

# AC 150/5370-10H

## Updated Standard Specifications for Construction of Airports

SWIFT 2019  
Murphy Flynn  
September 11, 2019



Federal Aviation  
Administration



# Overview

- **Why Update**
- **Applicability & Use**
- **Summary of Changes  
(time permitting)**



# Update Overview

- **Reviewed past MOS**
- **Reviewed our ‘working copy’**
  - with our notes,
  - comments from field, conferences and Industry



# Industry Coordination

## → Industry Groups

- Airports Consultants Council
- American Concrete Pavement Association
- American Society of Civil Engineers
- Asphalt Institute
- National Precast Concrete Association
- Geosynthetic Materials Association
- National Stone Sand and Gravel Association



# Overview of 10H

- Updated References (e.g ASTM's)
- Extensive technical and editorial edits
- Parts renamed/reorganized (including Items)
- Added 6 New Items
- Additional guidance in Engineer Notes on use of individual specifications
- Clarified what 5370-10 is intended to be for airfield pavement and airfield development
- Material properties (requirements) in table format
- Greater Focus on Quality Control throughout



# Aircraft Gross Weight > 30,000 lbs

## → Airports with aircraft weights > 30,000 lbs

- Use is mandatory for federally funded projects (AIP or PFC)
- Sponsors may request a MOS in accordance with Order 5300.1 on a project by project basis



# Aircraft Gross Weight $\leq$ 30,000 lbs

## → Airports with aircraft weights $\leq$ 30,000 lbs

- The airport sponsor may use 5370-10
- Use of state highway specifications for airport pavement (surface & base) does not require a MOS but the sponsor must identify their use in the Engineers Report



# Standard not included in 5370-10H

## → Material Standards MOS per Order 5300.1G

- Just because no FAA material standard does not mean the sponsor may use whatever material or method they choose
- Still no sole source or proprietary materials
- Must list standards to be followed in Engineers Report





# Developing Project Specifications

## **Standard Specification is Starting Point**

Standard specifications are broad in nature since they are developed to be applied to all geographical areas of the United States, its territories and possessions.

## **Engineer Notes are guidance on use and editing**

The standard specifications contain 'Engineer Notes', intended to provide guidance for the Engineer that is editing the standard specification to develop the project specifications. The Engineer notes are just that, notes to the engineer developing the project specification and are not to be left in the project specifications for the contractor and field personnel.

## **Engineering Judgement**

It is not practicable to attempt to establish guides for every situation that could be encountered on individual projects. Engineering Judgement' needs to be utilized by both the FAA and Owners Engineer.



# Principal Changes

**FAA AC 5370-10GH**  
**~~Standards for Specifying~~**  
**~~Construction of Airports~~**  
**Standard Specifications for**  
**Construction of Airports**

**Published 12/21/18**  
**Principal Changes**



Federal Aviation  
Administration



# Renamed / New Parts

10G	10H	Title
Part 1	Part 1	General <b>Contract</b> Provisions
	Part 2	<b>General Construction Items</b>
Part 2	Part 3	<b>Sitework</b>
Part 3	Part 4	Base Courses
Part 4	Part 5	<b>Stabilized</b> Base Courses
Part 5	Part 6	Flexible Pavement
Part 6	Part 7	Rigid Pavement
Part 7	Part 8	<b>Surface Treatments</b>
Part 7	Part 9	Miscellaneous
Part 8	Part 10	Fencing
Part 9	Part 11	Drainage
Part 10	Part 12	Turfing
Part 11	Part 13	Lighting Installation



