

Group Discussion Focuses on Solutions

A popular element of ACPA's airport pavement training program is open discussions about interpreting and applying airport concrete pavement specifications used by the Federal Aviation Administration (FAA) P-501 and Unified Facilities Guide Specification (UFGS) 32 13 14.13 specifications.

This group discussion serves as a guide for interpreting, gaining a better understanding, and gaining practical insights about the specifications.

The discussion will be based on field experience and guidance from top pavement experts. Much of this information has been gained by working with contractors, owner's representatives, military engineers, and others with direct, first-hand experience. It is not intended as a basic primer on the specifications; instead, it will cover details of specification-related issues, challenges, and questions that commonly occur on the grade.

— **October 22nd** —

Pavement Design and Preconstruction Activities

7:30 AM — 8:00 AM — Continental Breakfast

8:00 AM — 8:15 AM — Welcome and Workshop Agenda (Jerry Voigt, President and CEO, ACPA)

This presentation will welcome everyone to the workshop. The attendees will provide self-introductions and ACPA President and CEO, Jerry Voigt will outline the content of the workshop and discuss the objective of the concrete paving industry in holding this all-important workshop.

8:15 AM — 9:00 AM — FAA — FAA Southern Region Welcome and Discussion of Regional Issues (Anthony Cochran, FAA Southern Region) *(Invited)*

This presentation will welcome all to the FAA Southern Region. Southern Region pavement engineer, Anthony Cochran will discuss expectations of the FAA for paving projects as well as highlight and discuss some of the issues important to the FAA Southern Region.

9:00 AM — 9:45 AM — United States Department of Defense's Air Force Welcome, Introduction, and Discussion of Agency Concerns (Dr. Craig RUTLAND, Pavement Subject Matter Expert, Air Force Civil Engineering Center). - *(Invited)*

In this presentation, Dr. Rutland will discuss the various aspects of airfield pavement requirements from the government's perspective. The discussion will center around the airfield pavement using agency's concerns and why strict requirements for high quality, durable pavements are so important.

9:45 AM — 10:00 AM — Break

10:00 AM — 10:45 AM — Concrete Paving Fundamentals (Angela Folkestad, CO/WY Chapter ACPA)

This lesson will discuss basic terminology of airfield pavement, critical design aspects, important components for pavement performance, various distresses and their causes, and quality in airfield pavements. In addition, implication of poor quality, lack of process control, and the effect of variability will be discussed.

10:45 AM – 11:15 AM – Overview of Department of Defense Guidance (UFC's & Engineering Technical Letters) (Harold Honey, Michael Baker)

Numerous guide documents exist that must be followed for the design and construction of military pavements. This lesson will present a brief discussion of the required guidance and engineering technical letters that should be followed for military airfield pavement design and construction.

11:15 AM – 11:45 AM – Overview of Federal Aviation Administration Guidance on Pavement Design and Construction (Advisory Circulars & Engineering Briefs) (Greg Cline or Doug Johnson, FAA) (*Invited*)

Numerous guide documents exist that must be followed for the design and construction of commercial pavements using Airport Improvement Program (AIP) funds. This lesson will present a brief discussion of the required guidance and engineering briefs that should be followed for FAA airfield pavement design and construction.

11:45 AM – Noon – Pre-Construction Activities (Gary Mitchell, ACPA)

Various pre-construction activities must be undertaken prior to beginning construction of airfield pavements. Numerous items that must be considered during the pre-bid, bidding, and pre-construction phases of a project will be discussed. Some of these items include the pre-bid meeting, partnering, qualifying construction materials, and pre-paving conference.

Noon – 1:00 PM – Lunch (Provided)

1:00 PM – 1:45 PM – FAA Specifications for Subbase, Base, and Stabilized Base Construction (Greg Cline or Doug Johnson, FAA) (*Invited*)

Subbase, base, and stabilized base construction are all important for proper airfield pavement construction. The lesson will present and discuss FAA specification requirements for P-154, P209, P304, and other specification items in AC 150/5370-10.

