



ACPA

Best Practices in Airfield Paving Workshop

October 24–26, 2023

Vib Hotel by Best Western Denver RiNo
3560 Brighton Boulevard
Denver, CO 80216



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Program Overview

The American Concrete Pavement Association will present a three-day national workshop on best practices used in the design, construction, and rehabilitation of concrete pavements used for airport applications.

The workshop program will feature technical presentations by subject matter experts with practical experience in the topic areas. Leading the discussions will be experts from the U.S. Army Corps of Engineers' Transportation System Center, the FAA Headquarters Office of Airport Safety and Standards, Air Force Civil Engineering Center, ACPA, and companies with direct involvement in the design and construction of FAA and Tri-Services projects.

Who should attend?

The workshop is intended for owners' representatives, design engineers, contractor personnel, and others with an interest in concrete pavement design, construction, and rehabilitation for airport applications.

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. The discussion 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. The preliminary workshop agenda (which is subject to change) follows.

Earn Valuable Professional Development Hours

Participants may earn up to 20 professional development hours for this training and technology transfer event. ACPA offers professional development hours with the assumption of their use in self-reporting states and provinces. Reporting is done on an honor basis, and participants are responsible for maintaining their own records and for determining the applicability and acceptance with their respective licensing/certification organization. Check with your licensing agency to confirm acceptance of this workshop for meeting PDH requirements.

SCHEDULE OF EVENTS: Day 1

Tuesday, October 24th

Pavement Design Guidance and Preconstruction Activities

7:00 AM – 8:00 AM	Continental Breakfast
8:00AM – 8:30 AM	Welcome & Workshop Agenda (Angela Folkestad, Executive Director, CO/WY Chapter ACPA; Gary Mitchell, Chief of Engineering & Construction, ACPA) This presentation will welcome everyone to the workshop. The attendees will provide self-introductions and ACPA's Chief Engineer will outline the content of the workshop and discuss the objective of the concrete paving industry in holding this all-important workshop.
8:30AM – 9:00AM	FAA Northwest Mountain Region Welcome and Discussion of Regional Issues (Cindy Hirsch Lead Airport Engineer/Paving Specialist NW Mountain Region FAA) This presentation will welcome everyone to the FAA NW Mountain Region. NW Mountain Region pavement engineer, Cindy Hirsch will discuss expectations of the FAA for paving projects as well as highlight and discuss some of the issues important to the FAA NW Mountain Region.
9:00AM – 9:45AM	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) 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
10:00AM – 10:45AM	Concrete Paving Fundamentals (Gary Mitchell, 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.
10:45AM – 11:15AM	Overview of Department of Defense Guidance (UFC's & Engineering Technical Letters) (Rich Thuma; Manager, Aviation Military and Special Projects Group, Crawford, Murphy, and Tilley (CMT)) 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 follow for military airfield pavement design and construction.
11:15AM – 12:00PM	Overview of Federal Aviation Administration Guidance on Pavement Design and Construction Advisory Circulars & Engineering Briefs (Harold Honey, FAA Headquarters Engineer) 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 follow for FAA airfield pavement design and construction.
12:00PM – 1:00 PM	LUNCH

SCHEDULE OF EVENTS: Day 1

Tuesday, October 24th

Pavement Design Guidance and Preconstruction Activities

- 1:00PM – 1:45PM** **FAA Specifications for Subbase, Base, and Stabilized Base Construction (Harold Honey, FAA Headquarters)**
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, P307 and other specification items in AC 150/5370-10.
- 1:45PM – 2:30PM** **Perfect Specifications and Other Myths (Dr. Peter Taylor, Director of the Concrete Pavement Technology Center (CP Tech Center) and Airport Concrete Pavement Technology Program (ACPTP))**
Agencies have guide specifications for engineers to use when specifying projects. Oftentimes the engineer provides the specifications without knowing the intent or consequences when the specifications are not strictly met. The lecture will discuss, why do we write specifications, what we want from them, how do we know got what we want, and the philosophy of testing.
- 2:30PM – 2:45PM** **BREAK**
- 2:45PM – 3:30PM** **Insights on Portland Limestone Cement (PLC) & Concrete Mixtures (Anne Miller, Quality Manager, GCC Pueblo Plant & Urs Fox, Technical Services Manager, GCC)**
With the recent change to PLC use nationwide, the obvious question is whether a correlation exists between the newer cement type and performance issues. A significant history now exists of using PLC for concrete pavements on DOT, local agency, and airfield projects. This presentation identifies the importance of re-evaluating mix designs to verify that material combinations are compatible and provides strategies for developing and batching concrete mixes when utilizing new material combinations.
- 3:30PM – 4:15PM** **Portland Limestone Cement in Airfield Pavements (Dr. Peter Taylor, CP Tech Center and ACPTP)**
Cement companies across the country have shifted from manufacturing Type I/II cement to predominantly Type II, or Portland Limestone Cement (PLC). While the cements are very similar, there are important differences that need to be acknowledged when developing mix designs and producing concrete. This lesson discusses how different cement characteristics affect properties of fresh and hardened concrete and what strategies can be utilized to achieve the desired properties for airfield concrete pavements.
- 4:15PM – 4:45 PM** **Mix Design requirements for Airfield Paving (Matt Fonte, Fonte and Company)**
There are many misunderstandings pertaining to the airfield concrete pavement requirements for mix design constituents and processes to meet the requirements of 32.13 and P-501. Airfield paving concrete requirements are more rigorous than for other applications. This lesson will present the process and what is required for the mixture design submittal to meet the 32.13 and P-501 requirements as defined by TSPWG M 3-250-04.97-05 Proportioning Concrete Mixtures with Graded Aggregates for Rigid Airfield Pavements.
- 4:45PM – 5:00PM** **Day One Wrap & Questions and Answers**
Happy Hour Reception to Follow
Great Divide Brewing Company, 1812 35th Street, Denver, CO 80216

