

TRB 2022 Tri-Service Airfield Asphalt Industry – User Producer Group Meeting

Meeting Minutes - 11 January 2022 PM Session

Introduction

Intro from Matthew Hoyle (TSC) and Dr. Mark Buncher (AI)

Scan-in/Check-in reminder

Meeting start (1300)

Airfield Asphalt Certification Program (AACP) Update

Update presented by Matthew Hoyle (TSC) – See Presentation

3x Training Courses available

- Government Audit courses are authorized

Recent (2020 – Early 2022) milestones presented in slides

- 5x QC Manager courses presented to far
- 2x laboratory technician courses so far
- First inspector course upcoming in Jan 2022

UFGS 32 12 15.13 Revisions

- Language Presented
- Current version available in WBDG

Certification Requirements

- QC Manager mandated (as of Jan 2022) must attend specific courses and be certified
 - o Requirements presented in slides
 - o Includes certification exam
 - o Statistics for 2021 presented in slides
 - 58 passed of 61 attempted qualifications
- Laboratory Technician requirements presented in slides
 - o Requirements presented in slides
 - o Statistics for 2021 presented in slides
 - 30 passed of 30 attempted qualifications

- Inspector upcoming requirements presented in slides
 - o Requirements presented in slides
 - o Statistics for 2021 presented in slides
 - No courses executed, so no pass/fail statistics available

AACP

- AACP QR code presented (airfieldasphaltcert.com)
- AACP Management Group presented (4-year terms)
- AACP Certification Verification website available

Airfield Asphalt Pavement Technology Program (AAPTTP)

Update from Brett Williams (NAPA) – See Presentation

Cooperation between NAPA and FAA

\$3.2 million assigned to projects

Objectives

- Re-establish AAPTTP
- Identify airport issues eligible for funding
- Coordinate FAA and industry efforts for solving problems
- Pursue technology transfer

Program Coordination Group agency list presented in slides

Project Technical Panel actions

- Develop RFPs and facilitates advertisement
- Reviews proposals and selects Project Team

Focus areas of previous AAPTTP presented in slides

- Previously wrapped up in 2010.
- Previous reports available on National Center for Asphalt Technology site.

Current Project List presented in slides

First project is update of HMA Paving Handbook (AC 150/5370-14B)

- History and data presented in slides, ultimately awarded to Asphalt Institute
- Focused on airfield and highways

Second project is Binder Grade Selection

- History and data presented in slides, ultimately awarded to National Center for Asphalt Technology
- Focus is on development of guidance and tool to aid in selection of binder grade

Third project is Rutting evaluation in mix design

- History and data presented in slides, ultimately awarded to University of Nevada at Reno
- Evaluate equivalency of current options and provide new requirements if needed

Fourth project is Cracking evaluation in mix design

- History and data presented in slides, ultimately awarded to University of Illinois at UC
- Evaluate framework and tests which could be included to assess crack performance during mix design

Fifth project is evaluation of Longitudinal Joint Performance in Airfield Asphalt Pavements (up to Phase 3)

- History and data presented in slides, may pursue Phase 3
- Determine best practices for maintenance of longitudinal joints
- Evaluate technologies and methods which could improve joint performance

Sixth project is evaluation of High Speed Exits

- History and data presented in slides, project to start in Q2 2022
- Determine failure mechanism for high speed exit failures
- Evaluate technologies and construction methods which could improve joint performance

RFP currently out for one project

- Feasibility of Cold-Central Plant Recycling at Airports
- Deadline of 16 Feb 2022.

Other potential topics presented in slides

AAPTP website presented

- Mailing list signup available on website
- RFPs available on website
- Will eventually include information on current projects
- Upcoming and potential work listing available on website

USAF Review of Recent Issues

Spec being checked

Incident with pop-outs or aggregates degrading in place on a project

- Are the LA abrasion limits appropriate? Would approaching these limits result in the observed issue?
 - o Audience question: Only LA abrasion, or aggregate specs altogether?
 - Initial focus on LA abrasion, but ERDC will advise on where to look.
 - Industry indicating aggregate properties and that transformations of aggregates when exposed to air (transformation to clay for example) may also result in issues, recommending also looking at how to handle and screen aggregate after mining. May not be purely the fault of operators.
 - Specific gravity one specific area to evaluate
 - Pop-outs associated with drum buildups has been identified by industry; drum maintenance and overall plant control is important.
 - Individual project case is unlikely to be drum
 - Individual project having issues with aggregates from two different quarries.
 - ERDC encouraged by industry to look at spec itself; may need to review consistency of consultant prepared specifications
 - Review aggregate test reports
 - Up front and throughout the job
 - Occurring to some degree already with current spec
 - o More to come, ideally by next presentation

Also looking at Longitudinal Joints

Also looking at surface treatments

- When to use which types of treatments, when to apply engineering judgement on decision-making
- The right treatment for the right pavement at the right time

Also looking at slight changes to fuel resistance on asphalt spec

- Want options to have larger aggregate
- Executed recently in Toronto, FAA is testing spec edits
- Trying to eventually double lifespan of asphalt surface without doubling cost, testing technologies
- Also to address areas where material availability is more limited (i.e. remote sites)

Also looking at surface treatment at longitudinal joints

- Want to have capability for REDHORSE teams to execute
- Want the ability to preserve pavements

Army

Largest current struggle with contractors and USAF stakeholders is contractor buy-in on pay factors and proper implementation