# Renamed Specifications

10G	10H	Title
Section	<b>C-100</b>	<b>Contractor Quality Control Program (CQCP)</b>
Section	<b>C-105</b>	Mobilization
P-156	<b>C-102</b>	Temporary Air and Water Pollution, Soil Erosion, and Siltation
P-101	P-101	<b>Preparation/Removal of Existing Pavement</b>
P-157	P-157	<b>[Cement][Lime]</b> Kiln Dust Treated Subgrade
P-217	P-217	Aggregate-Turf <b>Runway/Taxiway</b>
P-301	<b>P-220</b>	Cement <b>Treated Soil</b> Base Course
P-304	P-304	Cement Treated <b>Aggregate</b> Base Course (CTB)
P-401	P-401	<b>Asphalt Mix Pavement</b>
P-601	<b>P-404</b>	Fuel Resistant <b>Asphalt Mix</b> Pavement
P-501	P-501	<b>Cement Concrete</b> Pavement
P-609	P-609	<b>Chip</b> Seal Coat
P-602	P-602	<b>Emulsified Asphalt</b> Prime Coat
P-603	P-603	<b>Emulsified Asphalt</b> Tack Coat
P-605	P-605	<b>Joint Sealant for Pavements</b>
P-610	P-610	<b>Cement Concrete</b> for Miscellaneous Structures
P-632	P-632	<b>Asphalt</b> Pavement Rejuvenation



# New Specifications

Item	Title
P-156	Cement Treated Subgrade
P-157	CKD/LKD Treated Subgrade
P-207	In-place Full Depth Reclamation (FDR) Recycled Asphalt Aggregate Base Course
P-307	Cement Treated Permeable Base Course (CTPB)
P-608R	Rapid Cure Seal Coat
P-623	Emulsified Asphalt Spray Seal Coat
L-125	Installation of Airport Lighting Systems



# Part 1: General Provisions

- **Section 10**      **New Definitions**
  - Certificate of Analysis      (COA)
  - Certificate of Compliance      (COC)
  - Modification of Standards      (MOS)
  - Contractors Quality Control (QC) Facilities  
[previously 'Contractor Laboratory']
  - Quality Assurance (QA) Laboratory [previously 'Laboratory']
  - Resident Project Representative (RPR)
  - Owner Defined Terms
  - Control Strips



# Part 1: General Provisions

- **Section 50**
  - Removed outdated guidance on layout and stakes
- **Section 60**
  - Revised guidance on Engineers Field Office
- **Moved Sections**  
**100, 105, 110 out of GP's**



# **New** Part 2: General Construction

- **Item C-100 Contractor Quality Control Program (CQCP)**
  - Encouraged for all projects; Required >\$500K in paving
  - Assure continuous monitoring of quality of materials and production
  - Establish corrective action plans
  - (NEW) Pay Item for CQCP
- **Item C-102 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control**
  - Renumbered (Previously P-156)
- **Item C-105 Mobilization**
  - Moved from GP's since this is a pay item
- **Item C-110 Percentage of Material Within Specification Limits (PWL)**
  - Moved from GP's since how to implement Payment





# Item C-100 Contractor Quality Control

- **Pavement Construction is a Manufacturing process**
- **Quality Control (QC)**
  - Contractor Control of materials and process to meet project specifications
  - More than just test results
- **Must submit Contractor Quality Control Program**



# Item C-100 Contractor Quality Control

- **Must submit Contractor Quality Control Program**
  - Encouraged for all projects
  - Required >\$500K in paving
- **Quality Control (QC)**
  - Contractor Control of materials and process
    - Assure continuous monitoring of quality of materials and production
    - Establish corrective action plans
  - More than just test results
- **Paving projects Preconstruction Workshop**
  - Now responsibility of Contractor
  - RPR / Engineer, Contractor, Subs, Testing laboratories, Owner
- **(NEW) Pay Item**



# FAA Expects Quality Airport Pavement

## Quality - more than test results

- Proper Materials
- Workmanship
- Equipment
- Inspection
- Documentation
- Communication
- Test Results



# Advisory Circular 150/5370-10H

## Focus on Quality throughout the Update

Improving & Embracing CQC

Establish and Maintain 'culture of quality'

Understanding Quality Assurance

Clarification of QC and QA  
Roles and Responsibilities



# Part 3: Sitework

Renamed (previously Part 2 Earthwork)

- **Item P-101 Preparation/Removal of Existing Pavement**
  - Retitled ~ More than 'Surface Preparation'
  - Repair of AC & PC prior to overlay
  - Removal of Paint and Rubber
    - Limit high pressure water < 10,000 psi
    - Added "Rotary Grinding"
  - Preparation of Joints prior to resealing
  - Preparation of Cracks prior to sealing



