



American Concrete Institute®
Advancing concrete knowledge

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September 4, 2009

The Honorable Lisa P. Jackson
EPA Administrator
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 1101A
Washington, DC 20460

Subject: Fly Ash as a "Hazardous Waste"

Dear Ms. Jackson:

As one of the world's leading authorities on concrete technology, the American Concrete Institute (ACI) urges the Environmental Protection Agency (EPA) to consider the technical and sustainability implications of classifying fly ash as a "hazardous waste" under subtitle C of the Resource Conservation and Recovery Act (RCRA). It is ACI's opinion that designating fly ash as a "hazardous waste" will result in little or no fly ash being used in concrete in the US. We anticipate the concrete industry will no longer specify its use; and fly ash producers would not permit its beneficial use due to liability concerns, preferring to impound fly ash rather than allow its use. Further, the designation of fly ash as a "hazardous waste" is counter to the goal of sustainability.

Who is ACI

The American Concrete Institute is a 501(c)(3) non-profit technical and educational society organized in 1904 and is the leading international forum for the discussion of all technical matters related to concrete.

Over the past hundred years, ACI voluntary members have significantly advanced knowledge of concrete materials and structures by developing standards and publishing scholarly manuscripts, technical papers and articles. ACI is an American National Standards Institute (ANSI) accredited Standards Developing Organization (SDO), and maintains national standards in the area of concrete technology and application. ACI currently supports over 100 technical committees whose expert members develop these national standards using the consensus process.

ACI is not a trade organization and has no commercial interest in concrete or concrete products. ACI members seek to advance concrete knowledge for the benefit of the general public.

Fly ash in concrete construction

Fly ash is commonly specified in concrete mixtures to improve durability, thus increasing service life with both environmental and economical benefits. This is important not only to private owners, but also to Federal, State, and Local jurisdictions responsible for the design, construction, maintenance and repair of buildings, bridges, roads, and infrastructure. Hungry Horse Dam, completed in 1953, was one of the first applications in which fly ash was used, and at least 100 major locks and dams using fly ash have been constructed under the direction of the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, or private engineering firms.

The durability of concrete can be improved and service life extended by using fly ash. Fly ash can

- lower concrete permeability and thus reduce the rate of ingress of water and aggressive chemicals;
- resist deleterious alkali-aggregate and sulfate reactions;
- increase the compressive strength;
- improve the workability of fresh concrete, enabling more thorough compaction;
- reduce the heat of hydration in mass concrete.

Fly ash is recognized in the US Green Building Council's LEED system as a post-industrial recycled material. The use of fly ash in concrete enhances the recycled material content of a building and is recognized as a beneficial strategy for CO₂ reduction.

The use of fly ash in concrete is an effective and often-used environmentally responsible strategy to promote sustainability since it

- uses a typically land filled industrial by-product (15 million tons diverted from landfills in 2007);
- reduces cement content of concrete, and thus CO₂ generated (15 million ton reduction in CO₂ in 2007);
- reduces the amount of embodied energy in concrete;
- reduces virgin materials extracted from the earth.

Strategically, the effective elimination of fly ash in concrete would be a step backward in the nation's efforts to provide a more sustainable infrastructure.

Impacts of designating fly ash as a "hazardous waste"

ACI's most notable contribution to the construction industry is the *ACI 318 Building Code Requirements for Structural Concrete and Commentary*. The code is adopted by the ICC in the International Building Code. It satisfies ISO 19338 "*Performance and Assessment Requirements for Design Standards on Structural Concrete*," and is used worldwide. This Code recognizes the use of fly ash as an effective supplementary cementitious material, which leads to environmentally responsible construction.

It is not within the purview of ACI to determine whether fly ash is a "hazardous waste." As you know, EPA determined in May, 2000 that these materials "do not warrant regulation under subtitle C of RCRA and is retaining the hazardous waste exemption under RCRA section 3001(b)(3)(c)." Fly ash of any composition that is incorporated into concrete is to a high degree sequestered, and its environmental interaction is significantly reduced. Such sequestering remains even if the concrete is subsequently ground into aggregate-sized particles and recycled.

Designation of fly ash as a "hazardous waste" will likely eliminate its inclusion in future project specifications for fear of possible legal exposure and liability. Such a designation would also likely lead to its removal from future national codes and standards for the same reason.

Summary

ACI is a technical society, and unlike trade organizations does not represent any trades related to or part of the concrete industry. Our concern deals with the impact that designating fly ash as a "hazardous waste" will have on concrete technology, the best use of concrete, and concrete's sustainable impact on society.

Recognizing that

- fly ash is commonly accepted and used world-wide,
- fly ash can contribute to longevity and economy of concrete construction, and
- fly ash use is a key strategy to sustainable construction,

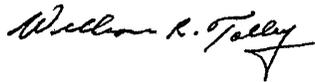
EPA should not risk harm to the environmental and material benefits of fly ash use in concrete when addressing the impoundment requirements for fly ash, nor abrogate the ability to make effective and safe use of this industrial by-product. ACI suggests that a national enforcement program for fly ash impoundment be developed to strengthen the current oversight and reduce the likelihood of another catastrophic release such as occurred in Kingston, Tennessee but without labeling fly ash a hazardous waste.

ACI would be pleased to provide the EPA with technically accurate and credible resources on the use of fly ash in concrete during the EPA's deliberations. A copy of ACI Committee 232 report dealing with fly ash's use in concrete is attached for your reference.

Sincerely,



Florian G. Barth
President



William R. Tolley
Executive Vice President

Enclosure:

ACI Committee 232 Report entitled "Use of Fly Ash in Concrete"

cc: Mathy Stanislaus, EPA Assistant Administrator
Mr. Matt Hale, Director, Office of Resource
John Sager, EPA
Thomas J. Vilsack, Secretary of Agriculture
Gary F. Locke, Secretary of Commerce
Steven Chu, Secretary of Energy
Raymond L. LaHood, Secretary of Transportation
Rahm Emanuel, Chief of White House Staff
Carol Browner, Energy Coordinator
ACI Board of Direction
David Sanders, Chair, ACI Technical Activities Committee