

**AAC
BLOCKS**



The White Blocks
Autoclaved Aerated concrete
الطابوق الأبيض العازل



THE WHITE BLOCKS'

is established with an eco friendly vision to supply AUTOCLAVE AERATED CONCRETE products in the Sultanate of Oman. Autoclaved Aerated Concrete (AAC) is a certified green building material, which can be used for commercial, industrial and residential construction. It is porous, non-toxic and recyclable. It is extremely versatile for load/non load bearing construction applications including external walls, internal walls, fences and garden beds. Our AAC blocks are one third and quarter lighter than the equivalent size fired clay brick and concrete block respectively. Also light in weight, easy to cut and durable. Blocks are laid in the traditional way and a thin bed mortar (3mm thickness) is used to glue the blocks together.



The White Blocks



The White Blocks Introduction



The White Blocks

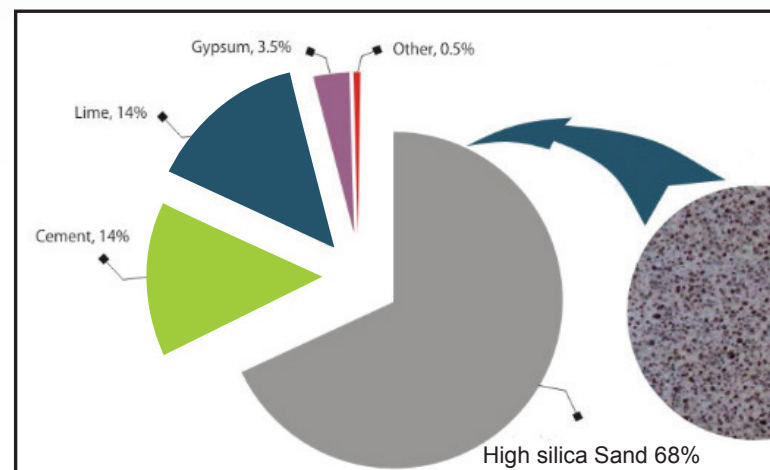
Production

Unlike most other concrete applications, AAC is produced using no aggregate larger than sand. Quartz sand, calcined lime, gypsum (mineral) cement and water are used as a binding agent. Aluminum powder is used at a rate of 0.05%–0.08% by volume (depending on the pre-specified density).

When AAC is mixed and cast in forms, several chemical reactions take place that give AAC its light weight (20% of the weight of concrete) and thermal properties. Aluminum powder reacts with calcium hydroxide and water to form hydrogen. The hydrogen gas foams and doubles the volume of the raw mix creating gas bubbles up to 3mm ($\frac{1}{8}$ inch) in diameter. At the end of the foaming process, the hydrogen escapes into the atmosphere and is replaced by air.

When the forms are removed from the material, it is solid but still soft. It is then cut into either blocks or panels, and placed in an autoclave chamber for 12 hours. During this steam pressure hardening process, when the temperature reaches 190° Celsius (374° Fahrenheit) and the pressure reaches 8 to 12 bar, quartz sand reacts with calcium hydroxide to form calcium silicate hydrate, which gives AAC its high strength and other unique properties. Because of the relatively low temperature used AAC blocks are not considered fired brick but a lightweight concrete masonry unit. After the autoclaving process, the material is ready for immediate use on

the construction site.



The White Blocks

Manufacturing and Distribution of AAC Blocks

Compositions

Cement	lime	Aluminum Powder
High Silica Sand	Water	Additives

Dimensions

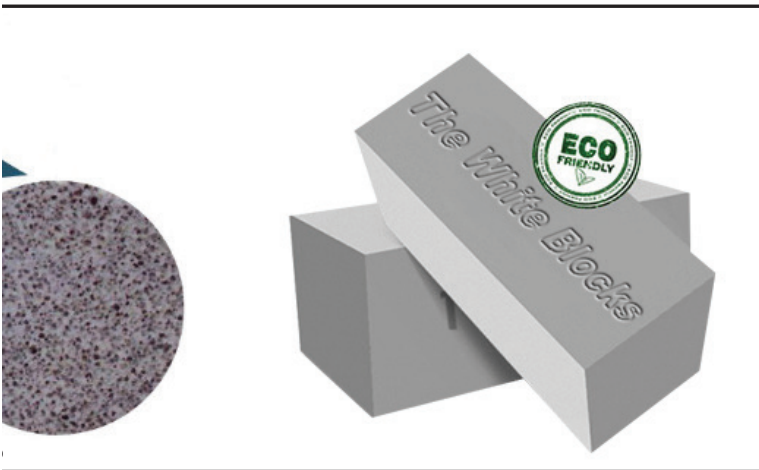
Length	Height	Thickness
600mm	250mm	300mm
600mm	250mm	250mm
600mm	250mm	200mm
600mm	250mm	150mm
600mm	250mm	100mm
600mm	200mm	200mm
600mm	200mm	150mm
600mm	200mm	100mm

Note: Blocks with other dimensions can be manufactured upon demand

Technical Specifications

As per DM Standard - DMS 1:Part 3 : 2011

Dry Density	450-550kg/m ³
Avg. Compressive Strength	3.2N/mm ²
Thermal Conductivity	0.12-0.14w/m.k
Sulphate Content SO ₃	1.0%
Chloride Content Cl	0.05%
Drying Shrinkage	<0.9%mm/m
Fire Resistance	4Hrs



Advantages

Insulation

The White blocks are superb insulators. It helps to reduce the cooling or heating cost.