SCHEDULE OF EVENTS: Day 2

Wednesday, October 25th

Construction Techniques, Quality Control & Specifications

7:00 AM – 8:00 AM	Continental Breakfast
8:00 AM – 8:15AM	Review and Q&A from Day 1
8:15AM – 9:00AM	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.
9:00AM – 10:00AM	Contractor Quality Control/Quality Assurance Requirements for Quality Concrete Pavements (Martin Holt, Quality Control Director, WW Clyde) 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.
10:00AM – 10:15AM	BREAK
10:15AM – 11:05AM	P-501 Federal Aviation Administration Concrete Pavement Specification (Harold Honey, FAA Headquarters) 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 focus on common areas of concern that need to be understood by the owner, engineer, and contractor along with agency perspectives on how to address common disputes using the authority established in Section 50 of AC 150/5370-10.
11:05AM – 12:00PM	Unified Facilities Criteria (UFC) 32 13 14.13 Concrete Pavement Specifications—Part 1 (Larry Stringer, USACE Transportation System Center) 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 Tri-Services airfield concrete pavement specification. Discussion will center around agency requirements for producing high quality, durable pavement and why some stringent requirements are necessary. Topics will include aggregate and other material requirements, tolerances, and expectations of the contractor performing the work. Planned updates to 32 13 14.13 will also be discussed.
12:00PM – 1:00 PM	LUNCH
1:00PM – 1:30PM	Unified Facilities Criteria (UFC) 32 13 14.13 Concrete Pavement Specifications—Part 2 (Larry Stringer, USACE Transportation System Center) Continuation from the morning's discussion of 32 13 14.13 Concrete Pavement Specifications.

SCHEDULE OF EVENTS: Day 2

Wednesday, October 25th

Construction Techniques, Quality Control & Specifications

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| 1:30PM – 3:00PM | Quality Control, Quality Assurance and Pavement Inspection from the Department of Defense perspective. (Aaron Maki, USACE TSC)
Quality control and quality assurance for military airfield pavement is more stringent than typical concrete pavement practices. This lesson will discuss Quality control issues, experiences, and expectations from the Government's perspective for airfield paving. In addition, this lesson will discuss Government inspection expectations and the role of the construction inspector. |
| 3:00PM – 3:15PM | BREAK |
| 3:15PM – 4:00PM | Airfield Pavement Smoothness (Michael Gerardi, APR Consultants)
In this lesson airfield pavement smoothness will be presented. Discussion will center around short- and long-wavelength smoothness, effects of rough pavements on aircraft, and various methods of measuring airfield pavement smoothness. |
| 4:00PM – 4:45PM | The Case for Concrete Overlays for General Aviation Airports (Gary Mitchell, ACPA)
The FAA is committed to building sustainable and resilient pavement for future airport infrastructure. Concrete overlays are particularly useful for sustainable and resilient pavement at general aviation facilities. This presentation will discuss the benefits of concrete overlays for general aviation airports, why concrete overlays are ideal for general aviation, and general guidance for overlay design. |
| 4:45PM – 5:00PM | Day two wrap & Questions and Answers |

SCHEDULE OF EVENTS: Day 3

Thursday, October 26th

Construction Planning and Sustainability

7:00 AM – 8:00 AM	Continental Breakfast
8:00 AM – 8:15AM	Review and Q&A from Day 2
8:15AM – 8:45AM	Environmental Product Declarations (EPDs) for airfield concrete pavements (Sarah Dalton; Pavement Engineer, CO/WY ACPA) EPDs for concrete mixtures are becoming required information for airfield paving projects. Much discussion is centered around the use of EPDs to indicate the reduction of global warming potential (GWP) as the concrete paving industry moves toward being carbon neutral by 2050. The current practice of using EPDs, the pros and cons of EPDs as an indicator of GWP reduction from cradle to gate as compared to cradle to grave will be discussed in this lesson.
8:45AM – 9:30AM	Sustainability and Concrete Pavements (Dr. Peter Taylor, CP Tech Center/ACPTP) Sustainability and Resiliency are becoming more important with ongoing challenges with global climate changes. The FAA is including consideration of resilient and sustainable practices in airfield pavement infrastructure in the design and construction process. Concrete pavements are both sustainable and resilient. This lesson will discuss some of the challenges with global climate change and how concrete pavements can be used to address these challenges.
10:00AM – 10:15AM	BREAK
10:15AM – 11:00AM	Slip-Form Paver Operation (Tim Nash; Director, Concrete Products, Wirtgen America) This presentation will present how the slip-form paver operates. The discussion will highlight the aspects of different parts of the slip-form paver and the importance of proper setup such that the paver functions properly.
11:00AM – 12:00PM	Planning for Sustainable Construction; Denver International Airport Case Study (presenters TBD) Description to be announced.
12:00PM – 1:30 PM	LUNCH
1:30PM – 2:00PM	Load Buses & Travel time to Construction Site
2:00PM – 3:30PM	Airfield Tour at Denver International Airport
3:30PM – 4:00PM	Load Buses and Return to Workshop Site Day 3 Wrap Up, Discussion, Evaluation, and Q&A