Evaluation of Reclaimed Concrete Aggregate (RCA) as Base Material

Experimental Project Interim Report

FDOT Office  State Materials Office
District  1
County  Manatee
Financial Project  422603-1-58-01
Roadway ID  13020000
State Road No.  43
US Road No.  301
Report Date  11/14/2016
The experimental design called for 12 inches of Type B stabilization (LBR 40), 10 inches base, 1.5 inches SP 12.5, 1 inch SP9.5, and 1 inch FC 9.5. Pavement performance is evaluated in terms of pavement deflection, cracking, rutting, and smoothness.

Background

This experimental project is located on SR-43/US-301 in Manatee County. Two 1,500 feet \(^{(1)}\) test sections were constructed in the Westbound travel lane (L2), one with RCA the other with Limerock base material. The experimental sections were part of a 4.1 miles reconstruction project (FIN 422603-1-58-01) completed in February 2012. A 2014 intersection improvement project included the realignment of Fort Hamer Road to form a single intersection with 121st Ave E and SR 43A resulted in resurfacing 450 feet of the original limerock section on the north end.

Description

The experimental design called for 12 inches of Type B stabilization (LBR 40), 10 inches base, 1.5 inches SP 12.5, 1 inch SP9.5, and 1 inch FC 9.5. Pavement performance is evaluated in terms of pavement deflection, cracking, rutting, and smoothness.

\(^{(1)}\) The original limits of the limerock test section were shortened 450 feet on the North end.
Project Description

District 1
County Manatee
Financial Project 422603-1-58-01
Roadway ID 13020000
State Road No. 43
US Road No. 301
Lanes Tested L2
Project Layout
Pavement Thickness

**Limerock**

- 1.0" FC-9.5
- 1.0" SP-9.5
- 1.5" SP-12.5
- 10.0" Limerock
- 12.0" Stabilized Subgrade
- Embankment (106.5pcf @ 7%)

**RCA**

- 1.0" FC-9.5
- 1.0" SP-9.5
- 1.5" SP-12.5
- 10.0" RCA
- 12.0" Stabilized Subgrade
- Embankment (106.5pcf @ 7%)
Traffic

Traffic Count Site #130081

Cumulative ESALs in Design Lane (x10^3)

Data Unavailable
Cracking

Lane L2

Limerock  RCA

No Cracking observed

Note: No cracks were observed on either test section
Rut Depth

Lane L2

- Limerock
- RCA

Rut Depth (inch)

Smoothness

Lane L2

Mean Roughness Index (inch/mile)

- Limerock
- RCA