High load Bearing Capacity

The White block is strong material which meets all engineering requirements and can be used for load bearing and non load bearing walls.

Accuracy in Dimensions

The White blocks are manufactured to accurate dimension (+/- 3mm).



Easy to cut and form

BY using White blocks, installation of electrical conduits is very easy and fast due to its lightweight property. With the White blocks it is easy to form channels for electrical conduits and plumbing.

The White blocks can be cut accurately with simple saw



Termite and pest resistant

The White Block is an inorganic, insect resistant, solid wall construction material, it is impossible for insects and rodents to inhabit in it.

Earthquake & weather resistance

The White Blocks buildings have shown good resistance against to earthquake. The non-combustible and fire resistance characteristics provide further advantages against fire which is commonly associated with earthquakes.



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Light Weight

Dry density is about 450-550kg/m³ which is 25% of the standard concrete blocks.

High Thermal Insulation

Thermal conductivity of 0.12-0.14w/mk, which is 10% of the standard concrete blocks. This results in a great energy efficiency.

Fire resistance

For 100mm thick, the wall is able to resist fire for 4 hours without any reduction on its compression.

Sound Insulation and Absorption

The porous blocks provide excellent sound insulation and absorption, greatly reducing noise and provide a comfortable interior.

Workability and compatibility

AAC blocks can be sawn, drilled, routed & nailed with common tools. It works well with other wall and floor systems.

Cost Savings

AAC blocks can largely reduce the dead weight of building structure thus cutting down much structural cost while fastening up construction progress. It transforms the conventional construction mode of fat beams and large columns.

High compressive strength

High compressive strength achieved due to high pressure steam-curing autoclaving process compared to red brick.

Applications

Partition wall, smooth face wall, external wall.



Brief Masonry Recommendations



Laying the first course

- a) The block for the first course are always laid in thick bed mortar mix. This course must be carefully built to ensure the blocks are plump and level
- b) Damp proof Course laying between the first course and foundations should be confirmed to BS-6398
- c) Ensure the AAC blocks surface is free from dust or other dirty particles before laying, and alignment in each direction is level after laying.



Laying the subsequent courses

- A) The thin bed mortar is requested to apply to the horizontal and vertical joints.
- B) Bed joint reinforcement mesh to be used confirm to BS EN 10142
- c) Reinforcement Steel to be used between AAC blocks and concrete columns confirm to manufactures requirement.
- D) Compressible materials to be filled between top of non-loading bearing wall and bottom surface of beam confirm to BS recommendations.



Finishing

- a) Smooth face blocks can be painted internally with any alkali-resistant paint, plastic emulsion paint being particularly suitable
- b) Hand or power tools can be used for electrical and plumbing purpose.
- C) For finishing and plastering as per manufactures recommendations.



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Glue Mortar

AAC Light Weight block Fix Mortar

Description:

Mortar is a powder adhesive composed of hydraulic binders, bonding agents, quartz synthetic resins and special additive formulated to obtain, when mixed with water, optimal characteristics of workability and high adhesion power fiber nor other materials considered harmful for health of the applicator.

Uses:

Mortar can be used for laying internal and external autoclaved aerated concrete blocks and panels

Instructions for Use:

The support, where Mortar will be applied must be perfectly clean, solid, compact and free from grease substances.

To prepare the mixture, pour in container 10 to 10.5 it. Of clean water. Add a bag of 50 Kg. of Mortar, then mix to get a Homogeneous lump free consistency mix.

Let the product rests for about 5 minutes and remix shortly before use.

Place the first line of blocks on concrete slab using a traditional cement mortar.

Apply Mortar with special toothed trowel and then position the blocks verifying their alignment. Remove possible excess of Mortar before it hardens.

Pay attention that the adhesive spread on the Blocks ha not formed a superficial film. In this case, apply fresh mix with the toothed trowel.

Technical Details:

Leave a space of about 2 cm between the top of block wall and bottom of slab beam in order to avoid formation of cracks along the wall. This cavity should be filled with compressible material (see relative technical data sheet).

Appearance:

Power

Color

Grey

Noxiousity according to EEC 88/379:

Non

Density:

1.50 kg/it

Max time for the application:

60minutes at +20 °C

Recommended thickness:

2-3 mm

Temperature of application:

From +5 °C to 40 °C

Consumption:

4-5Kg/m

Packaging:

Multi-layer bag of 50 Kg weight



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نفتخر بخدمتك...
Proud of serving you..



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