Innovative Pavement Technologies

NCDOT Division 7 Shoulder Construction
What is RCC?

RCC is a no-slump concrete that is compacted by a high density screed paver and vibratory rollers.

- Zero slump (very dry...less paste)
- Little to no forming-depends on application
- No reinforcing steel
- Limited finishing required
- Compacted with vibratory rollers
- High and Fast strength gain
- Resistant to freeze/thaw cycles and permeability
- Very dense
- Highly efficient installation methods
RCC is a Granular Solid

- Compressive strength ($f'_c$)
  - 4,000 to 10,000 psi
- Flexural strength (MR)
  - 500 to 1,000 psi
  - $MR = C(f'_c)^{1/2}$ where $C = 9$ (up to 11)
- Modulus of elasticity
  - 3,000,000 to 5,500,000 psi
  - $E = C_E(f'_c)^{1/2}$ where $C_E = 57,000$ (up to 67,000)
RCC is not new to North Carolina...
Where did RCC begin?
A Look at CCP vs Traditional RCC

Is there really anything to consider?
Five hundred years ago, everybody knew the earth was flat

“If you don't know where you're going, you might not get there.” -Yogi Berra
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

CONTRACT AND
CONTRACT BONDS
FOR CONTRACT NO. C203914

WBS

T.I.P. NO. 5129.3 1 NHPFM-0086638117

COUNTY OF
GUILFORD, RANDOLPH

THIS IS THE
ROADWAY & STRUCTURE CONTRACT

ROUTE NUMBER
1-85

LOCATION
1-85 FROM I-85 BUSINESS TO MAIN STREET IN ARCHDALE

LENGTH 2.400 MILES