

To: Members of the IACMI Infrastructure & Construction (I&C) Working Group
From: Joe Fox
Subject: Summary of I&C Working Group meeting held 1/24/24

The fourteenth meeting of the Infrastructure & Construction (I&C) working group was held virtually via Microsoft Teams on January 24th. Joe Fox and John Unser co-facilitated the meeting, which lasted 2 hours. There were 38 attendees.

This summary is accompanied by a pdf file that contains all the slides shown during the meeting. Slide 2 shows the agenda and the slide numbers for each topic. The entire slide deck can also be accessed in the folder for the I&C working group on Microsoft Teams in the folder "Meeting 14 01-24-24." Here is a link to a recording of the meeting:

[I&C Working Group meeting 1-24-24 recording](#)

Joe Fox opened the meeting by reviewing the objectives of the working group and tying them to the agenda. He then described recent information from ASCE about infrastructure spending, cities of the future, infrastructure for electrification, an upcoming ASCE webinar on infrastructure, and the 2025 Infrastructure Report Card (slides 7-13). Joe then described recent information from ACMA, including new Life Cycle Inventory and embodied carbon data presented at CAMX '23, and Strongwell's award-nominated, all-pultruded wireless communication tower that uses FRP nuts and bolts (slides 14-19).

Kevin Line from RISE Building Products gave an overview of their trim and siding line, which uses a variety recycled raw materials, including shredded, end-of-life wind turbine blades (slides 21-42).

John Unser gave an update on the status of the Morgan County Bridge in Tennessee, which is now two years old (slides 43-74). The structural health monitoring system has performed very well during this time, and inspection and testing of the composite bridge deck have shown no problems during its first two years.

Joe Fox gave an update on the activities of the Decarbonization subcommittee (slides 75-98). He noted that the Carbon Leadership Forum (CLF) issued its 2023 database, which contains embodied carbon data for competitive building materials, including steel and concrete. He showed how this data and new LCI data from ACMA is being used to update calculations comparing Cradle-to-Gate greenhouse gas emissions for FRP and steel in applications like gratings, girders, and utility poles. Joe also showed several examples where FRP can be used in conjunction with concrete to lower emissions of CO₂. The examples included the Hillman Composite Beam, Carbon Prestressed Concrete (CPC) for bridges, and CarbonCast insulated panels and architectural panels, which use C-GRID from Chomarat to reduce the amount of concrete needed.

Joe gave a brief update (slides 99-115) on the status of these 3 R&D projects:

- Fire Resistance Testing of Trimer Resin for I&C Applications. This very successful project has been completed by Orenco and Trimer Technologies. The final report, which documents the results of E1354, E84 and E199 testing, is now available on the IACMI website
- Predicting the Lifetime of GBeam Girders. This project at the University of Maine is moving towards the starting line. It will involve inspection of existing bridges that use GBeam girders, testing of witness plates from those bridges, and accelerated testing (freeze/thaw, salt spray, uv resistance...) in the lab. Funding for this project comes from the DOT-sponsored Transportation Infrastructure Durability Center (TIDC) at U Maine, Maine DOT, and IACMI's Resource Pool.
- Use of GFRP Rebar & CFRP Strands in Floating Foundations for Off-Shore Wind. This project is in the Definition stage.

The next portion of the meeting focused on funding opportunities. Joe and John showed a list of current opportunities for DOT funding (slides 116-122). Joe described IACMI's vision for a TRACE center in DOT Region 4 (slides 123-133). He also described ACMA & IACMI's joint response to a funding opportunity from the EPA focused on reducing greenhouse gas emissions from construction materials and products; the CIRCLE program (Climate Impact Reduction through Composites Lifecycle Evaluation) that has been proposed is described on slides 134-138.

The **action items** from the meeting are summarized on slide 140 and are copied here:

- Distribute information from today's meeting
 - Slides, recording, meeting summary
- Continue to evolve and strengthen the Decarbonization message for FRP
- Projects:
 - Launch the Lifetime Prediction project for GBeam girders at U Maine
 - Decide if a project on FRP rebar for off-shore wind foundations makes sense
 - Define a "Blades to Buildings" project
- Send ideas for potential new projects to
 - Joe Fox at foxconsulting147@gmail.com
 - John Unser at john@compositeapplicationsgroup.com
- Continue to approach potential collaborators for a TRACE center
- Schedule the next quarterly working group meeting in the April-May timeframe

Comments/questions/suggestions can be directed to Joe Fox (foxconsulting147@gmail.com) or John Unser (john@compositeapplicationsgroup.com).