AGENDA
ACI Committee 130 – Sustainability of Concrete

ACI Fall 2009 Convention, New Orleans, Louisiana
Monday, November 9, 2009
3-5pm, La Galerie 3

1) Welcome and Introductions

2) Approval of Spring 2009 minutes

3) Committee mission and vision

4) Roster and committee subcommittee updates (see exhibit A)

5) Document vision and updates (Schokker & Buffenbarger)
   a) Chapter 1: Introduction (Darwin)→ currently balloting
   b) Chapter 2: Overview of Cement & Concrete Sustainability (Hooten) → complete, almost ready to ballot
   c) Chapter 3: Concrete Industry (Sutter) → under revision
   d) Chapter 4: Measurements of Sustainability (Tagnit-Hamou)
   e) Chapter 5: Summary (or additional information and future direction)
   f) Glossary (Buffenbarger) → currently balloting

6) Subcommittee Updates
   a) 130A: Materials (Chairs: Doug Hooten & Tom VanDam)
   b) 130B: Production/Transportation/Construction (Chairs: Kevin MacDonald & Matt Offenberg)
   c) 130C: Structures in Service (Chair: Tracy Marcotte)
   d) 130D: Rating Systems/Sustainability Tools (Martha Van Greem, Jeff Volz, & Arezki Tagnit-Hamou
   e) 130E: Design/Specifications/Codes/Regulations (Chairs: Mark Chrzanowski & Larry Church)
   f) 130F: Social Issues (Chair: David Darwin)
   g) 130G: Education/Certification (Chairs: Larry Rowland & Khaled Awad)
   h) Subcommittee membership

7) Special Publications
   a) *Concrete: The Sustainable Material Choice* (Lorenz)

8) Convention Sessions
   a) Concrete Sustainability Forum (Buffenbarger)
   b) Upcoming Sessions (Rowland)

9) Other Old Business
   (note that items from the floor may be limited due to time constraints; please contact the Chair prior to the meeting if you would like to add items to the official agenda)

10) New Business
   a) Updates on current issues in sustainability
      i) Fly Ash potential classification as “hazardous material” (exhibit B)

11) Adjournment

130 Main Committee Voting Members

Adams	Thomas	***Chair***	**Schokker**	Andrea
Aldred	James	***Vice-Chair***	**Buffenbarger**	Julie
Awad	Khaled Walid	***Secretary***	**Lorenz**	Emily
Barth	Florian	***Staff Liaison***	**Bournay**	Jessie
Billington	Sarah			
Chrzanowski	Mark			
Church	Larry			
Darwin	David			
El-Hawary	Moetaz Maher			
Fidjostol	Per			
Fowler	David			
Gaspar	William			
Holland	Terence			
Hooton	R. Doug			
Hover	Kenneth			
Jahren	Per			
Johnson	Anthony			
Lemay	Lionel			
Lorenz	Emily			
MacDonald	Kevin			
Marcotte	Tracy			
Mehta	P. Kumar			
Meyer	Christian			
Neff	Ted			
Nmai	Charles			
Novak	Lawrence			
Offenberg	Matthew			
Pergalsky	Aimee			
Rapoport	Julie			
Roberts	John			
Rowland	Larry			
Sakai	Koji			
Stehly	Richard			
Sutter	Lawrence			
Tagnit-Hamou	Arezki			
Van Dam	Thomas			
VanGeem	Martha			
Volz	Jeff			
Wan	David			
Weber	David			
Yen	Peter			
Zajakowski	Vicky			

130-A Materials

Co-Chair	**Hooten**	Doug
Co-Chair	**Van Dam**	Thomas

Adams	Thomas
Aldred	James
Billington	Sarah
Buhler	Eckart
Chrzanowski	Mark
Clodic	Laurence
Deshpande	Yogini
Dubey	Ashish
El-Hawary	Moetaz Maher
Fidjostol	Per
Fowler	David
Gaspar	William
Hicks	James
Holland	Terence
Huffman	Daniel
Jahren	Per
Johnson	Anthony
Kanellopoulos	Antonios
Lho	Byeong Cheol
MacDonald	Kevin
Mehta	P. Kumar
Nmai	Charles
Noguchi	Takafumi
Novak	Lawrence
Offenberg	Matthew
Pergalsky	Aimee
Ramme	Adam
Rapoport	Julie
Reknes	Kare
Roberts	John
Saafi	Mohamed
Sutter	Lawrence
Tagnit-Hamou	Arezki
Taylor	Peter
Touchie	Marianne
Van Acker	James
Weber	David
Wobken	Steven
Yen	Peter
Zajakowski	Vicky
Wan	David
Weilacher	Robert

