

Welcome!

NEU Session on

Low Carbon Cement and Concrete

Wednesday, November 1st - 1:30 PM - 3:30 PM

Moderators: Sureka Sumanasooriya, Ph.D.; Dean A. Frank, P.E.

Learning Objectives:

- Report on the current and upcoming low carbon concrete technologies and materials
- Explain NEU's technology validation/verification program
- Discuss codes and standards on low carbon cement and concrete materials
- Recognize ACI code advocacy efforts toward the adoption of low carbon cement and concrete.

This session has been approved by AIA and ICC for 2 PDHs (0.2 CEUs).

*Please note: **You must attend the live session for the entire duration to receive credit.***

Topics and Speakers:

- **Introduction to NEU:** Sureka Sumanasooriya: NEU/ACI
- **NEU Technology Validation/Verification Program:** Mahmut Ekenel: NEU/ACI
- **Carbon Neutral Concrete Materials and Technologies 2023, What to Implement Now and What is Coming:** Mary Christiansen: University of Minnesota
- **Changes to ASTM Cement & Concrete Standards to Facilitate Sustainable Initiatives:** R Doug Hooton: University of Toronto
- **Code Development - Overview and Opportunities:** Stephen Szoke: ACI

Introduction to NEU

An ACI Center of Excellence for Carbon Neutral Concrete



Sureka Sumanasooriya, PhD
Technical Director
NEU



Why Focus on Carbon?

- We know there is a lot more to sustainability than Global Warming
 - Environmental, Social and Economic factors all play into sustainability
- We also know that concrete really shines in many areas related to sustainability
 - Resilience, thermal mass, durability, etc.
- Global warming is affecting everyone on the planet
 - 8% of global carbon emissions are associated with cement and concrete production
 - the industry is in an excellent position to improve upon this area
 - We can measure the amount of CO₂ associated with concrete
 - Can't improve something without being able to measure it first



Cement and Concrete Industry Roadmaps

Various construction sectors, organizations, and global regions are creating roadmaps.

- Carbon Capture, Utilization and Storage (36%)
- Efficiency in Design and Construction (22%)
 - Design optimization, site efficiency, re-use, etc.
- Clinker Production Savings (11%)
 - Reducing traditional limestone use, fuel sources, etc.
- Efficiency in Concrete Production (11%)
 - Optimized mix designs, quality control, industrialized manufacturing
- Savings in cement and binders (using SCM's) (9%)
- Recarbonation (6%)
- Decarbonizing Electricity (5%)

*Global Cement and Concrete Association (GCCA)

What's a professional to do?

- Overwhelming amount of information.
- Concrete is a multi-faceted industry.
- Various professional knowledge levels from both the supply and demand side of the industry.
- End users may know very little.
- Need for accelerated adoption of new materials and technologies.





American Concrete Institute
Always advancing

ACI's Influence for Cultural Change in the Industry

ACI's leadership for over 100 years

- Non-trade association
- Education, training and certification
- Code and specification development
- Many start in the industry with ACI
- Strong student and international membership (100 countries)
- Aware of the urgency and demand for accurate information



**An ACI Center of Excellence
for Carbon Neutral Concrete**

Vision

The Center envisions a concrete industry where all stakeholders have access to technologies and the knowledge needed to effectively and safely produce and place carbon-neutral concrete and concrete products in the built environment.

Mission

To drive education, awareness, and adoption of the use of carbon-neutral concrete materials and technologies.

NEU Core Functions

- Material and Technology Validation/Verification Program
- Technology Transfer and Acceleration/Implementation
- Advocacy and Technical Support
- ACI Committee Assistance
- Training and Professional Development
- International and Student Outreach

NEU Core Functions

Technology Transfer and Acceleration/Implementation

Technology transfer is a vital piece of this work.

- Webinars
- FAQs and White Papers
- Sustainable/low carbon concrete guides
- Case studies
- Technical Information Sheets
- ACI/Industry recourses
- Industry Presentations
- Carbon Neutral Concrete Summits
- Educational slide decks
- Training (ACI Resource Center)
- Certification Programs

ACI is a recognized leader in this area, with an established network within industry and higher education institutions worldwide.



NEU Core Functions

Technology Transfer and Acceleration/Implementation

Visit www.neuconcrete.org



Home Validation Resources Members News Newsletter NEU Board Committees

Resources

NEU will provide access to technologies and the knowledge needed to effectively and safely produce and place carbon neutral concrete in the built environment. The resources we have provided are for the user's convenience and have not been reviewed or approved by NEU or ACI.



Case Studies



Frequently Asked Questions



Articles, Guides and Reports



Videos and Webinars



ACI Online Learning and Presentations



Industry Resources

NEU Core Functions

Advocacy and Technical Support

ACI has long recognized that advocacy for the adoption of its resources is a major component for the success of its mission.

NEU will advocate for the use of sound technical information and the application of existing knowledge.

- Assist in advancing local jurisdiction adoption
- Keep an eye on local procurement and building code issues
- Assist ACI committees in developing language for guides, specifications, and codes associated with carbon neutral concrete materials and technologies

NEU Summit on Accelerating Carbon-Neutral Concrete Materials and Technologies

September 26, 2023, Columbia, MD

- NIST
- FHWA
- DOE
- EPA
- ICC
- NRMCA
- PCA
- CNCA
- ACEEE
- RMI
- ASTM International
- NEU BOD and Members
- Invited attendees



ACI Center of Excellence on Carbon-Neutral Concrete

Membership

- Project owners
- Specifying agencies
- Architects / engineers
- Developers
- Contractors
- Material / product suppliers
- Trade associations
- Educational Institutes

Founding Member



American Concrete Institute
Always advancing

Sustaining Members



Supporting Members



Members of NEU

Affiliate Members



Allied Organizations

- NEU will work with industry collaborators through an allied organization level of participation.
- Mission aligned industry associations, govt. agencies, universities, etc.

Allied Organizations

- International Code Council Evaluation Services (ICC-ES)
- ASTM International
- Inter-American Cement Federation (FICEM)
- Concrete Innovation Hub – UC – Santiago, Chile (CIHUC)
- NRMCA
- CP Tech Center at ISU
- PCA
- CNCA
- CZYI
- SCA



NEU Team



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Director of Validation

NEU News

- NEU SmartBrief
- Newsletter
- Webinars
- ACI convention sessions
- NEU Summits



Carbon Neutral Concrete
What does it really mean?
By Andrea Schokker, PhD, P.E., LEED AP



**NEU's Carbon Neutral
Concrete Day – A Success!**

Thank you for your participation

www.neuconcrete.org

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