- Army expects that 100% payment is aligned with quality lot reports representing quality execution
- Current contract vehicles are restraining options
 - o Lump-sum contracts
- Still need quality lot reports despite complications
- Design is a contributing factor; not including pay factors in package
- Educate KTR/GOV team on what is being looked for
 - o Air voids, smoothness, plan grade
- Additional comments:
 - o What is the production data?
 - 1-yr, 2-yr, 5-yr post construction data?
 - Pinpoint potential issues
 - Looking to increase scrutiny on report quality
 - Response: also being looked at for airport certification training
 - o GPS recommended for keeping the structure on grade
 - Asphalt contractor must perform due diligence on their work
 - Consider 3D design and production requirements.
 - Machine-control for implementation of design and tolerance control
 - Industry wants to increase exposure of agencies and other firms to new technology options
 - Mandating of new technology on specifications
 - o Is Value Engineering consideration of new technology performed after award?
 - Not generally, contractor needs to initiate discussion if interested
 - VECP process is available in contracts, usually seen as more work but is considered by Government personnel when proposals are made
 - Can also consider RFIs during bidding phase
 - Reminder given to industry that data rights protection is enforced on the Government side when appropriate; information would need to be marked accordingly if desired

FAA

Highlight of updates from 2021

Update provided by Jeff Crislip (impromptu at request of Group). Verbal presentation only.

- Engineering Brief 22
 - o P-407 for asphalt stabilized grade
 - o To be implemented on 5370-10 in the future
 - Review in progress before formal implementation
- Updates for 5320-6G
- Updates for 2.0.7

2022

- Advisory circular updates may be impacted by continuing resolution
 - o Funding concerns
 - o Contract expiry in 2021
- 5335-5D will hopefully be released in next couple months
- FARFIELD 2.0 released, will be standard software for PCR reporting
- Considering one final mod of 5370-10H
 - o Need to aggregate issues brought to FAA attention and review which are appropriate to pursue
 - o Not looking to release until FY25; start internally around 2023
 - May have more formal update at next year's meeting

Balanced Mix Design Discussion

Initial note: Focused on DOT rather than DoD

Should not be considered a new idea

- Known in mix design community for years, some slides initially prepared before 2000
- Terminology has changed, but not core concepts
 - o Strength and durability from mix design
 - o Asphalt proportion of mix
 - o Separately, public concern is smooth ride and skid resistance
- Need to combat rutting while increasing durability
- Mix design history goes as far back as 1890
 - o Binder content reducing over time
 - o Presented in slides
 - o Superpave intended as multi-level process, but only level 1 implemented
 - Volumetrics + TSR
 - Level 1 intended for up to 1 million ESALS with L2 and L3 for heavier loads, to include rutting and cracking performance testing

Balanced mix design attempting to combine three areas

- Volumetric criteria, rutting criteria, cracking criteria
 - o Sweet spot was the intended area for L2 and L3 of Superpave
- Driving criteria:
 - o Rutting: No; covered in L1
 - o Cracking: Yes (increasing nationally)
 - o Durability: Yes (noted in relation to cracking)
- Goal is uniform pavement performance
 - o Enable innovation in materials and specs
 - DOTs not setup for innovation
 - Usually initiated by industry due to different incentives
 - o Optimize economics
 - Avoiding overdesign
 - Increased recycling influenced by increasing asphalt cost
- AASHTO PP 105 approaches presented
 - o Consideration of aging, traffic, climate, and layers
 - o Approaches A and B start with volumetric designs
 - B adds in moisture sensitivity testing later in process
 - o Approach C reduces emphasis on volumetrics
 - o Approach D
 - Most innovative
 - No volumetric requirements
 - o Rapid increase in state-level implementation of approaches
 - o Movement towards Hamburg Wheel Tracking Test vs APA Test
 - Allows for review of moisture damage
 - o Two most common cracking tests
 - I-FIT test
 - IDEAL-CT
 - o Testing discussed are not measuring fundamental properties
 - “Go/No-Go” decision index tests

Proposed Update on Specifications

UFGS 32 12 15.13

Highlighted note: Draft language

Aiming for preparation by Feb 2022, but likely ready by May 2022

New/Adjusted Items

- Pavement Lots

- Specific identification of lot reports
- Navy and NASA to be addressed in appropriate sections
- Straightedge testing frequency update
 - Added frequency for QC (not acceptance)
- Final Profilograph Testing update
 - Added final testing for runways/taxiways that have been constructed/reconstructed
 - Evaluate between lots for overall PI
- Plan Grade deliverable update
 - Audience comment: May want to consider focus on asphalt layers, though already addressed elsewhere in spec
 - Currently only look at surface lift, but considering evaluating intermediate layers as well
- Material transfer vehicles
 - Added minimum onboard storage, exact values under consideration
- Recycled Asphalt Shingles now prohibited
- Echelon paving addressed
 - Want to encourage when possible
 - Insights included for how to evaluate
 - Linking with weighted pay factors

See Agenda FY21 Contracted Specification Updates

Upcoming publications with expected dates listed in Agenda

- John Anderson (Tigerbrain) soliciting industry comments on their three UFGS updates

UFGS 32 01 16.71

Highlights of Cold Milling Spec

- Attempting to hold contractor to performance standpoint
- Significant increase in designer notes
- Most of spec has been revised
- Biggest change is addition of measurement and payment paragraph
- Added references and definitions
- Added language for QC requirements when profile milling and associated QC plan requirements.
- Revised entire language on milling machines and drums. Provided options.
- Added language for sensors and scanning components
- Industry highlights potential focus of specifications focusing on speed of milling machines

Meeting concluded at approximately 1530 ET.