

MINUTES
ACI Committee 345 - Bridge Construction, Maintenance, and Repair
Spring 2012 Convention
Dallas, TX
Sanger
Sunday, March, 2011, 1:30 pm to 3:30 pm

- 1) **Opening:** Chairman Michael Brown opened the meeting at 1:32 pm.
- 2) **Introductions:** All those present introduced themselves.
- 3) **Approval of minutes** – change title of SP 277 to: “Recent Advances in Maintenance and Repair of Concrete Bridges”

4) **Membership status:**

According to ACI records, the committee currently has 3 officers and 15 other voting members, 6 consulting members, and 26 associate members.

Membership changes:

From Associate to Voting: Chris Carroll, Ron Vaughn

From Voting to Associate: Jeff Bezo, Claudia Pulido

Voting Members present: Michael Brown (Chair), Rita Oglesby (Secretary), Jimmy Kim, Michael Sprinkel, Chris Carroll, Andy Foden, Alan Matejowsky, Johan Silfwerbrand, Paul St John, Ronald Vaughn, and Mark Williams

Associate Members present: Devin Harris, Richard Huza, George Morcous, Luis Orta, and Jeff Smith

Visitors present: Jeff Bryant, Ben Dymond, Ben Graybeal, Phillip Loh, Nathan Sauer, and Ron Watson

5) **Technical Presentations:**

- a) Fall 2011 – “In Honor of Robert Gulyas” was well attended

6) **Future Sessions:**

- a) Spring 2013 “Advanced Materials and Sensors for Concrete Bridges: Performance, Evaluation, and Repair.”

Moderator: Jimmy Kim

Length: 2 slots @ 2 hr each = 4 hr ~ 8 speakers

This session will include the application of advanced materials (shape memory alloy, fiber reinforced polymer, piezoelectric actuators, etc.) and sensing techniques (fiber optic, acoustic emission, ultrasound, and so on). Committees 345 and 440 will co-sponsor. A call for papers will appear in the June edition of CI.

- b) The committee is seeking presentations for a session titled *Innovative Concrete Systems for Rapid Bridge Construction*. Moderators: Michael Brown and Devin Harris. Rita to submit Preliminary request for Minneapolis, MN –

The committee will request 2 sessions. This session will include several examples of innovative systems. As a preliminary summary: The Federal Highway Administration is currently employing Accelerated Bridge Construction (ABC) as a key element in its

overarching strategy title “Every Day Counts.” Many highway agencies are employing a range of innovative structural designs and techniques to permit the rapid construction or rehabilitation of bridges. Some examples of innovative systems include New England Extreme Tee, Inverted-Tee, Bridge in a Backpack, Hillman Composite Beam and UHPC as joint fill for adjacent precast superstructure elements such as box girders, deck bulb-tees, and the like. The session will focus on concrete technologies that are being employed in such manner to build durable structures or extend the useful life of existing structures. A call for papers will be issued.

c) A potential new session: *Lessons Learned – What Not to Do in Bridge Construction and Maintenance?* Moderator and convention not selected.

7) **Bridge Committee interaction:**

The committee encourages interaction with other committees. Several members of 345 are also members of other bridge-related committees. The committees and 345 contacts are listed below.

- a) TAC – Mike Sprinkel – new documents should be updated every 6 years. Do not wait until year 12 to get re-approval. New document should include new references and updates in technology. After TAC review, committees have up to 2 years maximum to address comments.
- b) 222 – Corrosion – Mike Brown reported a new chair, David Trejo has discussed having a joint session honoring Richard Weyers in light of his recent retirement from Virginia Tech and his career of concrete and corrosion research. It is proposed that Committee 345 co-sponsor this event and potentially Committee 365 could also be a co-sponsor. Committee 222 is finalizing revision to their major document.
- c) 228 – see 342 update (new liaison need)
- d) 237 – Self-Consolidating Concrete: Ron Vaughn. Have several sessions listed below.
 - a. MN – SCC in Repairs Applications
 - b. Phoenix – Structural Behavior of Precast/Prestressed SCC
 - c. Reno – Use of SCC in Drilled Shaft Applications
- e) 342 – Bridge Evaluation – TAC review of new document proposed on "Condition Assessment of Concrete Superstructures." New documents on “Condition Assessment of Bridges”. “Rapid Evaluation of Bridge Decks” in Cincinnati on Wed afternoon, 15-20 people in audience. Phoenix – joint session with 228 – “Condition Assessment of Concrete Bridges”
- f) 343 – Bridge Design – no updates
- g) 444 – Committee was titled “Experimental Analysis”, new name “Structural Health Monitoring,” meets Tuesday @ 8 am (anyone interested in liaison)

5) **Status of Documents:**

- a) 345R – Guide for Concrete Bridge Construction

Officially published in September 2011 (revision/reapproval by 2017). Committee members may obtain a copy at:

<http://www.concrete.org/COMMITTEES/GetDocument.asp?DocID=63429>

- b) 345.1R – Maintenance of Concrete Bridge Elements, published July 2006. The document is scheduled for revision/re-approval in 2014.

