

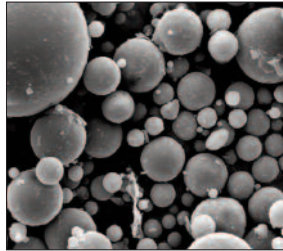
Coal fired power station ash products

The benefits and advantages to the construction industry

Pulverised Fuel Ash (PFA) or fly ash as it is known in some applications and Furnace Bottom Ash (FBA) are by-products of burning coal in a power station furnace. They are safe and versatile construction materials which can be used in a variety of applications.

Fly ash in cements and as an addition to concrete

Used for concrete products, readymixed concrete and block manufacture. Why use fly ash in concrete?



- Fly ash has increased strength and durability with time due to the pozzolanic reaction.
- Fly ash produces more workable concrete - this enhances the construction process as the material flows around reinforcement easily, resulting in better quality work.
- Classified fly ash reduces the water content of concrete - further reducing permeability and improving durability.
- Fly ash improves sulfate resistance and reduces the risk of alkali silica reaction.
- Fly ash reduces the heat of hydration compared to Portland cement.
- Fly ash is supplied to EN450-1.

PFA for grouting

When mixed with cement and/or lime PFA grout is used for filling fissures, voids and cavities such as redundant mine workings and pipework systems e.g. sewers. Why is PFA used?

- PFA is economical.
- It has a reduced water/solids ratio compared to sand based grouts.
- It has increasing compressive strength, extended setting time, low shrinkage and reduced permeability with time.
- It has improved pumpability.
- Also it has a higher resistance to chemical attack

PFA as a structural fill

Used as a load bearing fill, in road sub bases, airfield pavements and landscaping. Why use PFA?

- It is lightweight - reduces the load on weak ground.



- It is self hardening - offers considerable advantages over natural clay/granular material.
- It has low permeability - sheds rain water naturally which reduces leaching.
- It can be mixed with lime to give increased strength due to pozzolanic reaction.
- In one form it can be used as a road sub base and it can be trafficked straight away.

Lightweight aggregate concrete blocks

Lightweight aggregate concrete blocks are made with FBA as the aggregate. Why do manufacturers use FBA?

- FBA produces a cost-effective building material with a wide range of properties and a flexible range of applications.
- Using FBA reduces the environmental impact of block production, with the possibility of obtaining environmental credits.
- The lightweight nature reduces transport costs and manual handling problems.
- A lightweight concrete block with Lytag or FBA tends to have higher strength.



Aerated concrete blocks

These are often made using >80% PFA. They are cellular low-density blocks that have excellent insulating properties. They are widely accepted for use in construction of houses, offices, etc. where thermal insulation is important.

Environmental considerations

The use of coal ash is resource efficient and minimises the use of primary aggregates thus saving them for more appropriate specialised uses. This also diverts material from landfill and results in concrete with substantially lower CO₂ emissions.

Would you like to know more? See our website or contact us

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