

Roller Compacted Concrete

Solms Road

New Braunfels, Texas

Project Overview

Located north of San Antonio, this two-lane local road serves a residential area and light commercial businesses, while also serving as a haul road for the largest quarry operations in the nation. The existing asphalt pavement was described as a “roller coaster” or “mine field,” because of the number and severity of potholes and other distresses. Roller compacted concrete (RCC) provided the right solution.

Basic Construction Factors

- RCC thickness: 9 in.
- RCC placement width: 13 ft
- Project Size: 3,800 square yards
- Traffic: 1,500 trucks per day, one-direction.
- Test strip required
- Pavement jointed and sealed
- Joint spacing at 13 ft

Equipment Factors

- Concrete production method: Pugmill (continuous/batch)
- Paving machine: High compaction/density (1 tamper and 2 pressure bars or 2 tamper bars)
- Roller weight: 10 tons

Materials Factors

- Cement content: 450 lb/yd³
- Moisture content: 6.5%
- Nominal max. aggregate size: 3/4 in.
- Time to opening: 3 days
- Strength Requirement: 4000 psi in days, N/A
- Density Requirement(s) after Compaction: 98%
- Required compaction test method: ASTM C 1040



Fast Facts

Owner

City of New Braunfels, Tex.

Contractor

Reece Albert, Inc.

Engineer

Terracon (San Antonio)

Facility

Two-lane, mixed use roadway

Project Type

RCC

Construction Time Frame

2012

Subbase/Subbase

- Subbase Type: Cement-treated, 8 to 12 in. thick
- Subgrade Treatment: Cement-stabilized, 0 to 12 in. deep

Other project details

- Surface: 1 Section Exposed as Rolled, other section Diamond Ground
- This project is a great test section for RCC pavement under extreme loading conditions. It is servicing a cement plant, aggregate quarry, lime plant, asphalt plant, a ready mix plant, as well as other industrial applications. It was designed for 1,000 ton payloads.
- Current Conditions: The project is still in service, as of June 2015.

Maintenance of Traffic

- Project was broken up in two sections. Each section was completely shut down during construction.

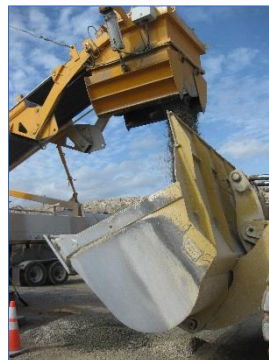
- First section was shut down and reconstructed within 1 week (1,100 ft long by 26 ft wide).
- Second section was shut down and reconstructed over a two week period.



(Left) Photo illustrates the required test strip placed for the project. Placing test strips is considered a best practice for RCC.



(Above) A truck travels along the completed section of RCC pavement hours after placement.



(Top right) A material placer deposits RCC into the hopper supplying concrete to the high-density paver.



(Right) Equipment operator compacts the RCC pavement with a tandem compaction roller.

Presented by the

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