RCC Pavement for Distribution Centers

Distribution/trucking facilities typically have large pavement areas in order to provide adequate container/freight storage. These pavements must have the capacity to carry heavy loads while still being economical on an initial cost basis and durable enough to limit long-term maintenance cost. Roller-Compacted Concrete (RCC) pavements are ideally suited to meet this challenge, providing a lower initial cost to concrete pavement while eliminating many of the common and costly problems traditionally associated with flexible pavements. RCC's attributes include:

- minimal long-term maintenance requirements
- withstands heavy concentrated loads
- high volume, high speed placement, no forms or finishing required
- expedited construction schedule
- eliminates rutting, particularly important in warm weather climates
- increases flexibility for future operations for both storage and vehicle use
- resists deterioration from fuel and hydraulic fluid spills
- immune to high and low temperature extremes
- high flexural strength
- rapid strength gain

RCC Growth and Geography

As the chart below illustrates, RCC has become an acceptable paving alternative and has been significantly growing over the last decade. RCC continues to be placed in a variety of applications and climates across the United States, Canada, and Mexico.

Figure 1 & 2 - RCC Market Usage and Geography

(Note: Chart and Map are not comprehensive, showing primarily larger projects. Figure 2 is courtesy of ACPA, RCC Explorer.)
Several distribution/trucking facilities have been paved with RCC across North America, including projects as far back as the late 1980’s. For additional projects please see www.rccpavementcouncil.org.

RCC Distribution Centers (Quick list)

- Lowes (Rome, GA & Pleasant View, TN)
- Walmart (Mebane, NC, Mobile, AL & Bentonville, AK)
- Celadon Trucking (Multiple Sites)
- Proctor and Gamble (PA)
- S&B Modular (Baytown, TX)
- Hibbetts (Calera, AL)
- Maritime-Ontario Freight Lines (CN)
- Honda Logistics Center (Lincoln, AL)
- Coca-Cola Bottling Facilities (GA, TN, AL)

LOWE’S DISTRIBUTION CENTER

PROJECT DETAILS:
Over 65,000 cu yd of 7” Roller-Compacted Concrete Pavement (RCC) for the new Lowe’s Distribution Center near Rome, GA. RCC was selected in lieu of asphalt by the owner based on pricing and performance expectations. The RCC was placed with 30 ft pavement lanes and control joints cut longitudinally and transversely at 15 ft. The joints were subsequently routed and sealed with Sikaflex polyurethane.

PORT 10 LOGISTICS CENTER

PROJECT DETAILS:
Port 10 Logistics center is a state-of-the art logistics center featuring multi-modal capabilities for truck, rail, ship, and barge served transport needs. The first phase consists of four buildings on a 100-acre site totaling 992,669 sf. When completed, the project will consist of eight buildings totaling more than 3 million sf on 256 acres and includes over 2 million sf of 7” and 9” RCC pavement.
KING PACKAGED MATERIALS COMPANY

PROJECT DETAILS:

For the state-of-the-art expansion of its production and shipping facility in Paris, Ontario, its decision-makers wanted a durable pavement. The existing yard was asphalt and highly fatigued from heavy equipment and truck traffic. Company officials were impressed with the longer life expectancy, reduced maintenance and lower overall life cycle cost associated with RCC. -10,800 sq m at 200 mm thick.

WALMART DISTRIBUTION CENTER

PROJECT DETAILS:

Building on success of a prior RCC Distribution Center, Walmart, again, chose RCC to save cost and time. Comprised of 106,000 cu yd of RCC: 372,000 sq yd of 10” RCC for access route and parking plus 9,000 sq yd of 5” RCC for an access road. Tractor trailer parking areas and drive isles were paved 30 to 32 ft wide. Crack control joints were sawed transversely at 15 ft spacing and along the center of each paving lane using early entry saws.

COCA COLA

PROJECT DETAILS:

Approx area of the project was 565,000 sf. The site was designed for a geo-fabric on sub-base, with a 12” lift of stone and a 9” lift of RCC on top of that. The design was used throughout the exterior truck lanes, warehouse dock areas, and in the truck staging / lay-down yard. Completed August of 2015. Coca Cola and Brasfield & Gorrie were pleased with placement of RCC chosen on an existing facility in Montgomery, AL.

HIBBETTS DISTRIBUTION CENTER

PROJECT DETAILS:

62,000 sq yd (12,000 cu yd) of 7” RCC mix. RCC was selected in lieu of asphalt by the owner based on pricing and long-term performance expectations. The RCC was placed at 30 ft pavement lanes with control joints cut both transverse and longitudinally at 15 ft. Completed June 2013.
Founded in 2014, the Council is an industry trade association representing the interest of those involved with the construction of RCC Pavement. RCC pavements were first constructed in the seventies, when the Canadian logging industry switched to environmentally cleaner, land-based log-sorting methods. The industry needed a low-cost, strong pavement to stand up to massive loads and specialized equipment for these large sorting yards (that can span 40 acres or more). Since, the market for RCC has grown significantly and the Council was formed to support further promotion and research towards establishing the highest industry standards.

Comprised of approximately 25+ member companies which includes but is not limited to: RCC contractors, equipment suppliers, materials suppliers, and engineers. Research and Promotion are primary objectives of the Members who strive to improve the quality of RCC pavements and expand their use in a responsible and sustainable manner. The Council Promotion Committee activities are designed to reach as many end users, including owners, designers, and specifiers, as possible. While the Council Research Committee is devoted to credible research focusing on providing answers and finding solutions for the most pressing questions about RCC pavements.

Additionally, the Council is an excellent resource to find qualified RCC Contractors, equipment, materials, and construction best practices expertise as well as resources and support to the design community. The Council collaborates closely with industry promotion and research partners including the American Concrete Pavement Association (ACPA), the Portland Cement Association (PCA), and the National Ready Mixed Concrete Association (NRMCA).

If you are interested in becoming a member, please contact:

Corey Zollinger - Chairman - coreyj.zollinger@cemex.com
Fares Abdo - Co-Chairman, Research Committee Chairman - fabdo@morgan-corp.com
Chris Carwie - Promotion Committee Chairman - ccarwie@agpeltz.com

www.rccpavementcouncil.org