ACTION: Form a committee for a review and issue a ballot for re-approval of the document if no changes are necessary

- c) 345.XR Guide for Concrete Bridge Deck Repair and Rehabilitation,

Chapter	Title	Assigned to:	Target Completion Date
1	Introduction and scope	Brown	Develop after other chapters
2	Notations and definitions	Brown	Develop after other chapters
3	Condition evaluation and method selection	St. John /Smith	Jeff Smith/Larry Olsen by 4/25/2012
4	Material and method selection	Weyers /St. John	Brown to check status by 3/25/2012
5	Removal methods	Williams	Ballot closes 04/03/2012
6	Repair methods	St. John /Kim /Williams	Draft by 09/30/2012 6.1 – Williams by 09/30/2012 6.2 – St. John by 09/30/2012 6.3 - Kim complete
7	Overlays	Sprinkel /Silwferbrand	Sprinkel/Silwferbrand to draft by 09/30/2012
8	Electrochemical methods: CP and ECE	Brown	Brown to draft by 09/30/2012
9	Appurtenances, joints, and parapets	Akbari /Foden /Carroll /Williams /Harris	9.1 – Foden by 09/30/2012 9.2 – Foden by 09/30/2012 9.3 – Carroll by 08/15/2012 9.4 – Williams/Harris by 09/30/2012

ACTION:

Detailed outline posted at:

<http://www.concrete.org/COMMITTEES/GetDocument.asp?DocID=66499>

Key: **Authors** highlighted in yellow
Changes highlighted in light blue

List of chapters and assignments:

Outline – posted at:

<http://www.concrete.org/COMMITTEES/GetDocument.asp?DocID=66499>

updated as of 03/20/2012

Current Assignments:

Chapter 3 – Overview (brief synopsis) from **Jeff Smith/Larry Olson**

Chapter 4 – **Weyers** has not had time to work on this chapter as yet.

Chapter 6 – see assignments below

6.1 – Williams by 09/30/2012

6.2 – St. John by 09/30/2012

6.3 - Kim complete

Chapter 7 – Silwferbrand and Sprinkel to draft new outline – by 09/30/2012

Chapter 8 – Brown to draft – by 09/30/2012

Chapter 9 – subsections re-assigned

9.1– Sidewalks – Andy Foden – by September, 2012 (Andy will review extensive outline and reduce/combine/condense)

9.2 –Parapets – Andy Foden – by September 30, 2012

9.3 – Joints – Chris Carroll – by August 15, 2012

Extensive literature review is taking more time

9.4 – Approach slabs – Mark Williams/Devin Harris – by September 30, 2012

- d) 345.2R – Guide for Widening of Highway Bridges, updated and approved in 1998, re-approved in 2005.

ACTION:

TAC comments addressed. Waiting for new photos. Paul St. John might have some. Then can re-submit to TAC

- 8) SDC report on Hycrete – received request from staff to discuss in committee:

“The Strategic Development Council is a council of the ACI Foundation, and serves as a forum for individuals to discuss the key issues and challenges that impact the concrete industry. One of the SDC goals is to facilitate the development and acceptance of new technologies to benefit the concrete industry.

As a service to innovators, the SDC’s Technology Management Committee (TMC) provides general guidance on if and how a technology can be reported on by ACI.

You are asked to review the report, which identifies your committee as a possible home for ACI information related to this technology. Please let Mr. David Stokes, the TMC liaison for this technology, know if this item can be included on your next meeting agenda. His email is david.stokes@fmc.com or his phone number is (704) 868-5492.”

Committee Response: While the committee holds that it is inappropriate to specifically endorse proprietary products in its documents, the committee will include general discussion of classes of products, such as the one reported by the SDC, that are useful to reduce permeability of concrete and impart other potential benefits when addressing preservation and maintenance techniques for concrete bridges.

- 9) Paul St. John motion: Mike Brown has done a great job as Chair.

Chair Brown’s response: Committee success is a function of the work of the members creating documents and participation. It has been a pleasure to work with this committee.

10) Adjournment: The meeting was adjourned at 4:00 pm.

Respectfully submitted,

Rita K. Oglesby

Secretary 345

Related Committees/Documents

201 – Durability
222 – Corrosion of Metals in Concrete
546 – Repair of Concrete
364 – Rehabilitation
365 – Service Life

References:

NCHRP 4 ;
AASHTO-AGC-ARTBA Joint Committee Task Force 3G Report "Guide Specifications for Concrete
Overlays of Pavements and Bridge Decks";
NYSDOT Bridge Deck Evaluation Manual;
NYSDOT Materials Bureau "Field Survey Manual for Bridge Deck Overlay Projects"

ASTM - LCCA

RILEM

NCHRP – Service Life Prediction Report

NACE – R/C Condition Evaluation

ICRI Guide 03732 (*provides an extensive coverage of concrete removal methods*)