# Part 3: Sitework

- **P-152 Excavation, Subgrade, and Embankment**
  - Significant rewording for clarification
  - Control Strip to demonstrate equipment and operations
  - Oversized > 30% retained on  $\frac{3}{4}$  sieve: AASHTO T-180 Annex  
Correction of maximum dry density and optimum moisture
  - Recognize Digital Terrain Model (DTM) for quantities
  
- **P-154 Subbase Course**
  - Significant rewording for clarification
  - Control Strip to demonstrate equipment and operations
  - Oversized > 30% retained on  $\frac{3}{4}$  sieve: AASHTO T-180 Annex  
Correction of maximum dry density and optimum moisture
  - Added Gradation when RAP or RCO used



# Part 3: Sitework

- **P-155 Lime-Treated Subgrade**
  - Control Strip to demonstrate materials, equipment & process
- **P-156 Cement Treated Subgrade**
  - **New specification** for modification of subgrade
  - Control Strip to demonstrate materials, equipment & process
- **P-157 [Cement][Lime] Kiln Dust Treated Subgrade**
  - **Added option** for use of either CKD or LKD
  - Control Strip to demonstrate materials, equipment & process
- **P-158 Fly Ash Treated Subgrade**
  - Control Strip



# Part 4: Flexible Base Courses

~~~ In response to most common MOS ~~~

- **P-207 Full Depth Reclamation (FDR)  
Recycled Asphalt Aggregate Base Course**

- **New Specification**
- **How it will perform (Amount HMA, Condition HMA, Amount Aggregate, Use of Stabilizing Agent, etc.)**
- **Better than P154, Maybe than 209 (if stabilizing agent)**
- **Control Strip**





# Part 4: Flexible Base Courses

## P-208 Aggregate Base & P-209 Crushed Aggregate Base

- **P-208 and 209 - 2.1**
  - Added Table of Required Material Properties

| Crushed Aggregate Base Material Requirements                                |                                                                                                                                   |            |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|
| Coarse Aggregate Portion (retained on the No. 4 (4.75 mm) sieve)            |                                                                                                                                   |            |
| Material Test                                                               | Requirement                                                                                                                       | Standard   |
| Resistance to Degradation                                                   | Loss: 45% maximum                                                                                                                 | ASTM C131  |
| Soundness of Aggregates<br>by Use of Sodium Sulfate or<br>Magnesium Sulfate | Loss after 5 cycles:<br>12% maximum using Sodium sulfate - or -<br>18% maximum using magnesium sulfate                            | ASTM C88   |
| Percentage of Fractured<br>Particles                                        | Minimum 90% by weight of particles with at<br>least two fractured faces and 100% with at least<br>one fractured face <sup>1</sup> | ASTM D5821 |
| Flat Particles, Elongated<br>Particles, or Flat and<br>Elongated Particles  | 10% maximum, by weight, of flat, elongated, or<br>flat and elongated particles <sup>2</sup>                                       | ASTM D4791 |
| [ Bulk density of<br>slag                                                   | Weigh not less than 70 pounds<br>per cubic foot (1.12 Mg/cubic<br>meter)                                                          | ASTM C29 ] |
| Fine Aggregate Portion (Passing the No. 40 (425µm) sieve)                   |                                                                                                                                   |            |
| Liquid limit                                                                | Less than or equal to 25                                                                                                          | ASTM D4318 |
| Plasticity Index                                                            | Not more than five (5)                                                                                                            | ASTM D4318 |

<sup>1</sup> The area of each face shall be equal to at least 75% of the smallest mid-sectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

<sup>2</sup> A flat particle is one having a ratio of width to thickness greater than five (5); an elongated particle is one having a ratio of length to width greater than five (5).



# Part 4: Flexible Base Courses

## **P-208 Aggregate Base & P-209 Crushed Aggregate Base**

- **P-208 and 209**

- Option for Separation Fabric
- Control Strip to demonstrate materials, equipment & process
- More

- **P-209**

- QC for Gradation by lot

- **P-210, P-211, P-212, P-217, P-219**

- Option for separation fabric
- P-217 New title –representative of not really a pavement
- P211 Additional info on Oolitic vs non Oolitic



# Part 5: Stabilized Base Courses

- **P-304 Cement Treated Aggregate Base Course (CTB)**
  - New title
  - Control Strip
- **P-306 Lean Concrete Base Course**
  - Control Strip
  - Added option to test thickness by survey
- **P-307 Cement Treated Permeable Base Course (CTPB)**
  - New specification
  - Size 67 (or 57) aggregate stabilized with cement
    - ~ 1000 ft/day permeability



# Part 6: Flexible Pavement

## Part 7: Rigid Pavement

### Swapped “Contractor Quality Control (CQC)” and “Material Acceptance” paragraphs

(material acceptance and measurement / payment paragraphs are together and quality control prior to these paragraphs)

