

PAVINGtheWAY

A PUBLICATION OF THE PLANTMIX ASPHALT INDUSTRY OF KENTUCKY AND THE KENTUCKY ASPHALT PAVEMENT ALLIANCE

The Stress Test

Not many pavements in Kentucky feel more stress than the hot mix asphalt at the Gallatin Steel Coil Yard storage facility in Ghent, Ky. The facility produces and handles 240 steel coils per day, weighing up to 20 tons each. Eighty thousand pound, rubber-tired forklifts load the coils onto rail cars, barges and tractor-trailers for distribution across the country.

Prior to 2001, the coil yard surface was unpaved, causing a constant maintenance headache and safety concern. The owners of the storage facility knew that they needed to address the problem. So they teamed up with Ohio Valley Asphalt, LLC (OVA) in Carrollton, Ky., to design a hot mix pavement to satisfy their needs.



Asphalt passes the test, successfully handling the heavy loads.

OVA and Ellis Williams, P.E., a local consultant, worked to design a pavement with the desired thickness and mixture properties to withstand these heavy loads, keeping in mind that the forklifts often took tight turns. During construction, it was important to maintain operation of the coil yard. Therefore, phasing and sequencing production and construction activities were critical with this project.

In the final analysis, the plan was to undercut the driving lanes by 12 inches and replace it with hot mix asphalt. This would maintain existing surface grades and drainage considerations. The hot mix asphalt was placed and compacted in four lifts utilizing an asphalt-rich bottom layer and polymer modified (stiffer) liquid binders. These "big-stone" mixes, which are extremely conducive to heavy loads, rely on stone-to-stone contact.

"This high-strength pavement has met everyone's expectations thus far, giving the owner improved operating conditions and reduced maintenance

costs in the coil steel yard," said Owen S. Yocum, vice-president of OVA.

Work on the project began in October 2001 with additional phases constructed a year later. Paving operations went according to plan, and the facility could use the new surface immediately. The pavement conditions have been monitored and the performance has been excellent – even in the hot summer months.

This project demonstrates that – even under the toughest physical conditions – hot mix asphalt pavements are durable and perform well under heavy loads.

Kentucky Does More with Less

Kentucky ranks among the top 10 states in money management for roads. Kentucky gets more out of its limited highway budget than most states.

2001 overall cost-effectiveness

1-North Dakota	6-Nevada
2-Wyoming	7-Oregon
3-South Carolina	8-Montana
4-Georgia	9-Kentucky
5-Idaho	10-Alabama

Source: Study of the performance of the state-owned roads from 1984 to 2001 conducted by Prof. David T. Hartgen at the University of North Carolina at Charlotte.

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New and Improved Includes Asphalt

It was a spectacular site at Ft. Campbell as four paving machines marched side-by-side – much like a military unit in close order drill. These pavers, from the Rogers Group, Inc., worked to rehabilitate the Ft. Campbell Keyhole Hardstand Area. Ft. Campbell serves as home base for the U.S. Army's 101st Airborne Division, which was among the first units to be deployed to the Gulf Region for the war in Iraq.



Rogers Group paving part of the runway at Ft. Campbell Keyhole Hardstand Area

Originally built during World War II, the Keyhole Hardstand Area was in dire need of rehabilitation. This parking area was no longer able to accommodate the larger and heavier aircraft of today.

Working with the prime contractor, Lane Construction, four large concrete segments, which were in the shape of an old-fashioned keyhole, were removed and replaced with a single concrete hardstand that included an asphalt shoulder.

The asphalt shoulder required paving under strict specifications. Densities had to be met on these joints, and any joint that dropped below 170 degrees had to be removed. Because of these specifications, four pavers were needed.

"Using two pavers couldn't have kept a joint hot," said Gary Johnson, area construction manager. "We decided to use four pavers to ensure the temperature requirements were met."

Rehabilitation of the Ft. Campbell aircraft parking area required 2,600 tons of asphalt but took only seven hours to complete. Twenty-two trucks provided a steady flow of material for the job. It was no easy task, but Rogers Group rose to the task and the project was a complete success.

Not only was this an interesting asphalt paving project, but it helped provide a more up-to-date facility for our army's 101st Airborne Division.

Rogers Group, Inc. is a growing, 95-year-old company that provides crushed stone, sand, gravel and asphalt. Their services include highway construction, concrete masonry and construction materials recycling. The company employs 1,900 in five states.

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PAIKY Announces Awards for Contractors and KYTC

The Kentucky Transportation Cabinet (KYTC) and area asphalt contractors are being recognized on the national level.

"The Kentucky Transportation Cabinet and area asphalt contractors do a good job of creating safe, durable, smooth and quiet highways," said Dean Blake, executive director of PAIKY. "Being recognized nationally reinforces their success."

"NAPA selects the award recipients using a known set of standards that have been shown to give good results," said David B. Carlson, chairman of the NAPA Board of Directors.

"This award demonstrates the high quality of work that the hot mix asphalt industry is achieving."

The following five Kentucky asphalt projects received the 2002 National Asphalt Pavement Association (NAPA) Quality in Construction Award:

- Central Kentucky Asphalt of Lexington for excellence for widening and rehabilitating a 4.1-mile section of I-64 in Lexington;
- Hinkle Contracting Corp. of Paris for excellence in construction of the Lexington-Paris Road (Paris Pike);
- Mountain Enterprises, Inc. based in Lexington for excellence in rehabilitating three miles of US 23 in Boyd County, using an innovative mix designed for high traffic areas;
- Walker Company of Kentucky Inc. of Mt. Sterling for excellence in work on more than 10 miles of I-64 in Montgomery and Bath counties; and
- Gohmann Asphalt & Construction Inc. of Clarksville, Ind., for excellence in major reconstruction of a three-mile section of I-64 in Jefferson County. For this project, they were also presented the 2002 Making a Difference Award from the National Partnership for Highway Quality (NPHQ).

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2002 AWARD WINNERS

The following five Kentucky asphalt contractors received the 2002 National Asphalt Pavement Association (NAPA) Quality in Construction Award:

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- Hinkle Contracting Corp. of Paris;
- Mountain Enterprises, Inc. of Lexington;
- Walker Company of Kentucky Inc. of Mt. Sterling; and
- Gohmann Asphalt & Construction Inc. of Clarksville, Ind.

Smooth Sailing!

Asphalt was flying at the regional meeting of the American Society of Civil Engineers (ASCE) student chapters. At this year's meeting, civil engineering students were charged with the task of designing, testing and launching asphalt specimens. The University of Kentucky team took top honors in the contest.

"The students had a great time and learned something about asphalt in the process," said Dr. Kamyar Mahboub, civil engineering professor at the University of Kentucky and contest judge. "That's what these competitions are all about."

The contest's concept was to fabricate a hot mix asphalt sample, similar to a clay pigeon, which could

be thrown from a trap and accurately fly a maximum distance. Since strength and durability are key in any asphalt mix design, the sample underwent laboratory strength testing and had to be tough enough to withstand the physical impact.

Representatives from the University of Kentucky, Plantmix Asphalt Industry of Kentucky (PAIKY) and the Asphalt Institute worked together to develop the contest rules, judge the competition and perform the laboratory testing of strength specimens.

"We hope this competition will grow over the years and attract more participation from within the region – and across the country," said Brian K.



Wood, P.E., assistant director of PAIKY. "This was the first year for this type of contest, and it indeed proved successful."

Participation was limited, but nearly 40 people were in attendance for the actual competition. The meeting, hosted by the University of Kentucky, was held on April 4 at Jacobson's Park in Lexington, Ky.

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