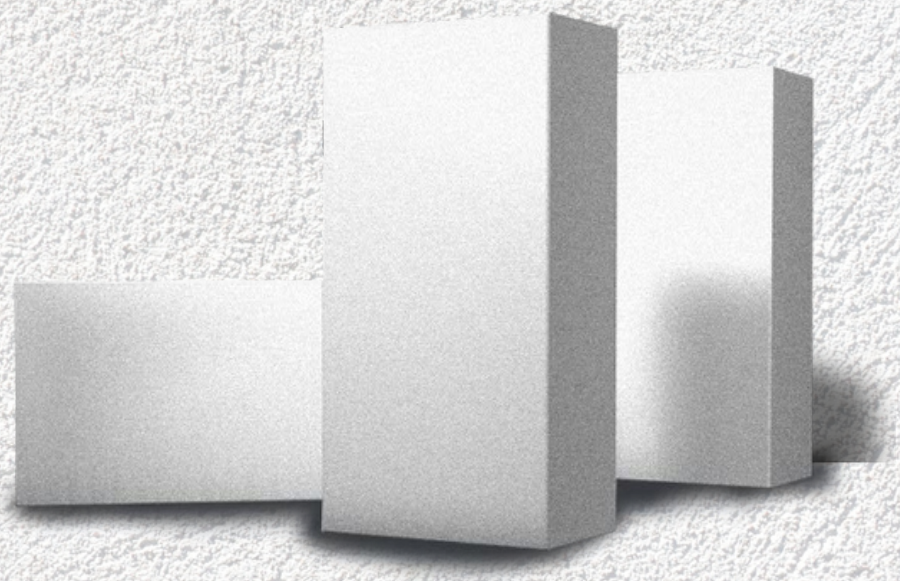
WALLCUBE

The Strong AAC Block



AUTOCLAVED AERATED CONCRETE BLOCKS

BLURSTONE CORPORATION

ABOUT US

Mission : Build the green building & Eco-friendly precast products, cause no unnecessary harm in construction industry.

Vision : To be the most preferred and most trusted company for eco-friendly products and services that create safe and stable environments.

We have strived to bring value to our environment in the form of green building materials which is eco-friendly and sustainable. In this new revolution, we make a long-lasting difference by focusing on water & energy efficiency, improving productivity, monetary savings, and minimum wastage. We use fossil energy wastes for making our products.

BlurStone Corporation is a subsidiary of BlurStone group. BlurStone Corporation is a multifaceted organization that is well-established in the concrete precast product manufacturing industry. The business journey of the group was started with the thought of making construction industry eco-friendly.

We are engaged in the business of manufacturing of building blocks and AAC (Aerated Autoclave Concrete) Block/Bricks(Brand - WallCube).

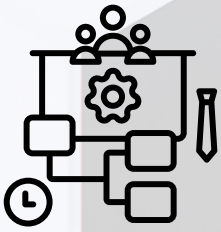
We are working in concrete products industry since 2020. Company have own factory premises in the area of 90,000 sqft with all facilities from products manufacturing to packaging.

Our experts are always ready to Innovate new ideas and products to make life easier and more comfortable.

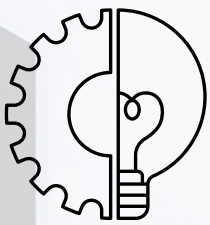
Our expertise to manufacture the precast concrete products, which can reduce your time and save your money.

Core Values-

Quality Products



Integrity



Innovative

Teamwork

PRODUCT INTRODUCTION

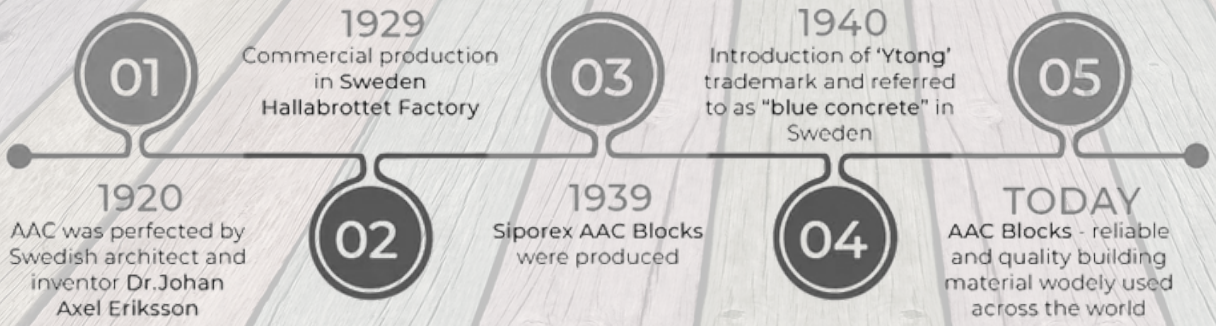
Autoclaved Aerated Concrete is an eco-friendly and certified green building material which is lightweight, load-bearing, high-insulating, durable building blocks and 3 times lighter when compared to red bricks.