~~~~~

### Terminology CHANGE throughout all specifications “ASPHALT” & “CEMENT”

**Item P-401 Asphalt Mix Pavement**

**Item P-403 Asphalt Mix Pavement [ ] Course**

**Item P-404 Fuel-Resistant Asphalt Mix Pavement [ Previously P-601]**

**Item P-501 Cement Concrete Pavement**

NOTE: Hot Mix Asphalt now Asphalt Mix (Asphalt Mixture)

NOTE: Portland Cement Concrete now Cement Concrete (Hydraulic Cement Concrete)



# Part 6: Flexible Pavement

## Part 7: Rigid Pavement

### ~~Test Section~~ Control Strip

- Demonstrate materials, equipment, and construction Process
  - CQC, QA “working together” for quality

### Smoothness Testing

- Added paragraph identifying smoothness equipment
- Added paragraph “Smoothness for Contractor Quality Control”
  - Performed daily, *Considering* to be included on control charts
- Added paragraph “Profilograph Roughness for QA Acceptance”
  - Only applicable on new or reconstructed RW & TW
  - Not intended for mill and fill or aprons
  - Results considered as “as-built”; for airport’s pavement management program

### Contractor QC Control Charts

- CQCP shall indicate appropriate action



# Part 6: Flexible Pavement

## Aggregate

- “no known history of detrimental pavement staining due to ferrous sulfides”
- Aggregate Properties in Table

Coarse Aggregate Material Requirements (Portion retained on the No. 4 (4.75 mm) sieve)		
Material Test	Requirement	Standard
Resistance to Degradation	Loss: 40% maximum	ASTM C131
Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate	Loss after 5 cycles: 12% maximum using Sodium sulfate - or - 18% maximum using magnesium sulfate	ASTM C88

## Aggregate Gradations ~ Table 2 Adjusted

- Adjusted to assure gradations limited to one nMAX
- Consistent with DoD UFGS
- Added VMA requirements & Minimum Construction Lift Thickness



# Part 6: Flexible Pavement

Sieve Size	Percentage by Weight Passing Sieves		
	Gradation 1	Gradation 2	Gradation 3 <sup>1</sup>
1 inch (25.0 mm)	100	--	--
3/4 inch (19.0 mm)	90-100	100	--
1/2 inch (12.5 mm)	68-88	90-100	100
3/8 inch (9.5 mm)	60-82	72-88	90-100
No. 4 (4.75 mm)	45-67	53-73	58-78
No. 8 (2.36 mm)	32-54	38-60	40-60
No. 16 (1.18 mm)	22-44	26-48	28-48
No. 30 (600 μm)	15-35	18-38	18-38
No. 50 (300 μm)	9-25	11-27	11-27
No. 100 (150 μm)	6-18	6-18	6-18
No. 200 (75 μm)	3-6	3-6	3-6
<b>Minimum Voids in Mineral Aggregate (VMA)</b>	<b>14.0</b>	<b>15.0</b>	<b>16.0</b>
<b>Asphalt percent by total weight of mixture:</b>			
Stone or gravel	4.5-7.0	5.0-7.5	5.5-8.0
Slag	5.0-7.5	6.5-9.5	7.0-10.5
<b>Recommended Minimum Construction Lift Thickness</b>	<b>3 inch</b>	<b>2 inch</b>	<b>1 1/2 inch</b>

<sup>1</sup> Gradation 3 is intended for leveling courses. FAA approval is required for use in other locations.



