

## Meeting Minutes

### VRMCA Technical Committee Meeting - October 13, 2021

The VRMCA Technical Committee met in person at The Place in Glen Allen Virginia on Wednesday, October 13. The list of attendees is attached.

Items I., II., III., and IV: Chairman Kuhn called the meeting to order at 10:12 AM. Several members said they wanted to join the meeting virtually by Zoom, but none did. The antitrust statement was made available to attendees. A motion (Wilson) and Second (Goode) were made to approve the minutes of the previous meeting, which were approved. Chairman Kuhn said he would revamp the meeting invitation list. He stated there is a link on the left side of the VRMCA website for those interested to request invites for each VRMCA committee.

#### Item V. Recap of Past Items:

- Members Dennison and Imperial stated a Newsletter Technical article about the technical challenges of the Hampton Roads Bridge Tunnel was in progress.
- Chairman Kuhn reported there is a draft in progress for "Technical Bulletin: Acceptance Cylinder Handling". Member Keiper stated the USBC for VA does not address cylinder handling specifically.
- Chairman Kuhn requested topics for additions technical bulletins, articles, infographics, etc. Some suggested topics were significant changes to ACI documents or ASTM standards.
- Chairman Kuhn presented a detailed update on the Concrete Testing Adherence Collaboration program in VA. He referenced a VRMCA summer newsletter article, and he gave the program website: [concretetac.com](http://concretetac.com). He mentioned the alliance between the Colorado associations and NRMCA. He stated the NRMCA goal was to launch 1 Jan, 2022. He said there will be a nationwide request for volunteer "observers." Kuhn stated the association manager Easter is actively pursuing participation for VRMCA.

#### Item VI. Member Updates:

- Longtime member Kevin Goode stated he was leaving the industry to pursue other endeavors. The membership thanked Kevin for his service and wished him well.

#### Item VII. VDOT COOP:

- Chairman Kuhn explained the new composition for the VDOT/Industry membership: 14 VDOT and 14 Industry. Industry members will include 8 VRMCA members and 6 others. The agenda for the next technical committee meeting will include selection of the VRMCA members.
- Chairman Kuhn reviewed the very extensive list of initiatives still pending. The most recent minutes and action items are attached. Some highlights from the discussion:
  - o VDOT may eliminate A3 mixes due to durability concerns.
  - o Need 3 to 4 names from industry for a joint VDOT/Industry task force on E-ticketing.
  - o Chairman Kuhn requested volunteers for an industry subcommittee to make a recommendation regarding VDOT allow non-approved materials for Options 2 and 3

Item VIII New Business and Industry Reports:

- Member Dennison reported that VDOT allowed opening of a bridge based on the results of the non-destructive testing Windsor Probe test.
- Member Keiper reported that Virginia Chapter ACI is now offering the ACI Self Consolidating Concrete Testing Technician certification
- Member Imperial requested companies submit projects for the annual Virginia Chapter ACI awards program for 2021. Awards will be presented on March 17, 2022 at the VA Concrete Conference.

Item X. Future Meetings:

- Chairman Kuhn asked the committee for input on the frequency of Technical Committee meetings. Member Wilson suggested the committee meet 3 times per year with two of the meetings scheduled for 2 weeks prior to the VDOT COOP meeting. The suggested meeting dates for 2022 would be January 19, July 20, and October 19.

The meeting adjourned at 12:15 P.M.

Respectfully Submitted,

Hank Keiper, P.E.  
The SEFA Group

Attachments:

VDOT COOP September 2021 Meeting Minutes  
VDOT COOP September 2021 Meeting Action Items  
Meeting Attendee Sign-In Sheet

## VDOT/VRMCA Cooperative

Tuesday, September 28, 2021

10:00 AM

### Meeting Minutes

#### I. CALL TO ORDER

- Call to Order, Introductions...John Schuler, VDOT Co-Chair  
Meeting started at 10:01am.
- Anti-Trust Statement.....George Kuhn, Industry Co-Chair  
George Kuhn read Anti-Trust statement.
- Approval of minutes of last meeting  
Minutes were approved unanimously – Celik Ozyildirim motion to approve, and Soundar Balakumaran second it.

#### II. UPDATE OF ACTION ITEMS

- Approval of Charter
  - John Schuler shared and read a draft of VDOT-VRMCA Coop Charter (see attached for copy).
  - Charter was approved unanimously – Rex Pearce motion to approve, and James Swanson second it.
- Action items:
  1. Revisions of Option 2 & 3 Mix Design (*Industry*)
    - George Kuhn explained this revision started as a proposal for Option #4 for all mixes not following table II-17, due to lack of historical data or inability to create a 3-point curves. The proposal is a modified Option #1 with 500 PSI added to compressive strength requirements specified by a class of concrete.  
Action Requested by the Industry: Modify Option #3 to allow for less than the minimum 15 field results per the Engineer approval.
    - Vanna Lewis suggested instead of Engineer in language, change to DME for consistency.
    - David Shiells asked to ensure that Design Build projects are included thus VDOT maintains the control over the approval process.

