

State Specifications for Airport Pavements

Presented to: REDAC

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Federal Aviation
Administration



Research Request from AAS-100

- In-Service Performance of Airport Pavements Constructed Following State Specifications for Highway Materials
August 8, 2018



In-Service Performance of Airport Pavements Constructed Following State Specifications for Highway Materials

- National Center for Asphalt Technology (NCAT)
Auburn University, Auburn, Alabama
Other Transaction Agreement (OTA)
Principal Investigator: Dr. Randy West
Duration: 24 months
Budget: \$250,000
Awarded: September 11, 2019

Need for this research

- The *FAA Reauthorization Act of 2018 Sec 136* requires the FAA to use specifications for highway materials for pavements at non-primary airports serving aircraft less than 60,000 pounds when requested by the state.
- Since this legislation requires the use of specifications that were not developed considering aircraft loads, tire pressures, and loading patterns, this study will provide the FAA with actual in-service performance data to evaluate if state highway materials can perform satisfactorily at non-primary public use airports serving aircraft less than 60,000 pounds gross weight. This study will evaluate all types of pavement materials, asphalt, concrete, and aggregate base materials.

FAA Specs. vs State Highway Specs

Project Scope

- Field studies to follow the in-service performance of airport pavements constructed with materials meeting State Highway Specifications.
- Comparison of State Highway Specifications to FAA specifications.
- If significant differences in performance are observed in Phase-I, then Phase-II study will be required to identify minimum performance standards for materials used for pavement construction for airports serving aircraft less than 60,000 pounds. This phase would include laboratory and full scale testing.

FAA Specs. vs State Highway Specs

PHASE-I:

TASK 1: Prepare Project Plan

COMPLETE

TASK 2: Conduct Literature Review

COMPLETE

TASK 3: Monitor In-Service Performance of Airport Pavements
Constructed Using State Highway Specifications

IN PROGRESS
10% COMPLETE

TASK 4: Technical Report

FAA Specs. vs State Highway Specs

PHASE-II:

TASK 5: Laboratory Study

TASK 6: Conduct Full-Scale Test

TASK 7: Technical Report

FAA Specs. vs State Highway Specs

Task	Description		2019			2020												2021		
			O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
1	Prepare Project Plan	Planned																		
		Actual	100																	
2	Conduct Literature Review	Planned																		
		Actual	10	50	90	90	100													
3	Monitor In-Service Performance of Airports	Planned																		
		Actual				0	0	5	5	5	10									
4	Prepare Final Report	Planned																		
		Actual																		
Deliverables	Project Plan		X																	
	Quarterly Reports					X			X			X			X			X		
	Final Report																			X

Monitor In-Service Performance of Airport Pavements

- Partial construction information has been received from:
 - ❖ Columbus County Airport, Columbus, Georgia
 - ❖ Richard B. Russell Regional Airport, Rome, Georgia
- No information has been received from:
 - ❖ Chicago Rockford International Airport, Chicago, Illinois
 - ❖ Winder-Barrow County Airport, Winder, Georgia
 - ❖ Brunswick- Saint Simons Island Airport – Brunswick/St. Simons, Georgia
- One airport was identified, Ainsworth Airport, Nebraska. Construction information and partial performance data was received for this project

Monitor In-Service Performance of Airport Pavements

- Made contact with the following organizations in an effort to identify additional projects that were constructed using highway specifications:
 - ❖ FAA Great Lakes Region Office (Jim Keefer). Referred NCAT to the Airport Consultant Council.
 - ❖ Airport Consultant Council (T. J. Schultz). They forwarded an email to their membership requesting information on projects. To date, they have provided potential projects in Tennessee, California, Florida and North Carolina.
 - ❖ FAA Eastern Region (Mahendra Raghubeer) and New England Region (Kelly Slusarski). Still awaiting a response.
 - ❖ FAA Orlando District Office (Bart Vernace). He is attempting to identify possible projects in Florida
 - ❖ Florida Department of Transportation Aviation Office (Dave Roberts). FDOT provides significant funding for aviation projects, and he will attempt to locate possible projects in Florida.

Monitor In-Service Performance of Airport Pavements

- A reporting template has been developed to compile the construction and inspection information on each project.
- No inspections of any facilities have been conducted.
- Work will continue on identifying potential projects for evaluation. Follow-up communications will be made with the appropriate airports to attempt to acquire the necessary project information. However, due to the COVID-19 pandemic, Auburn University continues to have restricted domestic travel, so minimal inspections will likely take place over the next quarter.

Major Issues/Challenges

1. Locating airport projects that have been constructed using state highway specifications.

We have reached out to multiple FAA District Offices, and they do not maintain a list of projects that were built with highway specifications, so we have had to reach out to other organizations such as the Airport Consultant Council (ACC), specific consultants, and state DOT Aviation Offices to attempt to find these projects. We have developed only a few leads on potential projects from the ACC which we are currently looking into. In addition, we also need assistance locating projects constructed using FAA specifications as well, in order to compare performance between pavements constructed using the different specifications

Major Issues/Challenges

2. Availability of construction records.

Of the few projects we have identified, it has been quite challenging to locate the requested construction records. For example, we might be able to find the plans and specifications for a project, but no test data. Part of the problem is that many times different consultant engineering firms are used during construction, and the records are not necessarily stored in one location.

3. Availability of past performance data.

So far, there seems to be a lack of performance monitoring, and if performance data is available, it is only available at one point in time.

4. Difficulties experienced with getting data/information from airports.

When we find a potential project and reach out to the appropriate contact person, it frequently takes multiple phone calls and emails to even get a response. In some cases this is likely due to the contact person not having the information we are looking for and not certain where it can be found, but in other cases it seems like the project isn't a priority with them and they just let it slide.