# Part 6: Flexible Pavement

## Asphalt Binder

- Certificate of Analysis (COA) for asphalt binder
- COA for antistripping if used
- Clarified how Grade Bumps applied

### Required Grade Bump

Aircraft Gross Weight	High Temperature Adjustment to Asphalt binder Grade	
	All Pavement Types	Pavement area with slow or stationary aircraft <sup>1</sup>
≤ 12,500 lbs (5670 kg)	--	--
< 100,000 lbs (45360 kg)	1 Grade	2 Grade
≥ 100,000 lbs (45360 kg)	2 Grade	3 Grade

<sup>1</sup> Grade bumping should be applied for the top 5 inches (125 mm) of paving. The low temperature grade will remain the same.





# Part 6: Flexible Pavement

## Asphalt Mix / JMF (Marshall or Gyratory)

- Asphalt Institute MS-2 Mix Design Manual, 7th Edition
- Added Mix Performance Criteria
  - Asphalt Pavement Analyzer (APA)  
10 mm @ 4000 passes at 250 *(5 mm @ 8000 passes at 100 psi)*
- Design Criteria

Table 1. Asphalt Design Criteria

Test Property	Value	Test Method
Number of blows/gyrations	75	
Air voids (%)	3.5	ASTM D3203
Percent voids in mineral aggregate (VMA), minimum	See Table 2	ASTM D6995
TSR	not less than [ 75 ] [ 80 ] at a saturation of 70-80% <sup>1</sup>	ASTM D4867
Asphalt Pavement Analyzer (APA) <sup>2</sup>	Less than 10 mm @ 4000 passes	AASHTO T340 at 250 psi hose pressure at 64°C test temperature

<sup>1</sup> An anti-stripping agent shall be added to the asphalt, as necessary, to produce a TSR of not less than 75.

<sup>2</sup> AASHTO T340 at 100 psi hose pressure at 64°C test temperature may be used in the interim prior to publication of the next update. If this method is used the required Value shall be LESS THAN 5 mm @ 8000 passes



# Part 6: Flexible Pavement

## Acceptance

- Thickness
- Air Voids
- Mat & Joint Density
  - **SIGNIFICANT CHANGE**

### Density relative to Theoretical Maximum Density (TMD)

Test Property	Pavements Specification Tolerance Limits	
	L	U
Air Voids Total Mix (%)	2.0	5.0
Surface Course Mat Density (%)	92.8	-
Base Course Mat Density (%)	92.0	-
Joint density (%)	90.5	--



# Part 6: Flexible Pavement

## Other Clarifications

- Control Strip
  - Greater of 250 Tons or ½ Sublot
  - Pay for 'acceptable' test section
  - Remove all test section that are not acceptable
- Added what information should be in laydown plan
- Maximum cutback on longitudinal joints 3"
- Clarified Lot / Sublot
  - One Days Production divided into approximately equal sublots between 400-600 Tons
  - Less than 3 sublots combine with next or previous day
  - Less than 3,000 Tons, just pay by ton (no PWL)
  - If multiple plants treat production of each plant separate
- Tack Coats are not incidental, required using P603



# Part 6: Flexible Pavement

## **P-403**

- Small Maintenance Projects
- Shoulders, Blast Pads
- Stabilized Base under P401 or P501

## **P-403 Acceptance**

- No PWL
- 94% TMD for Mat, 92% TMD for Joint
- Air Voids – same

## **P-404 Fuel Resistant Asphalt Mix**

Surface Course

Dense, Rich Mix

Fuel Resistant Binder



# Part 7: Rigid Pavement

## Aggregate

- Testing for reactivity clarified, requirements unchanged
- Follow ASTM C33 for fine aggregate deleterious
  - No 200 no longer counted toward deleterious
- Deleterious for coarse aggregate
  - Material finer No 200 up to 1.5 if material is dust of fracture
  - Methylene blue or Xray diffraction analysis
- Engineer selects maximum size aggregate based upon thickness and what is available in area
- Combined Aggregate Gradation
  - Contractor submits PCC combined Gradation
  - Control Charts to include Coarseness & Workability Factors