**Action Item #1: Language submitted by Industry will be reviewed by Department. If specification is changed, language will be vetted through internal and external stakeholders.**
  2. ACI 211 Clarification (*Industry*)
    - Bob Neal stated ACI 211 is designed to be a starting point for mix design creation, and not to be used to “lock” quantities since the mixes tend to be over

sanded requiring more water, thus increasing shrinkage potential. This change would only apply to Option #1 as proposed.

- Vanna Lewis asked if the proposal is just to use it as a minimum quantity for coarse aggregate, and not as a range.
- Bob Neal answered no maximum is needed since the quantity of coarse aggregate will depend on workability of the mix.
- There was a confusion to what Option this proposal would apply to, and as a part of the review all 3 options will be compared. Some thought ACI 211 applies to all 3 VRBS Options.

**Action Item #2: The Industry shall submit the proposed changes to language to VDOT for review, and both parties to review all 3 options to ensure this change only applies to Option #1.**

3. Low Shrinkage Class A4 Modified- Set limit for SRA (VDOT)

- Angela Beyke said after last meeting data was submitted to VDOT for review with different quantities of SRA admixture. The Industry's proposal is to add a language allowing addition of set amount of SRA if the producer doesn't want to perform shrinkage testing.
- Michael Sprinkel stated the VTRC recommendation was to eliminate shrinkage testing completely and to replace it with 1.5 gal/CY of SRA as data suggested. The data showed 50% less shrinkage when 1.5 gal was used.\*
- Celik Ozyildirim added if shrinkage testing is to stay, then it would have to be performed also during the production of the concrete.
- Patrick Sullivan responded ASTM C157 is a lab test and would prefer not to be performed out in the field.
- Derek Imperial added many ASTM C157 tests are being performed, the test have many challenges affecting the results and final data.
- George Kuhn responded the Industry haven't discussed the elimination of testing, and only asked for another option to be added. George asked for ~30 days to discuss it within the Industry and will come back with the response after.

**Action Item #3: The Industry will discuss the new proposal and come back to VDOT with the response.**

*\* The VTRC recommendation was proposed at the March 2021, CRAC meeting.*

4. Admixture Dispensing Systems (Industry)

- Patrick Sullivan stated the current language in VRBS doesn't allow for use of modern technology by requiring graduated, transparent measuring devices. The Industry's proposal is to revise the VRBS 217.04 to allow devices meeting NRMCA requirements. The new language would still allow graduated, transparent devices to be used.
- Celik Ozyildirim asked if the verification is performed by the same device, and stated his concerns with the verbiage in the proposal since the proposal sound as only the new technology will be allowed.
- Patrick Sullivan responded two meters working independently and reinstated the Chapter 2.4 of NRMCA Cert allows for both systems to be used.

**Action Item #4: VDOT shall review Chapter 2.4 of NRMCA Cert Book, and the proposed language.**

5. New Mix Creation for A3 Curb Mix (VDOT)

- George Kuhn has discussed and shown proposal of an additional line to be added to VRBS Table II-17 for A3c Slipform. The new mix would allow for smaller aggregate size to be used when concrete is placed by curb machine.
- Celik Ozyildirim asked if the surface is exposed to salt application, and if so shouldn't VDOT be looking into revising all A3 paving mixes to adjust W/C ratio to 0.45 in accordance with ACI and require 4000 PSI for salt treated surfaces. He also added VRBS Table II-17 paving mixes don't reflect reality because currently used mixes are actually 4000 PSI to fulfill flexural strength requirements. Celik's recommendation is to revise all A3 paving mixes in table II-17.
- Bob Neal agreed and added A4 P&R should be used for slipform.
- Patrick Sullivan added the producers are trying to provide the material requested by the contractors.
- George Kuhn added many contractor use A4 P&R to address small aggregates but job specification require A3
- Industry will discuss further and bring proposal to next meeting.

**Action Item #5:** Topic to be further discussed and brought back at next meeting.

6. ACI 237 for SCC

- Derek Imperial proposed ACI 237 in addition to ACI 211 for SCC mixes. The reason behind is per ACI 211 the mixes are very sandy.

**Action Item #6:** VDOT shall review the proposal, and if agree begin the internal vetting process.

7. Electronic Ticketing

1. *VDOT perspective*

John Schuler shared a presentation of VDOT's perspective for e-ticketing. VDOT is looking for consistency, while being contacted by many developers, and is seeking industry's input. E-ticket can act as a GPS, as well as a payment. VDOT's vision is to use it as a digital invoice, visual picture of dispatched trucks with material, keeping track of delivered material, etc. VDOT would like to perform some pilot projects, and would like to partner with the Industry to evaluate different software. The end goal is for Industry and VDOT to agree on a software, and for VDOT to be able to "consume" the producer's data.

