



Recycling Fly Ash

Greater than 50% of the electricity produced in the United States is generated from coal. For every 10 tons of coal, 1 ton of coal combustion products or CCP's are produced. The American Coal Ash Association (ACAA) estimates 120 million tons of CCP are produced in the United States each year. Conditioning and recycling CCP products is a huge opportunity for Marion Mixers.

Fly ash is one of the by-products created during the coal burning process that has commercially redeeming value. An estimated 68 million tons of fly ash are generated each year. However, only 18 million tons are currently being recycled. 50 million tons of unprocessed ash are being deposited into landfills or storage lagoons each year.

Fly ash is classified under the ASTM standard C618 in two forms.

Class F fly ash is produced from anthracite or bituminous coal that is typically found in the Eastern United States. This ash has pozzolanic properties. In the presence of water and free lime, the ash will react into cementitious compounds.

Class C fly ash is created when burning lignite or sub bituminous coal that is typically found in the Western United States. In addition to having pozzolanic properties, this ash has some self-cementing properties. This ash can harden and gain strength in the presence of water alone.

Fly ash is a known carcinogen and is therefore a regulated substance. Processing and transporting fly ash must be accomplished without the release of fugitive dust. Marion Mixers has experience processing both Class F and Class C ash. Marion's batch and continuous style mixers are ideally suited for processing ash while containing fugitive dust.

Applications include:

- Portland cement production
- Additives for wetted concrete products
- Fertilizer from neutralized sewage sludge
- Gypsum from flue gas desulfurization systems
- Conditioned fly ash without fugitive dust for structural fills & embankments and stabilization of waste materials