# Part 7: Rigid Pavement

## Proportions and Mix Design

- Water Cement Ratio w/c
  - between .38 - .45 by weight
- Slump (maximum)
  - 2" Slip Form
  - 3" Fixed Form
  - 4" Hand Placement (irregular shape)
- Air Content
  - Engineer provides environmental exposure condition
  - Contractor selects based upon maximum aggregate size and environmental condition (Table in specification)

NOTE: Generally 3 mix designs required (slip, fix, hand)  
Not acceptable to provide 1 mix design and vary water



# Part 7: Rigid Pavement

## Equipment

- Rate of vibration sufficient to consolidate without segregation or voids
- American Concrete Institute (ACI) 309R

## Placing concrete

- Rate of vibration sufficient to consolidate without segregation, voids or vibrator trails
- Excessive edge slump remove area the full width of the slip form lane

## Limitations on Mixing and Placing

- ACI 306R Cold Weather Concreting
- ACI 305R Hot Weather Concreting
- Temperature Management Program
  - Example of TMP: FHWA HIPERPAV 3



# Part 7: Rigid Pavement

## Control Strip

- **Mix Design is starting point**
- **Adjustments made during control strip become Production Mix**
- **Mix ‘Extruded from paver meeting the edge slump tolerance and with little or no finishing.....Minor adjustments to the mix design may be required to place an acceptable control strip....The production mix will be the adjusted mix design used to place the acceptable control strip.’**





# Part 7: Rigid Pavement

## Repair, removal or replacement of slabs

- How bad is bad
- Shrinkage cracks  $< 1/3$  slab depth cleaned and repaired with high molecular weight methacrylate (HMWM) or epoxy resin in presence of engineer
- Cracks  $> 1/3$  slab in interior remove and replace
- Spalls  $< 1/2$  slab  $< 25\%$  joint length
  - Spall repair payment for that slab reduced by 5%
- Grinding over 25% of slab 5% reduction in payment  
(In addition that no payment is made for any grinding)



# Part 7: Rigid Pavement

## Contractor Quality Control

- Gradation
- Moisture
- Slump
- Air
- Unit Weight and Yield
- Temperature
- Smoothness

## Control Charts

- Slump and Air
- Fine and Coarse Aggregate Gradation
- Combined Gradation (CF & WF)
- Considering Smoothness
- Corrective Action
  - CQCP shall indicate appropriate action



# Part 7: Rigid Pavement

## Control Chart Limits<sup>1</sup>

Control Parameter	Individual Measurements	
	Action Limit	Suspension Limit
Gradation <sup>2</sup>	*3	*3
Coarseness Factor (CF)	±3.5	±5
Workability Factor (WF)	±2	±3
Slump	+0.5 to -1 inch (+13 to -25 mm)	+1 to -1.5 inch (+25 to -38 mm)
Air Content	±1.5%	±2.0%

<sup>1</sup> Control charts shall developed and maintained for each control parameter indicated.

<sup>2</sup> Control charts shall be developed and maintained for each sieve size.

<sup>3</sup> Action and suspension limits shall be determined by the Contractor.



# Part 7: Rigid Pavement

## Acceptance

- Acceptance Sampling and Testing
  - Samples transported in molds; Curing by immersion (after 24 hours)
- Lot Size
  - 2000 cubic yards; Sublots equal 400-600 cubic yards
- Acceptance Criteria
  - Strength
  - Thickness
  - Grade
  - Profilograph
  - Adjustments for Repairs

**Payment** Rejected PCC may stay in place at 50% pay with concurrence of Engineer and FAA



# Use/Application of Surface Treatments

P Spec	Title	RW	Other	Note
P608	Emulsified Asphalt Seal Coat	No limit	No Limit	1
P608R	Rapid Cure Seal Coat	No Limit	No Limit	1
P609	Chip Seal Coat	< 12,500	< 12,500	1 , 2
P623	Emulsified Asphalt Spray Seal Coat	NR	< 60K w/FAA	1, 4
P626	Emulsified Asphalt Slurry Seal	< 12,500	< 60,000	1
P629	Thermoplastic Coal Tar Emulsion	< 60,000	>60K w/FAA	
	Microsurface	< 12,500	<60,000	1
	Sand Slurry Spray Seal	NR	<12,500	1,4
P630	Refined Coal Tar Emulsion without Additives Slurry Seal	Not Recommended	< 60,000 Aprons Only	3
P631	Refined Coal Tar Emulsion with additives Slurry Seal	Not Recommended	< 60,000 Aprons Only	3
P632	Asphalt Pavement Rejuvenation	Not Recommended	< 60,000	1

Note 1: Any pavements which aircraft do not operate; including shoulders, overruns, roads, and parking areas.