130-B Production/Transport/Construction

Co-Chair	**MacDonald**	Kevin
Co-Chair	**Offenberg**	Matthew

Akakin	Tumer
Deshpande	Yogini
Fidjostol	Per
Gaspar	William
Hooton	R. Doug
Huffman	Daniel
Hull	John
Kanellopoulos	Antonios
Lemay	Lionel
Lorenz	Emily
Pergalsky	Aimee
Ramme	Adam
Reknes	Kare
Roberts	John
Shahad	Shamin
Van Acker	James
Wan	David
West	Jeff
Yen	Peter
Zajakowski	Vicky

130-C Structures in Service

Chair	**Marcotte**	Tracy

Billington	Sarah
Chrzanowski	Mark
Fidjostol	Per
Gaspar	William
Johnson	Anthony
Lho	Byeong Cheol
Lounis	Zoubir
Neff	Ted
Ramme	Adam
Rodriguez-Nikl	Tonatiuh
Saafi	Mohamed
Stanish	Kyle
Taylor	Peter
Weilacher	Robert
Yen	Peter

130-D Rating Systems/Sustainability Tools

Chair	**Tagnit-Hamou**	Arezki
Co-Chair	**Volz**	Jeff
Co-Chair	**VanGeem**	Martha
Buhler	Eckart	
Church	Larry	
Clodic	Laurence	
Cooper	Christian	
Darwin	David	
Hicks	James	
Hull	John	
Kevern	John	
Lewis	Nicholas	
Lho	Byeong Cheol	
Lounis	Zoubir	
Marcotte	Tracy	
Mehta	P. Kumar	
Nmai	Charles	
Pergalsky	Aimee	
Rajabipour	Farshad	
Rogers	Dawn	
Stanish	Kyle	
Sutter	Lawrence	
Van Dam	Thomas	
Wan	David	
Weber	David	
Weilacher	Robert	
Zhang	Lihe	

130-E Design/Specifications/Codes/Regulations

Co-Chair	**Chrzanowski**	Mark
Co-Chair	**Church**	Larry
Aldred	James	
Awad	Khaled Walid	
Blaszak	Gregg	
Buhler	Eckart	
Chrzanowski	Mark	
Darwin	David	
Dixit	Om	
Gaspar	William	
Holland	Terence	
Hooton	R. Doug	
Jahren	Per	
Lewis	Nicholas	
Lounis	Zoubir	
Marcotte	Tracy	
McLeod	Heather	
Meyer	Christian	
Neff	Ted	
Nmai	Charles	
Noguchi	Takafumi	
Offenberg	Matthew	
Peethamparan	Sulapha	
Rodriguez-Nikl	Tonatiuh	
Sakai	Koji	
Sakai	Koji	
Stanish	Kyle	
Sutter	Lawrence	
VanGeem	Martha	
Volz	Jeffrey	
West	Jeff	
Wobken	Steven	
Zhang	Lihe	

130-F Social Issues

Chair	**Darwin**	David
Awad	Khaled Walid	
Cooper	John	
Johnson	Anthony	
Marcotte	Tracy	
McLeod	Heather	
Novak	Lawrence	
Reknes	Kare	
Rodriguez-Nikl	Tona	
Van Dam	Thomas	
Wobken	Steven	

130-G Education/Certification

Co-Chair	**Rowland**	Larry
Co-Chair	**Awad**	Khaled
Adams	Thomas	
Billington	Sarah	
Blaszak	Gregg	
Church	Larry	
Huffman	Daniel	
Kevern	John	
Meyer	Christian	
Novak	Lawrence	
Pergalsky	Aimee	
Rajabipour	Farshad	
Ramme	Adam	
Rogers	Dawn	
Tagnit-Hamou	Arezki	
Volz	Jeffrey	
Weilacher	Robert	
West	Jeff	

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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 CO_2 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 CO_2 generated (15 million ton reduction in CO_2 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.

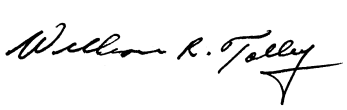
Recognizing that

- 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