2. *Industry Perspective*

George Kuhn stated the Industry has interest to allow it, and is willing to assist.

- Vanna Lewis added low cellular signal is a problem, and the most critical requirement for e-ticketing is ticket must be available to the project before the material is discharged.

**Action Item #7:** The Industry shall submit 3-4 names for VDOT/Industry e-ticketing task force.

- Outstanding Action Items:

- 1. Subcommittee on ACI 211

- No updates, and it should be addressed prior to the next meeting

- 2. Subcommittee on ACI 318

No updates, and it should be addressed prior to the next meeting

### III. NEW BUSINESS

- Clarity on use of notes of Table II-17(*Industry*)
  - George Kuhn stated footnotes under table II-17 are not always being applied as intended. Some Special Provisions list requirements, and also add “in accordance to table II-17”. The Industry would like to add language that “footnotes are valid every time table II-17 is recalled”.
  - Travis Higgs asked to be careful to write a blank statement because in some cases engineering judgment needs to be used to resolve discrepancies between material specific specification and recalled II-17 with footnotes.
  - James Swanson stated it is VDOT’s responsibility to be clear on their specification, and any recalls of the table II-17 and the footnotes should only apply to the materials that it was intended to apply.
  
- Aggregate Approved Lists (*VDOT*)
  - George Kuhn said VRBS require materials to be on Approved List, and many quarries rely on VDOT test results. The question was how often the test data is being updated on Approved List? Second question related to options #2 and #3 was if non-VDOT approved materials could be used with these options?
  - Angela Beyke stated the test data is updated every 3-5 years, and VDOT’s testing is just a verification testing to ensure the material meet requirements. Angela added sources not on Approved List shall reach out to VDOT for approval.
  
- Shotcrete Acceptance
  - George Kuhn stated ACI 506 was updated in 2016 and it differs from VRBS 412.03(g). The Industry’s proposal is to revise VRBS language to be consistent with ACI 506.
  - The discussion steered to shotcrete’s usage, any problems related to it, and diameter of the cores. No issues with shotcrete reported, shotcrete used typically for substructure repairs.
  - Angela Beyke mentioned recently developed supplemental special provision which will be added to the meeting minutes.
  
- Open Floor
  - Air Minus Admixtures:
    - Milton Bunch asked how many people allow Air Minus admixture to be used.
    - Kwame Adu-Gyamfi asked does VDOT allows reducing air, and if it is an approved material can it be used?
    - Brian Kimmer answered NoVA doesn’t allow non-VDOT approved admixtures to be used (air minus, slump busters, etc.).
    - Celik Ozyildirim asked why not using VMA for reducing slump?
    - Patrick Sullivan answered retardation could be an issue, but if too much superplasticizer is added VMA could help to bring it back within the specs.
    - Bob Neal asked if there were any studies on air void system.
    - Patrick Sullivan answered air reducing admixtures eliminate larger bubbles first, then smaller, and currently assumption is no negative effects.
    - Brian Kimmer asked if there is a set amount to be used per % air reduction.

- Patrick Sullivan answered air testing would determine the amount based on try and error.
- Milton Bunch stated technical data sheet for Air Minus say 5% reduction in compressive strength, and asked who will be responsible for failing concrete?
  
- Patrick Sullivan answered Air Minus is not a VDOT approved admixture.
- Celik Ozyildirim asked if air reducing admixtures will work with other admixtures.
- Patrick Sullivan answered not necessarily, but air admixtures usually work hand in hand with air deformers based on dosage.

#### **IV. NEXT MEETING**

Meeting Adjourned at 12:51PM.

Next meeting approximately in February.

Action Item	Detail	Subcommittee/ Responsible Party	Estimated Completion Date	Status Update
Modification to Option 2 & 3 Mix Design	Industry will put together language and propose to the Department.	Angela Beyke, Celik, George Kuhn, Teck Chua		Proposed language provided to Department. Currently under Review
Modification of ACI 211 Requirement	Purpose of 211 is to provide proportions as starting place for trial batches. But have been seeing trend that those proportions then become the design mix. Suggested that change in the MOI or the Spec book to clarify how ACI 211 is to be applied would address this.	Angela Beyke		Proposed language provided to Department. Currently under Review
Low Shrinkage Class A4 Modified	Data to be sent to VDOT/VTRC for review	Angela Beyke, M. Sprinkel	30 days	Industry will revisit and discuss
Admixture Dispensing Systems	Action requested-require the use of equipment that is compliant NRMCA Plant certification guidelines.	Industry will discuss and come up with language draft to send to Angela		Proposed language provided to Department. Currently under Review
ACI 318 for acceptance	Industry has proposed using ACI 318 for acceptance method instead of current 217 language	Subcommittee		



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