ROLLER COMPACTED CONCRETE

CASE STUDIES / PHOTOS
ROBERT SMITH INC
CHATTANOOGA, TN
ADVANTAGES OF RCC

• **Cost**
  Materials, placement methods, speed and durability

• **Speed of construction**
  Higher strengths earlier then typical conventional concrete

• **Durability**
  Life cycle of conventional concrete > longer lasting then asphalt

• **Sustainability**
  Life cycle, heat island effect, lower lighting costs, emissions from raw materials

ALL THESE AdvANTAGES ARE IMPORTANT TO RSI CLIENTS. ONE OR MORE OF THESE REASONS WILL SALE RCC OVER ASPHALT
RCC PRICING VOLATILITY

Producer Price Indices - Competitive Building Materials

- Asphalt
- Steel
- Concrete
- Lumber

Years: 2005 to 2011

Indices: 80 to 240
• 17,000 Sq/Yds of drives/pavement to hold truck traffic in/out of 2 warehouses. Delivery trucks weighed 30-36k pounds

• Original design called for 5” of asphalt on stone base, but lower initial cost to do 5” of roller compacted concrete. (we were told RCC was 5-6% less)
  (Life cycle really cost made RCC an even better alternative)

• ABG 7820 High density paver (16-20 ft pulls) MAIN DRIVE 26 ft pull

• 2500 C/Yds placed in 6 days -- including rain delays in Sept 2011

• Concrete supplier: Irving Materials Inc. (IMI)

• Cement supplier: Lafarge
TYPICAL ROLLERS USED
JACK DANIELS (1) OF (2) WAREHOUSES
JACK DANIELS WAREHOUSE (2) OF (2)
CASE STUDY NOTES SHAW INDUSTRIES

• COMBINED TOTAL OF OVER 150,000 Sq/Ft (throughout 4 plants)

• DIFFERENT LOCATIONS WERE DESIGNED DIFFERENTLY
  Specs of 5.5” / 6” AND 8” WERE USED
  *(Based on truck traffic, axles, weight, daily repetitions, etc)*

• ABG 7820 High density paver (18-24 ft pulls)

• 6,000 TOTAL C/YDS PLACED

• Concrete supplier: Basic Ready Mix

• Cement supplier: Buzzi Unicem
SHAW INDUSTRIES -- 8 INCH LIFT – 16 FOOT WIDE PULLS
SHAW LOT AFTER INSTALL / PRIOR TO CURING & SAWING
LAYOUT FOR SAW CUTTING CONTROL JOINTS
RSI CUTS JOINTS TYPICALLY FROM 15-20 FT
SHAW RCC CORE
SPEC WAS CHANGED FROM 6” TO 5.5”
SAVED SHAW $20,000 (+)
CASE STUDY NOTES
DUPONT INDUSTRIES

• COMBINED TOTAL OF OVER 50,000 Sq/Ft (throughout 4 plants)

• DIFFERENT LOCATIONS WERE DESIGNED DIFFERENTLY
  SPEC OF SOIL STABILIZATION WITH 7” OF RCC USED
  (RE-ROUTED 90-100 DELIVERIES DAILY)

(21” OF RAIN IN 5 WEEKS – SOIL STABILIZING ALLOWED US TO FINISH A WEEK EARLY)

• 2,300 TOTAL C/YDS PLACED

• Concrete supplier: Sequatchie Concrete

• Cement supplier: Buzzi Unicem
DUPONT INDUSTRIES
RECLAMATION / SOIL STABILIZATION / 6” RCC INSTALL
SOIL STABILIZATION
TYPICALLY 12” DEEP AT 5% OR 8” DEEP AT 6%
RCC INSTALL AFTER SOIL STABILIZATION PROCESS
DUPONT FINISHED ROAD WITH EXTRUDED CURB
4 WEEKS AFTER INSTALL
RCC COMPARISONS

DUPONT RCC WITH 375/125 CEMENT / FLY ASH RATIO

SHAW RCC WITH 350/150 CEMENT / FLY ASH RATIO