1:45 PM – 2:30 PM—Mix Design Constituents and Processes to Meet the Corps of Engineers Requirements (Harold Honey, Michael Baker)

There are many misunderstandings pertaining to the Corps of Engineers requirements for mix design constituents and processed to meet the requirements of 32 CFR 14.13. The Corps of Engineers requirements are more rigorous than other agencies. This lesson will present the process and what is required for the mixture design submittal to meet the 32 CFR 14.13 requirements.

2:30 PM – 2:45 PM — Break

2:45 PM – 3:15 PM — The Case for Slag Cement in Airfield Pavements (Gordon McLellan, Lehigh Hanson, Inc.)

Slag is being used in concrete mixtures at many airports across the Country as a mitigator for ASR; so, it is not something new. The FAA limits fly ash use to 10% when coupled with slag cement and up to a maximum replacement of 55% of the cement. However, cases have been shown where slag cement coupled with fly ash in excess of 10% have proved to mitigate ASR expansion. This lesson will present the history of slag cements, address the pros and cons of using slag cement as well as explain the current uses, limitations, and clear up myths pertaining to the technical ramifications of using slag cement in concrete paving mixtures.

3:15 PM – 4:00 PM — Plant Certification, Plant Management, and Uniformity Testing (Gary Mitchell, ACPA)

Concrete batch plants must meet certification requirements and produce consistent high-quality concrete to be delivered to the paver. This presentation will discuss what is required for plant certification, concrete plant management requirement, and uniformity testing requirements to meet military and commercial

airfield pavement requirements.

4:00 PM – 4:45 PM testing Requirements for Airfield Pavements – What Do They Really Tell Us? (Toy Poole, CTL Group)

Various testing requirements are referenced in the military and commercial airport concrete pavement specifications. These testing requirements contain instructions on how to conduct the testing, tolerances, repeatability, and significance. In addition, interpretation of various testing protocols and specification requirements will be discussed.

4:45 PM – 5:00 Day one wrap up, discussion, and questions and answers.

— October 23rd —

Construction Techniques, Quality Control, and Inspection

7:30 AM – 8:00 AM – Continental Breakfast

8:00 AM – 8:15 AM – Review and Q & A from Day 1

8:15 AM – 9:00 AM – Construction Techniques (Gary Mitchell, ACPA)

This lesson will discuss various considerations for construction techniques. Topics of discussion will include: concrete placement issues, dowel bar installation and tolerances, concrete consolidation/vibration effort, finishing/curing, protection against rain, etc. In addition, this lesson will include a detailed discussion of joint type and layout as well as joint sealing.

9:00 AM – 10:00 AM – Contractor Quality Control/Quality Assurance Requirements for Quality Concrete Pavements (Martin Holt, IHC)

In this lesson, attendees will learn what should be included in a contractor quality control program. Topics of discussion include process control requirements, contractor QC requirements, testing requirements, control charts, reporting, etc. Emphasis will be from the contractor point of view as to what should be included in a QC program to exceed the specification requirement.

10:00 AM – 10:15 AM – Break

10:15 AM – 11:00 AM – Using HIPERPAV High Performance Concrete Paving Software to Monitor Uncontrolled Cracking Risk (Sabrina Garber, The Transtec Group)

A temperature management plane is important for paving in warm weather. This lesson will discuss using HIPERPAV to monitor theoretical thermal stresses during concrete placement, finishing, and curing as a contractor's tool to monitor the risk of early-aged, uncontrolled cracking.

11:00 AM – 11:45 AM – Construction Inspection – What the Department of Defense is Looking For (Cpt. Jason Hernandez, Air Force Institute of Technology) (*invited*)

Construction inspection is an important part of airfield pavement construction. Many times, the contractor or construction team may not fully understand the requirements to meet the specification; likewise, the inspector may not fully understand the intent of the specifications. This lesson will provide the attendees an understanding of construction inspection requirements from the agency point of view.

11:45 AM – 1:00 PM – Lunch (provided)

1:00 PM – 2:00 PM – Concrete Paver Set-Up and Operation to Meet P-501 and 32 13 14.13 Requirements (Ron Guntert, Guntert & Zimmerman)

This lesson will discuss slip form paving equipment and requirements to meet the concrete pavement specification. Important components of the slip form paver, operations, concrete mixture requirements, etc. will be discussed.