Note 2: A cape seal (chip seal followed by a slurry seal (item P626) may be an option where only small aircraft

Note 3: Any apron areas that require fuel resistant coating serving aircraft less than 60,000 lbs

Note 4: <60,000 w/FAA concurrence except on RW or acute angled exit TW



# Part 8: Surface Treatments

## P608 Emulsified Asphalt Seal Coat

- New Aggregate Gradation Requirements
- Certificate of Analysis for emulsified asphalt
- Small change in Emulsion / Residue Properties
- Small change in polymer properties
- *1% polymer requirement*
  
- Required Friction Testing previous projects
- Equipment Calibration, Verification, Pressure Tested
- Verify application rate daily
  
- Test Area and Test Sections Required all projects
- Friction Testing on RW and High Speed TW



# Part 8: Surface Treatments

- **P608-R Rapid Cure Seal Coat**
  - New specification for areas need quicker cure
  - State/Local authorities may restrict use due to presence of volatile organic compounds (VOC)
- **Different from 608**
  - Aggregate Gradation & Characteristics
  - Material Properties
  - Higher % gilsonite
  - Application rates
- **Application, etc. similar**



# Part 8: Surface Treatments

- **P609 Chip Seal Coat**
  - New title to better reflect what this is
  - Aggregate properties summarized in table format
  - Certificate of Analysis (COA) on asphalt
  - Calibration certification with in same construction season





# Part 8: Surface Treatments

- **P623 Emulsified Asphalt Spray Seal Coat**
  - New Specification
  - Polymer modified ‘clay-filled’ asphalt emulsion product (not coal tar)
  - Performance function of pavement condition
  - Applied in a 2 and often 3 coat process
  - Where applicable still under review



# Part 8: Surface Treatments

**P-626 Emulsified Asphalt Slurry Seal**

**P-629 Thermoplastic Coal Tar Emulsion**

**P-630 Refined Coal Tar Emulsion w/o additives, slurry Seal**

**P-631 Refined Coal Tar Emulsion with additives, slurry Seal**

**P-632 Asphalt Pavement Rejuvenation**

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**Added guidance in Engineer Notes on use of each individual spec.**

**Certificate of Analysis (COA) for emulsified asphalt, other liquids**

**Technical data on Polymer from manufacturer**

**Misc. other changes specific to spec**



# Part 9: Miscellaneous

- **P-602 & P-603 Emulsified Asphalt Prime Coat & Tack Coat**
  - Proper Application of Tack Coat required to achieve proper bond to underlying layer
  - Required even between lifts of HMA
  - Application Rate - Table of Residual and Bar Rate
  - Added Pay Item for Tack Coat
- **P-604 & P-605 ‘Joint Seals and Sealants’**
  - Must demonstrate method of cleaning joint in presence of engineer
- **P-606 ‘Two-Component for Sealing’**
  - Material must be compatible for type of pavement
  - Different materials properties needed in PCC and HMA



# Part 9: Miscellaneous

## P-610 'Other Concrete'

- Aggregates tested (Reactivity) within 1 year  
Provision to require 20% Type F ash if  $> 0.1\%$  but less than  $.2\%$
- Acceptance by each days placement

## P-620 'Markings'

- Preparation of Surfaces; extensive changes  
Differentiate between Preparation of new pavement  
Removal of Existing Markings
- Test Strip Preparation of pavement markings prior to remarking
- Temp Markings
- New Pay Item

## P-621 'Grooves'

Saw-cut groove purpose is to minimize hydroplaning during wet weather  
Provides a place for water to be ejected from under tire  
Purpose of grooves is not to increase friction (and does not)



# Questions



Federal Aviation  
Administration