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M&M Cartage of Louisville, Kentucky Chooses Roller-Compacted Concrete for its "Green" Heavy Truck Facility

1 RCC placement

2 Sawing control joints

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Kemper Construction of Carrolton, Kentucky, recently completed 11 acres of roller-compacted concrete (RCC) for M&M Cartage of Louisville. M&M Cartage has a fleet of trucks each of which can weigh up to 80,000 pounds loaded. In addition to the strength requirement for these loads, M&M Cartage also wanted surface durability for turning and punch loads of parked semis. Roller-compacted concrete provided a surface strong enough to carry that heavy load on "swampy" south Louisville soils.

Kemper Construction, a member of the Kentucky Chapter of the American Concrete Pavement Association, used their high-density Roadtec paver to complete the job. This paver compacts the low-slump RCC mix to about 98 percent compaction.

While requiring a heavy truck parking area with low maintenance that would last a long time, M&M, a progressive company committed to "Green Initiatives," also had the environment in mind. Roller-compacted concrete addressed this in several ways.

Paul Kemper said, "RCC is a rigid pavement much more durable and longer lasting than HMA pavement of the same depth. Also, it is a light colored pavement that is environmentally friendly, especially in urban areas.

Concrete contains no VOCs and therefore does not emit toxins. It does not require a surface sealer, and the surface temperature of concrete reduces the urban heat island effect."

President Don Hayden said, "We are very pleased with this project. One GREEN example is that we utilized LED lighting on this truck lot. Also, with this lot we opened our first compressed natural gas facility."

Limiting the urban island heat effect is especially important in Louisville. Studies by Georgia Institute of Technology recently showed that Louisville is the fastest growing urban heat island in the United States, beating Phoenix and Atlanta in urban heat island increase during the last decade. Louisville also ranked highest among 50 of the country's largest metropolitan areas in temperature increase, according to the study by Brian Stone, a professor of City and Regional Planning at Georgia Institute of Technology.

Kemper Construction started the RCC project in late 2014 and required some cold weather curing. Thin-cut jointing was done with early entry saws, and the end product is very smooth.

RCC has been widely used in heavy duty paving applications in ports and intermodal facilities across the nation, particularly in the Southeast, and now is really gaining a foothold in Kentucky. Heavy trucking facilities, such as M&M Cartage, are ideal applications for RCC because of its strength, surface durability, low maintenance and very competitive initial costs. If owners consider life-cycle costs, RCC really shines.