2:00 PM – 3:00 PM – 3D Stringless Control Systems (Mathew Morrison, GOMACO) *(Invited)*

The state-of-the-art method for slipform paving is stringless technology. This lesson will present the current methodologies for stringless control systems, how they work, and how to produce high quality, smooth pavements without using stringlines.

3:00 PM – 3:15 PM – Break

3:15 PM – 4:00 PM – Airfield Pavement Smoothness (Michael Gerardi, APR Consultants) *(Invited)*

In this lesson airfield pavement smoothness will be presented. Discussion will center around short- and long-wave length smoothness, effects of rough pavements on aircraft, and various methods of measuring airfield pavement smoothness.

4:00 PM – 4:45 PM – Airfield Pavement Marking (Donna Speidel, Sightline, Inc.)

Airfield marking is often incidental to an airfield paving project. When the pavement marking process is done correctly, the marking can last for several years; however, when poorly installed, pavement markings can fail within weeks or months. This presentation will focus on best practices that will result in quality materials installed by appropriate equipment that comply with basic application requirements. A brief discussion of the standard specifications, construction techniques and practices that will result in longer lasting markings, and commonly encountered problems in meeting project specifications will be presented. In addition, identification of practices that result in premature failure and poor performance will be discussed.

4:45 PM – 5:00 PM – Day two wrap up, discussion, and questions and answers.

— October 24th —

Construction Planning and Specifications

7:30 AM – 8:00 AM – Continental Breakfast

8:00 AM – 9:30 AM – P-501 Federal Aviation Administration Concrete Pavement Specification (Greg Cline or Doug Johnson, FAA) *(Invited)*

FAA Advisory Circular 150/5370-10, Item P-501 is the guide specification for airfield concrete pavement construction. In this lesson, the attendees will gain an understanding of the requirements and intent of the airfield concrete pavement specification. Discussion will define the agency requirements for producing high quality, durable, pavements. Topics will include aggregate and other material requirements, tolerances, strength requirement, and acceptance criteria.

9:30 AM – 9:45 AM – Break

9:45 AM – 10:15 AM – Planning for Hot or Cold Weather Paving (Gary Mitchell, ACPA)

Often, airfield paving projects must be performed during hot or cold weather. Discussion in this lesson will center around construction methods for hot and/or cold weather paving.

10:15 AM – Noon – Unified Facilities Criteria (UFC) 32 13 14.13 Concrete Pavement Specifications (Staff, USACE Transportation System Center) *(Invited)*

Unified Facilities Criteria part 32 13 14.13 is the guide specification for airfield concrete pavement construction. In this lesson, the attendees will gain an understanding of the requirements and intent of the airfield concrete pavement specification. Discussion will center around agency requirements for producing high quality, durable pavement. Topics will include aggregate and other material requirements, tolerances, and expectations of the contractor performing the work. Contractor Quality Control expectations will also be discussed.

Noon– 1:00 PM –Lunch

1:00 PM – 2:00 PM – Lessons Learned from When Things Go Wrong (Jim Lafrenz, Tigerbrain Engineering)

Sometimes during airfield pavement construction things do not always go as planned. In these cases, many lessons have been learned. In the lesson, the attendees will be presented with lessons learned from when things went wrong. The discussion will center around specific instances and examples where problems and issues occurred, and how these issues were dealt with.

2:00 PM – 2:45 PM – Case Study: Fort Lauderdale International Airport runway keel replacement (Broward County Aviation Department (BCAD), Boh Brothers, Kimley-Horn and Associates) *(Invited)*

In this lesson, attendees will have the opportunity to hear from the design and construction team on the reconstruction of Runway (10L-28R) keel section. This fast-track project is an example of teamwork beginning from the design phase all the way through construction. Perspectives from each stakeholder will be discussed followed by a question and answer session.

2:45 PM – 3:00 PM – Day three wrap up, discussion, evaluation, and questions and answers.