SAN MIGUEL ELECTRIC COOPERATIVE, INC.

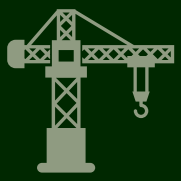
Coal Ash: Beneficial for Everyday Life

Why do we need it?

From highways to roofing tiles to water control, coal ash is a necessary component of everyday life. Often referred to as coal combustion products (CCPs), coal ash is produced when coal is burned to generate electricity. The coarse particles (bottom ash and boiler slag) settle to the bottom of the combustion chamber, while the finer particles (fly ash) "fly up" into the stack of a power plant with flue gases and are removed by specialized devices and filters. In general, coal ash materials, including fly ash, have a wide range of uses in construction, manufacturing, environmental remediation and other industries.

Improves the durability of Texas roads

Used in military aircraft



Adds strength to construction materials

Coal ash use is growing

Coal ash has been used in construction since the 1940s, when the federal government began using concrete made with fly ash to build dams. Since then, the uses of CCPs has only grown. They can be found in a variety of building and composite materials, such as metal alloys and plastics, to provide strength without adding weight. Fly ash and bottom ash are often used in road-base materials, structural fills and embankments. California and Texas both use fly ash in road construction, which has created increased demand for CCPs.

Other CCP uses include wallboard manufacturing, roofing tiles, shingles and snow and ice control. Using coal ash instead of natural soil in the construction of highway fills or embankments eliminates the need to remove soil from undisturbed areas, which saves energy. Some CCPs even have properties suitable for metal castings in the aerospace and automotive industries.

San Miguel coal ash is going places

San Miguel Electric Cooperative in Christine, Texas has a long history of constructively using the coal ash generated by its nearby lignite mine. For example, small glass beads made up of San Miguel-produced CCPs are used in mobile phone gaskets and radar-deflecting coatings for military aircraft.

San Miguel's coal ash is also used in the windmill bases for wind-generating farms. The oil and gas industry uses San Miguel coal ash as well, in construction, oil cements and pipe manufacturing. And, it was used to build San Antonio infrastructure, such as the Alamodome.

"Beneficial use of coal ash can produce positive environmental, economic and performance benefits, such as reduced use of virgin resources, lower greenhouse gas emissions, reduced costs of coal ash disposal and improved strength and durability of materials." Environmental Protection Agency

1 TON OF COAL ASH

TAKES THE SAME AMOUNT OF SPACE AS THE TRASH GENERATED BY THE AVERAGE AMERICAN OVER 455 DAYS

Coal ash is king in Texas

- Approximately 2,300 tons of fly ash concrete was used to construct the San Antonio Marriott Rivercenter hotel
- The 10,475-foot-long cable-stayed bridge over the Houston Ship Channel was built using 8,000 tons of fly ash
- The Alamodome was constructed with more than 6,000 tons of fly ash used in its structural concrete
- Fly ash was used to construct taxiways for the San Antonio International Airport
- State Highway 71 and the Dallas Central Expressway used CCPs in their concrete
- Reliant Energy, the Port of Houston Authority and the National Marine Fisheries Service have used CCP pellets to stabilize and encourage the growth of oyster reefs

RECYCLED FLY ASH KEEPS APPROXIMATELY

13 MILLION TONS OF CARBON DIOXIDE

FROM ENTERING THE ATMOSPHERE ANNUALY

Contact:

6200 FM 3387
Christine, TX 78012
Phone: (830) 784-3411
E-mail: sanmiguel@smeci.net
www.smeci.net

Coal ash is non-hazardous

The Environmental Protection Agency (EPA) classifies CCPs as a non-hazardous material. The agency made that determination after more than 20 years of study. In fact, it and other federal agencies encourage the use of CCPs and other recycled materials in construction.

As a member of the Texas Coal Ash Utilization Group, San Miguel Electric Cooperative has been a long and active participant in the development of CCP regulation. Working through the organization, San Miguel and others have worked closely with the EPA and state regulators to develop coal ash regulations that support beneficial uses, while protecting the environment through innovation and sound science.

For example, CCPs are frequently used to reclaim or restore land disturbed by mining operations. By using CCPs instead of soil as fill, operators can limit the amount of disturbed areas and enhance reclamation flexibility, including the ability to tailor reclamation to the needs of landowners. Also, by not having to excavate and haul soil to the reclamation area by separate truck trips, (because CCPs can leverage the return truck-trip back to the mine from the power plant), less haul truck traffic is necessary, which improves safety and reduces noise and vehicle emissions.

Good for the environment

The National Resource Defense Council, as well as the Green Building Council, consider fly ash a superior building material. It is used to build infrastructure, such as highways, bridges, tunnels and buildings. It makes these structures stronger and more durable, reducing demolition and replacement rates.

The EPA considers the recycling of industrial materials, such as CCPs, a “national priority,” citing coal ash recycling’s environmental, economic and material benefits. Recycling this material has become even more important in recent years as landfills start to fill up and communities look for ways to reduce environmental impacts and improve sustainability. Using coal ash in infrastructure keeps it out of landfills.

In fact, one ton of coal ash takes the same amount of space as the trash generated by the average American over 455 days. Recycling also eliminates the carbon dioxide emissions generated by the heavy equipment needed to carry the coal ash to the landfill. Every ton of fly ash used in concrete reduces almost one ton of carbon dioxide emissions. That’s equivalent to about two months’ emissions from a motor vehicle. The amount of fly ash recycled annually in concrete and other construction materials keeps approximately 13 million tons of carbon dioxide from entering the atmosphere.

Sources:
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Review of Texas Regulations, Standards and Practices Related to the Use of Coal Combustion Products; Final Report; January 2005; Prepared by John Ward of Headwaters Resources
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Written Testimony Submitted by Mr. Michael Kezar, General Manager of South Texas Electric Cooperative, to the United States Senate Committee on Environment and Public Works, June 17, 2015

About Us

San Miguel Electric Cooperative, Inc. is a member-owned mining and power generation cooperative that serves the people of Texas’ rural communities, working and living in partnership with its members. Through integrity, hard work and a commitment to safety, San Miguel maintains a dependable power supply at the lowest possible and competitive cost.