AAC was developed in 1920 by a Swedish architect, who was looking for alternate building material with properties similar to that of wood – good thermal insulation, solid structure and easy to work with – but without the disadvantage of combustibility, decay and termite damage.

AAC blocks have porous, foam-like textures, which makes them lightweight. That does not mean there is any magical material used for creating this. Some of the materials used for creating the AAC block are cement, water, sand, and lime. A small amount of raising agent is also added, which helps form the porous block.

The difference between AAC blocks and burnt clay bricks is the production process and the materials used. An autoclave is a machine that can be set to high pressures and temperatures to create superheated steam. The created AAC block structure is autoclaved to get its lightweight and hard structure.

Now, to enhance the properties of AAC blocks, there are certain ingredients added while the AAC is blended and cast. Aluminum powder is mixed with calcium hydroxide, and water and hydrogen gas is released in the blend. This gas froths up and plays a big role in creating the porous, foam-like structure at the end. This gas rises up to 3mm inside the blend and this makes the final structure up to 3 times lighter than a regular cement block. The blended mixture needs to be put in the autoclave chamber for about 10-12 hours for it to harden up.



ADVANTAGES OF WALLCUBE AAC BLOCK

1. ECO-FRIENDLY AND SUSTAINABLE

The use of recycled industrial waste (fly ash), non-toxic ingredients, no emitting gases, and fewer energy consumptions makes the ACC Blocks eco-friendly and sustainable.

2. LIGHTWEIGHT

The AAC Blocks are 3 to 4 times lighter than bricks, 30% lighter than that of concrete which helps in reducing the dead load of the building, thereby allowing construction of taller buildings.

3. THERMALLY INSULATED & ENERGY EFFICIENT

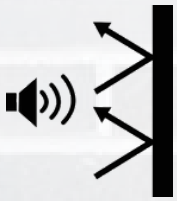
Tiny air pores and thermal mass of blocks provide excellent thermal insulation, thus reducing heating and air conditioning costs of a building.

4. FIRE RESISTANT

Non-combustible and fire-resistant up to 1600° C which can withstand up to 6 hours of direct exposure.

5. ACOUSTIC PERFORMANCE

As the AAC block is porous in nature, the sound absorption quality is superior. It offers sound attenuation of about 42 dB, blocking out all major sounds and disturbances which makes it ideal for schools, hospitals, hotels, offices, multi-family housing and other structures that require acoustic insulation.



6. EASY WORKABILITY AND DESIGN FLEXIBILITY

AAC blocks can be easily cut, drilled, nailed, milled and grooved to fit individual requirements.

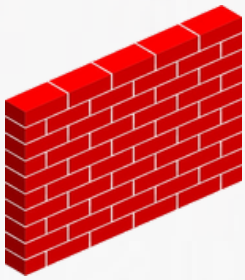
7. SEISMIC RESISTANT

Lightweight blocks reduce the mass of a structure, thus decreasing the impact of an earthquake on a building. Non-combustible nature provides an advantage against fires, which commonly accompany earthquakes.

8. FASTER CONSTRUCTION

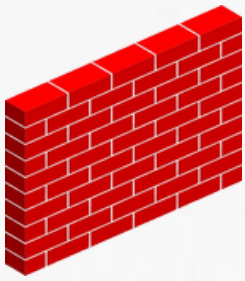
Construction of AAC Blocks reduces the construction time by 20%. As different sizes of blocks help reduce the number of joints in wall masonry. The lighter weight of the blocks makes it easier and faster to transport, place and construct the masonry.

COMPARISON BETWEEN AAC BLOCKS AND CLAY BRICK



Parameter	AAC Block	Clay Bricks
Structural Cost	Steel Saving Upto 15%	No Saving
Cement Mortar for Plaster & Masonry	Requires less due to flat, even surfaces & less number of joints	Requires more due to irregular surface and more number of joints.
Breakage	Less than 5%	Average 10 to 12 %
Construction speed	Speedy construction due to its big size, light weight & ease to cut in any size or shape	Comparatively slow
Quality	Uniform & Consistent	Normally varies
Fitting & Chasing	All kind of fitting and chasing possible	All kind of fitting and chasing possible
Carpet Area	More due to less thickness of walling material	Comparatively low
Availability	Anytime	Shortage in monsoon
Energy Saving	Approx. 30% reduction in air-conditioned load	No such saving
Chemical Composition	Sand/Flyash used around 60 - 70 % which reacts with Lime & Cement to form AAC	Soil is used which contains many inorganic impurities like sulphates etc. resulting in efflorescence

TECHNICAL SPECIFICATION OF AAC BLOCKS AND CLAY BRICKS



Property	Units	AAC Block	Clay Bricks
Size	**mm**	600 x 200 x (75 to 300)	230 x 75 x 115
Size Tolerance	**mm**	± 1.5	± 05 to 15
Compressive Strength	**N/mm 2**	3 – 4.5 (IS 2185 part 3)	2.5 to 3.5
Normal Dry Density	**Kg / m 3**	550 – 650	1800
Sound Reduction Index	**Db**	45 for 200 mm Thick Wall	50 for 230 mm Thick Wall
Fire Resistance	**Hrs**	2 to 6 (Depending on Thickness)	2
Thermal Conductivity “K”	**W / m-k**	0.16 – 0.18	0.81
Drying Shrinkage	**%**	Anytime	Shortage in monsoon

