

Concrete Pavement Project Report

Williamsburg Regional Airport, Kingstree, SC

Background

The 2002 South Carolina pavement management program listed the pavement condition index for the apron and taxiway at Williams Regional Airport as 53 and 16 respectively. Clearly, major rehabilitation was warranted. To determine the most cost-effective alternative, the Airport's engineer—Wilbur Smith Associates, Columbia, SC—chose to design and solicit bids for both an asphalt and concrete pavement option. The concrete option proved to be the most economical. Williamsburg Regional Airport got a superior, safe, and durable pavement system for less cost than a traditional single option design.

Critical Success

Factors

- Concrete whitetopping designed for anticipated air traffic
- Fuel resistant surface
- Properly designed joint spacing
- Quality construction
- Safe, durable, and practically maintenance free



Project

Apron and Taxiway Reconstruction

Time Frame

Start date: September 15, 2004

Completion date: January 15, 2005

Scope

Alternate pavement bids were accepted for the reconstruction of the apron and taxiway. A Portland Cement Concrete (PCC) pavement whitetopping was selected based on the low bid. The construction consisted of approximately 6500 square yards of five inch thick PCC whitetopping.

“The construction on this project just went great. The concrete overlay made it easier from an engineering standpoint since we did not have to deal with any of the bad soils at the site.”

*June Witty, Project Manager,
Wilbur Smith Associates, Columbia, South Carolina*

Williamsburg Regional Airport, Kingstree, SC

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Before



After

Project Details

The apron & taxiway at Williamsburg Regional Airport were in poor condition with block cracking, rutting, and alligator cracking. To rehabilitate the apron and taxiway with an asphalt surface would have required total reconstruction. Soils in some areas at the site were poor and would have required undercutting and backfilling with a suitable material prior to reconstruction. The engineering analysis showed that a concrete whitetopping would perform as long as those areas with subgrade failure were

properly repaired. To select the most cost-effective option, the engineer solicited bids on both an asphalt and a concrete option. Two asphalt and three concrete bids were received with the low bid for both options being submitted by the same contractor. For this project, the concrete option bid was approximately fifty thousand dollars less than the asphalt option. A contract was awarded for the concrete option. The result was the airport received a safe, durable, and fuel resistant apron that should provide excellent service with little maintenance for many years.