RCC was selected for a large parking lot because of its durability and competitive cost.
can be used effectively for laying bituminous materials, cement-treated base, aggregates, railway track ballast, and RCC.

On this project the pavers first laid down a 4-inch-thick base of custom-blended 1-inch-minus aggregate supplied by a local quarry. The subbase was of good quality and required no stabilization procedures. Laying the base with the pavers enabled the contractor to bring the base to grade with a deviation of less than \( \frac{3}{8} \) inch per 10 running feet. This precision base installation eliminated a road grader that conventionally is used for the fine grading. Noteworthy is that each paver is fitted with high-density screeds featuring dual tampers that, according to Gray, brought the base to 95% compaction before rolling. Dynapac vibratory rollers then brought the base compaction to 100% of that specified. Generally, one pass was sufficient. Gray points out that more conventional methods of laying the base, such as using a Jersey Box or end-dump trucks, would have required not only a motor grader but two or more additional passes of the compactor (instead of one) for bringing the compaction up to specification.

With the base in place, the same Titan pavers were used to lay the RCC. There are two RCC thicknesses specified: 7 inches in anticipated truck traffic areas and 5 inches in areas where the traffic is restricted to passenger vehicles. The surface-flatness tolerance is tight, with an allowable surface deviation of no more than \( \frac{3}{8} \) inch per 10 lineal feet. This flatness results in a pavement with deviations that are unnoticeable by a motorist at the maximum allowable traffic speed of 25 mph. The pavers were able to lay the RCC and compact it to 95%. Rolling immediately followed, and
since RCC has zero slump, the final mat thickness after compaction and curing was only about 1/4 inch less than it was before rolling, according to Gray.

As the RCC was laid, an ABG Puma combo-roller made the first compaction pass. This compactor has one front drum roller and four rear pneumatic-tired wheels. By operating the compactor in reverse, the four forward-directed wheels caused the paving to traverse slightly toward the mat’s center, creating a moderately elevated longitudinal crown. The drum roller then flattened the crown that was created by the four forward-rolling wheels. The compactor’s drum is laminated with a proprietary compound rubber overlay, which serves as a release agent and prevents any RCC from sticking to the roller. The final cleanup compacting was done with a vibratory compactor. Usually one pass was sufficient. Gray says that this compactor pass resulted in a smooth, practically seamless longitudinal joint.

**Production, economics, and benefits**

Gray says that the production was quite good. “A paving team, including one paver and two compactors laid and compacted 1500 cubic yards in an 8-hour day. This is based on the wide-screed paver advancing 15 feet a minute. We are pleased with these production results,” he says. He finds that RCC paving costs about 20% less than conventional concrete paving and is equivalent in cost to a heavy-duty asphalt pavement.

But, Gray points out, an RCC pavement has greater longevity than an asphalt pavement. He points to the Saturn automobile manufacturing plant in Spring Hill, Tenn., that has a big 10-year-old RCC paved parking lot. In a conversation with the Saturn plant maintenance people, Gray learned that only light maintenance has ever been required.

There are other advantages to RCC, according to Ron Hawbaker, an engineer with the American Concrete Pave ment Association. Recently ACPA funded a study at the University of North Carolina on the light reflectability of an RCC pavement vs. an asphalt pavement. The result—in favor of the RCC pavement—was a 30% light-reflection increase. “What this means,” says Hawbaker, “is that there is less artificial light...
required in a parking area for the same visibility. That means less energy costs to light the parking area and still maintain a safe walking environment at night.”

Gray is enthusiastic about RCC and soil cement. He explains, “We specifically go after the potential RCC and soil cement markets. We feel that for pavements requiring high strength and durability to accommodate heavy-vehicle traffic, RCC is the best choice in most instances. The installation cost is competitive, and there are other advantages. With professionally trained people in the company we can offer a complete RCC design service and paving installation to the customer. This is a primary reason why we are one of the biggest RCC contractors in the South.”

Rodney Garrett of Bernville, Pa., is a freelance writer.

For more information on Ingersoll-Rand and ABG Titan pavers, call 908-238-5800, visit them on the Web at www.ingersoll-rand.com, or circle 8 on the reader service card.

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**Peltz promotes RCC**

Will Gray of A.G. Peltz says that the Titan paver is pivotal in getting high-quality paving results at the least cost. “I do not endorse products because I frankly am not loyal to any equipment manufacturer. I am, however, loyal to my company and will choose only the most cost-effective equipment I can find. By using these pavers, we have eliminated the need for motor graders. Just as important, these pavers reduce the number of roller passes needed to bring the RCC to the compaction specification.”

The company also owns a transfer buggy that is used with the paver when high-speed ride smoothness of the pavement is important. The use of the transfer buggy means that the paver is continuously laying the mat, which is not possible if end-dump trucks feed the paver. By not having to stop the paver, rideability is increased, although this is generally important only for roads where traffic flows at much higher speeds than in parking lots.

Gray says his company is currently promoting RCC throughout the southern tier of the United States. While some government agency projects do specify RCC, Peltz gets 85% of its revenues from the private sector.