WALLCUBE AAC BLOCK COST EFFECTIVENESS

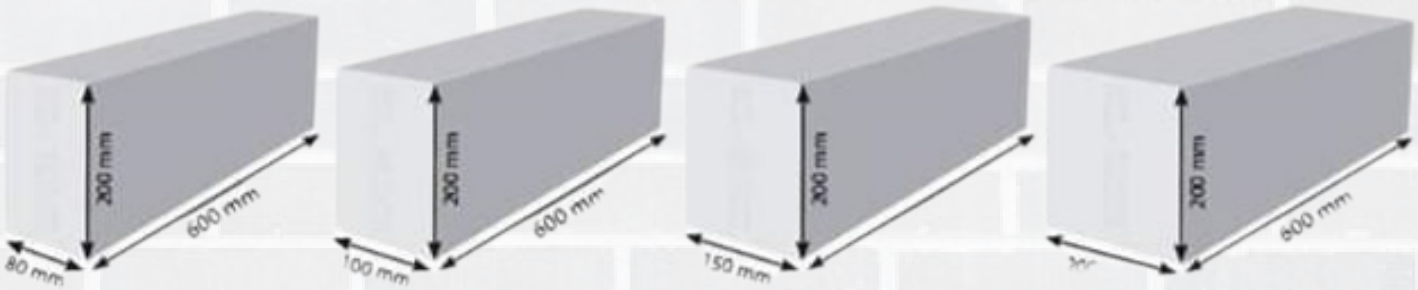
MORTAR MATERIAL	60 %	2 %	AAC Blocks are 7 times the size of conventional bricks. resulting in 1/3 the number of joints. Thus an overall mortar savings up to 60%
PLASTERING MATERIAL	35 %	2 %	Exceptional dimensional Accuracy & smooth surface. Eliminates needs of three coat plaster walls & allows for a final 6 MM skin coat (Putty/gypsum plaster)
WASTAGE	10 %	0.5 %	Breakage in bricks might be as high as 15% which in case of AAC Blocks is less than 5%
STRUCTURAL MATERIAL (STEEL & CONCRETE)	20 %	8 %	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 %	2 %	Being 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 %	0.5 %	AAC Blocks have excellent insulation properties, which results in saving in CAPEX & OPEX of HVAC systems.
TOTAL IMPACT ON PROJECT COST	**15 %**		

TECHNICAL SPECIFICATIONS

Particulars	Units	Values	Requirement as per IS-2185 Part-3
Size (Length x Height)	mm	650x250 / 650x200 / 600x200	NA
Size (Width)	mm	75/100/125/150/200/ 225/250/300	NA
Cement Mortar for Plaster & Masonry	mm	±3 (Height & width) ±3 (Length)	H& W= ±3mm, L= ±5 mm
Compressive Strength	N/mm2	≥ 3.5 for Grade - 2 and ≥ 4.0 for Grade-I	≥ 3 .0 for Grade-2 and ≥ 4.0 for Grade-1 @ density range 551-650 Kg/m3
Oven Dry Density	Kg/m3	560 - 640	551-650
Fire Resistance	Hrs.	4 hrs. (for 150 mm thick wall)	Min 2 hrs. is desirable
Thermal Conductivity (K Value)	W/mK	0.16 - 0.21	0.24 Max for G-1 and G- 2 @ density range 551-650 Kg/m3
Sound Reduction	Db	37 - 42	NA
Modulus of Elasticity	Mpa	2040	NA
Thermal Resistance (R Value)	m2K/W	0.95 (200 mm width) @0.21 W/mK	Max Value is desirable
Thermal Conductance (U Value)	W/m2K	1.05 (200 mm width) @0.21 W/mK	Minimum Value is desirable
Drying Shrinkage (Maximum)	%	0.04 Maximum	0.1 for gr-2 & 0.05 for Gr-1 Maximum
Sound Transmission Class Rating	Db	44	NA
Capillary Water Absorption	gm/dm2	180 Max	< 210 @ 24 hours (as per NFP 14306)

NUMBER OF BLOCK PER CUBIC METER

Dimentions	Size	No. of Pieces in 1 CBM
(length × height × width)	600mm × 200mm × 75mm	111 pieces
(length × height × width)	600mm × 200mm × 100mm	84 pieces
(length × height × width)	600mm × 200mm × 125mm	67 pieces
(length × height × width)	600mm × 200mm × 150mm	56 piece
(length × height × width)	600mm × 200mm × 175mm	48 pieces
(length × height × width)	600mm × 200mm × 200mm	42 pieces
(length × height × width)	600mm × 200mm × 225mm	37 pieces
(length × height × width)	600mm × 200mm × 250mm	33 pieces
(length × height × width)	600mm × 200mm × 300mm	28 pieces



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