

## Improving our environment one **brick** at a time.



When coal is used to make electricity in power plants, some material is left as unburned residue. “Fly Ash” is the largest component of those coal combustion residuals.

Fly ash is a very fine, lightweight powder, captured in filters before it can escape into the air. The majority of this ash is disposed of in landfills or ponds today. About forty percent is beneficially reused (recycled) in a variety of applications, including building materials and products.

Fly ash has been in the news over the past several years. In a December 2008 rainstorm, the earthen dam of a pond holding decades of accumulated fly ash from a Kingston, TN power plant failed, and acres of land and waterway downstream were covered in grey sludge. A segment of CBS’s “60 Minutes” was dedicated to reporting this story.

In the wake of this disaster, the EPA initiated a rulemaking process to regulate fly ash disposal at the federal level for the first time. CalStar agrees stronger regulation of the disposal of coal combustion residuals is a good idea.

Since early 2009, the EPA’s rulemaking process has drawn highly charged rhetoric from a variety of parties who have taken to the airwaves, to the web, and to Washington, D.C. and beyond to try to influence the outcome.

Amidst all the controversy about appropriate fly ash disposal, it can be difficult to figure out whether recycling fly ash in building products is environmentally safe and sound.

### Simply put, here’s what you need to know about CalStar and fly ash.

- 1. The U.S. EPA, Natural Resources Defense Council, Earthjustice, and the U.S. Green Building Council** all agree that recycling fly ash in building materials and products is safe and environmentally desirable.
- 2. The EPA's regulatory focus is only on disposal.** Recycling will remain free of regulation. There is a long history of fly ash use in building products creating one of the best recycling stories on record. The EPA and leading environmental groups would like to see beneficial reuse grow.
- 3. CalStar has proven our products are safe, through rigorous testing, even though decades of safe use of fly ash in building materials has already been demonstrated.** Our tests results can be found on our website.

Common Misconception	The Facts
Fly ash is toxic	The quantities of heavy metals in fly ash are so small that by the EPA's test, virtually no fly ash is hazardous. Problems can arise when millions of tons of ash are disposed of improperly in unlined ponds and disposal is the appropriate focus of pending regulation.
Building products containing fly ash are toxic	When fly ash is bound in a brick or concrete it can't leach out. Even if you grind up a CalStar brick and soak it in acid you can't extract a concerning level of any element out of the brick.
Using fly ash promotes the use of coal	Even as alternatives become available, we're going to be living with coal-fired power for some time, whether the byproducts are recycled or not. Beneficial reuse in building products and concrete is endorsed by a broad group of environmental organizations.
Using fly ash in building materials is a new practice	Fly ash has been included in projects dating back to the Hoover Dam in the 1930's and replaces 15-20% of the cement in an average concrete mix today. The EPA headquarters building has fly ash in the concrete.
Recycling fly ash is bad for the environment	The beneficial reuse of fly ash is one of the most compelling recycling success stories on record. For every ton of cement replaced by fly ash, we eliminate about a ton of CO <sub>2</sub> . This practice has reduced U.S. CO <sub>2</sub> emissions by over 200 million tons since 1990.
Disposal of building products containing fly ash can result in leaching of heavy metals	When fly ash is incorporated into a building product it is bound, much the way flour is bound in a baked cake. Numerous tests on building materials and products conducted by the EPA and others have shown no cause for concern in disposal.

The U.S. EPA, Natural Resources Defense Council, Earthjustice, and the U.S. Green Building Council have all been outspoken advocates in support of recycling:

*"Environmentally-sound beneficial uses of ash conserve resources, reduce greenhouse gas emissions, lessen the need for waste disposal units, and provide significant domestic economic benefits. This proposal will clearly differentiate these uses from coal ash disposal and assure that safe beneficial uses are not restricted and in fact are encouraged."*

**Mathy Stanislaus, Assistant Administrator, U.S. EPA**

*"[The Natural Resources Defense Council] agrees... that the beneficial use of encapsulated fly ash in products, such as bricks, is sound and is a major source of the reduction of greenhouse gas emissions that should be encouraged."*

**Scott Slesinger, Legislative Director, Natural Resources Defense Council**

*"Reuse of ash as a component of asphalt, concrete, and gypsum board are legitimate and safe reuses that should be encouraged. In addition, recycling ash in concrete can result in a large reduction of greenhouse gases."*

**Lisa Evans, Project Attorney, Earthjustice**

*"USGBC ... will continue to support beneficial use of CCRs where appropriate as determined by our committee process and in alignment with EPA regulations."*

**Scot Horst, Senior Vice President, LEED, U.S. Green Building Council**

Building products containing fly ash are safe and help the environment by saving energy, eliminating CO<sub>2</sub> emissions and diverting material from landfills.

Visit [calstarproducts.com](http://calstarproducts.com) for more information.



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