



# GUJARAT STATE ELECTRICITY CORPORATION LTD

Vidhyut Bhavan Race Course, Vadodara, India – 390007 Ph. 91-265-6612341, Fax: 91-265-2355195

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CIN : U40100GJ1993SGC019988

## POND ASH UTILIZATION

### ❖ Fly Ash Generation in GSECL Power Plants:

The contribution of coal based power plant of GSECL is approx. 70% of total electricity generated. The four major thermal power stations Gandhinagar TPS, Wanakbori TPS, Ukai TPS and Sikka TPS are coal based power generating units. The Kutch Lignite Thermal Power Station (KLTPS) is lignite based unit.

In coal the ash percentage is about 30% to 40%. Approx 6.5 million tonne per year fly ash is generated at full load capacity. During the year 2016-17, total fly ash generated is 2.95 million tonne.

### ❖ What is Pond Fly Ash?

Approx. 20% of total ash generated is delivered as bottom ash into dyke and approx. 80% of total ash is collected in dry form in ESP/ Silo System for dispatch to cement manufacturers and various fly ash users/ trading agencies. The un-lifted dry ash mixed with water and then disposed in to the ash dyke. The accumulated ash in the ash dyke is called pond ash.

### ❖ Availability of Pond Ash:

Pond ash is available from following power stations.

Sr. No.	Thermal Power Station
1	Wanakbori TPS, Dist: Kheda, Gujarat
2	Gandhinagar TPS, Dist: Gandhinagar, Gujarat
3	Sikka TPS, Dist: Jamnagar, Gujarat
4	Ukai TPS, Dist: Tapi, Gujarat
5	Kutch Lignite TPS, Dist: Kutch (Lignite Ash) , Gujarat

### Use of Pond Ash:

- Low Value High Volume: Pond ash can be used for land and mine filling.
- Medium Value Medium Volume:
  - For manufacturing bricks, blocks, paver blocks.
  - Acidic land (soil) can be improved by using pond ash.
  - Geotechnical application as a substitute of earth dust.
  - Road construction, embankment and flyovers.
  - Raw material for cement.

### Benefits of Pond ash Bricks, Blocks & Paver Blocks:

- Manufacturing cost of bricks is low.
- Pond ash bricks, blocks & paver blocks have uniform shape
- Less labour expense about 15% compare to red bricks manuf.
- Good strengths
- Require less water quantity.
- Pond ash bricks, blocks save the fuel while red bricks require more fuel for its manufacturing.
- Pond ash bricks, blocks minimize the pollution.



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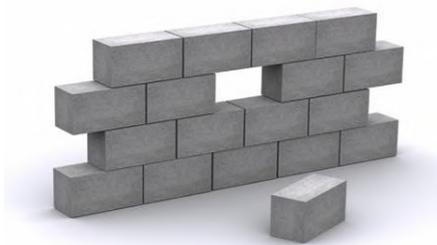
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## Comparison between Clay/ Red Bricks and Fly Ash Bricks

CLAY/ RED BRICK	FLY ASH BRICK
Varying colour as per soil.	Uniform pleasing colour like cement.
Uneven shape as handmade.	Uniform in shape and smooth in finish.
Lightly bonded.	Dense composition.
Surface of wall is not flat and Plastering required.	Plastering on fly ash bricks surface is not compulsory.
Heavier in weight.	Lighter in weight.
Poor Strength compare to fly ash bricks.	Better Strength compare to clay bricks.
More porous and more water required.	Less porous and less water required.
10 to 15% of bricks are broken during construction which is big wastage.	Chances for wastage of bricks during construction is very less.
For red bricks manufacturing, agriculture land & soil is wasted.	Agricultural land & soil is saved as bricks are made from generated ash of power plant.
Carbon emission is more due to use of fossil fuel for its manufacturing.	No carbon emission.
Red bricks are not eco-friendly as fertile land & soil is wasted.	Fly Ash bricks are eco-friendly as fertile land & soil is saved.

❖ Following pictures are for simple understanding of ash based products.

### Fly Ash Bricks



### Fly Ash Blocks





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### **Paver Blocks**



### **GSECL's contribution towards environment:-**

- ❖ GSECL has taken part in the Bricks-Expo Exhibition held at Ahmedabad in the year 2013-14 & 2014-15. The exhibition was supported by all India bricks and tiles manufacturers' federation, New Delhi and Gujarat bricks manufacturers' federation.
- ❖ The visitors of entire Gujarat and small entrepreneurs were updated that how the eco friendly products is manufactured from the pond ash with cheap rate and other benefits than clay bricks in the exhibition.
- ❖ Advertisement given in the various News Papers of Gujarat regarding availability of pond ash and awareness to manufacture bricks, block from pond ash. Due to this, pond ash utilization is increased at various locations.
- ❖ As a “Pilot Project”, GSECL has executed an agreement with an agency to install the equipments to process pond ash for its bulk utilization from dyke of Wanakbori TPS. The installation of pilot project is under process.



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❖ The company has explored and enhanced the infrastructure facilities for dry fly ash extraction, collection and evacuation capacities to maximize fly ash utilization in a pollution free manner at its various power stations.

With proper implementation of ash management plan, the off-take of ash (i.e. both dry and pond ash) has increased to 125% in the year 2016-17.

Our goal is “People get more information of Pond Ash and get advancement through its utilization”.

Contact Us:

Fly Ash Cell, Fuel Department

3<sup>rd</sup> Floor, Corporate Office,

Gujarat State Electricity Corporation Limited

Vidhyut Bhavan, Race Course Circle,

Vadodara



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## **POND ASH**

Instead of clay now a days Pond Ash as a basic raw material is utilized to manufacture good quality of bricks, AAC blocks, paver blocks as well as in value added products and also in road construction.

For your requirement of pond ash,  
Please contact,

Chief Engineer (Fuel),  
Gujarat State Electricity Corporation Limited  
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Race Course, Vadodara -390007  
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**FOR OUR NEXT GENERATION  
SAVE PRECIOUS FERTILE SOIL**