New Enterprise Stone & Lime Co., Inc.

Project Spotlight

Roller Compacted Concrete (RCC)

High Performance Paving

Crooked Creek Wash Rack Pad

Year Installed

2018

Location

Shelocta, PA

Contractor

Rosebud Construction Services

Concrete Volume

130 cubic yards (260 tons)

Application

Fiber Reinforced Pavement

RCC was placed 12" thick using a track hoe, bulldozer and roller in late November. Mix included 3 pounds of macrosynthetic fibers as a replacement for wire mesh.

Concrete was cured for 7 days. After opening, nearly 400 triaxle trucks daily make a 90° turn on the pad before exiting through the truck wash.

Altoona Sales Area - Adrian "Ace" Snyder – 814.330.2425
Harrisburg & Chambersburg Sales Area – Scott Eichelberger – 717.729.1816
Lancaster Sales Area – Darryl Keiser – 717.286.5894
Allentown Sales Area – Clint Renninger – 484.256.8343

ROLLER COMPACTED CONCRETE
FREQUENTLY ASKED QUESTIONS

WHAT IS ROLLER COMPACTED CONCRETE (RCC)?

Roller compacted concrete was originally developed in the 1970's to provide a low-cost, high-performance pavement option for Canadian lumber mills. It consists of coarse and fine aggregate, cement, water, and admixtures just like conventional concrete. However, it requires greatly reduced water content and has aggregate proportions very similar to conventional asphalt. RCC is plant mixed, transported in dump trucks, placed with an asphalt paver and compacted using the same rollers as are used with asphalt. While its appearance is often compared to "white asphalt", once compacted, it performs like conventional concrete. Though it is produced in a concrete plant, it is often sold by the ton like asphalt.

IS A PAVER REQUIRED TO PLACE ROLLER COMPACTED CONCRETE?

What makes roller compacted concrete unique is that it can be placed, graded, and compacted like conventional stone subbase material, yet perform like conventional concrete after it hardens. Because it is easily handled with conventional earth moving equipment, it allows excavation contractors to provide a paving option without the purchase of specialized equipment. Since the construction of the Willow Creek Dam in 1983, the placement of RCC with dozers and rollers has been the preferred construction method for concrete gravity dams in the United States.

WHY USE SYNTHETIC FIBERS WITH RCC?

Customers that like the speed, performance and cost savings of roller compacted concrete have inquired about its use in areas where welded wire mesh or increased "toughness" is required. In many applications, synthetic fibers can replace welded wire mesh. As with conventional concrete, fibers increase the "toughness" of the concrete slab. No changes are needed to produce RCC with synthetic fibers. Speed of placement and compaction is not affected, and the performance characteristics of the final concrete are greatly enhanced. Contact your local New Enterprise Stone & Lime representative for additional information on converting welded wire mesh to fibers in roller compacted concrete applications.

WHICH NESL PLANTS CAN PROVIDE RCC?

Roller compacted concrete is only produced at central mix plant locations where the material can be mixed onsite prior to discharge into a triaxial truck. NESL central mix plants are located at:

- ❖ Ashcom (Bedford area)
- ❖ Roaring Spring (Altoona area)
- ❖ Tyrone
- ❖ Chambersburg
- ❖ Shippensburg
- ❖ Denver (Lancaster area)
- ❖ Allentown
- ❖ Leesport (Reading area)

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