

Green Premium Solid Construction ECA Block



Expanded Clay Aggregate (ECA) BLOCKS are non-load bearing wall masonry units manufactured using **Expanded Clay Aggregate (ECA)**, Class **F** fly Ash and cement. Tentative comparison of **Expanded Clay Aggregate (ECA) BLOCKS**, Autoclaved Aerated Concrete Blocks and Ordinary Clay Bricks are listed below for your ready reference.

Comparison Between Expanded Clay Aggregate (ECA) Blocks and Conventional Construction Products

Properties	Expanded Clay Aggregate (ECA) Blocks	Autoclaved Aerated Concrete Blocks	Ordinary Clay Bricks	Expanded Clay Aggregate (ECA) Blocks Advantages
Eco - Friendly	Green Building Product	Green Building Product	Manufactured from top soil and considered to be environmentally hazardous	Expanded Clay Aggregate (ECA) blocks generates no pollutants or hazardous wastes
Size Accuracy	Precision in size with variation of 0.5mm (+/-)	Precision in size with variation of 1.5mm (+/-)	Accuracy is low with variation of 5mm (+/-)	High Accuracy
Density	600 - 750 Kg/m ³ Density Average = 700 Kg/m ³	550 - 650 Kg / m ³	1900 - 2000 Kg / m ³	Higher Density gives it better Structural Stability
Workability	Easy to carve, nail and conduit	Not easy to carve, nail and conduit	As per conventional practice and speed	Easy to carve, nail or conduit for plumbing and electric work. Can be carved either by hammer and chisel or with an electric cutter
Strength	3.5 to 5.0 N/mm ² (Mpa)	>3 N/mm ² (Mpa)	Lower Compressive Strength, 25-30 Kg/cm ²	Class - F fly Ash is used in eca blocks which contains high CaO percentage which helps to increase the strength
Fitting and Chasing	Blocks are laid easily using regular cement mortar	Needs to use appropriate bonding agent for stable wall	Same as per standard practices	Provides better bonding with regular cement mortar, hence there are no plaster cracks

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Breakage	1% max	3% App.	15-20 % App.	Minimum Wastage
Labour	Expanded Clay Aggregate (ECA) blocks are bigger & lighter. Amount of work executed in a day is 110 sqft. per day	Amount of work executed in a day is 90 sqft. per day	Amount of work executed in a day is 90 sqft. per day	Cuts down the labour cost
Acoustic Insulation	upto 46- 52 dB (for 200mm wall)	44db (for 200mm wall)	50 db (for 230 mm thick wall) App.	More efficient Acoustic Insulation
Thermal Conductivity	0.14 to 0.18 W/mK	0.16 w/mK	0.81 (K)w/m Deg.C	More efficient Thermal Conductivity
Chemical Reactivity	No	AAC blocks & Bonding Agent's pH values differ so it creates shrinkage between them	Yes	Expanded Clay Aggregate (ECA) blocks do not react with alkaline or acidic substances
Fire Resistance	Expanded Clay Aggregate (ECA) is formed by firing at 1200 °C	4 hours (for 200 mm wall)	1.2 Hours Approximate (for 200 mm wall)	Better Fire Resistance
Pest Resistant	Yes	Yes	No	Termite & Pest Proof
Surface Finish	Even surface with Rough Texture	Smooth finish. Not very good for bonding with regular plaster	Uneven surface required at least 10 cm of mortar and 12 to 20 cm of internal and external plasters	Excellent bonding with regular plaster and no cracks in plaster
Mortar	0.50 bag of Cement in 1 m ³ with 1:6 App.	0.50 bag of special cementing agent in 1 m ³ with 1:6 App.	1.40 bag of Cement in 1 m ³ with 1:6 App.	Even surface finish reduces mortar expense by 70%.

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Durability	Expanded Clay Aggregate (ECA) , Fly Ash and Cement being inert material makes it long lasting	Long lasting compared to brickwork	Soil contains many inorganic impurities like sulphate and its results in efflorescence	Good resistance against any chemicals and is fire resistant
Availability	24 X 7 available	24 X 7 available	Not available in monsoon	Readily Available
Cost Benefit	Saves upto 25% in structural and construction cost	Saves upto 20% in structural cost	-----	Coping is required only after 10' of masonry. Saves overall construction cost. It being light weight reduces dead load by 40%, hence saves on cost of structural elements
Long Term Strength	Gains additional compressive strength with age	Less	No	Compressive Strength gradually increases day by day
Drying Shrinkage	No Shrinkage	0.01 to 0.05 %	-----	Almost similar Ph value between Expanded Clay Aggregate (ECA) blocks & jointing mortar reduces shrinkage value
Curing	Minimum curing required	Minimum curing required	Required	Absorbed water in Expanded Clay Aggregate (ECA) is reversible which is used as curing water

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