

# Dixie



## CONTRACTOR

**Dykes Paving demonstrates  
the possibilities of recycling**

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DeKalb County personnel resurface New Peachtree Road in Doraville using recycled asphalt that was milled from this site one week before by Dykes Paving Co. crews.

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By Rusty Paul

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## Dykes Paving Co. believes in recycled asphalt

Norcross, Ga.—What do you say about a paving contractor who paves two streets at no charge to the government units who own them, plus a private parking lot, and invites not only potential customers to witness all his corporate secrets, but most of his major competitors as well?

Some folks might call him crazy, but most people who know Jim Dykes of Dykes Paving Co. know him as a "supersalesman" and the product he is selling nowadays is asphalt recycling.

When Jim Dykes read an article published in *Dixie Contractor* during February on why asphalt recycling hasn't as yet caught on in the Southeast, it captured his rabid attention. Asphalt recycling has been a consuming subject for Jim Dykes during more than six years now.

That's because there is one thing Jim Dykes believes: Asphalt recycling on a regular basis is a coming trend.

Dykes so believes in recycling that he has gambled roughly \$300,000 and 2½ years time in gearing up for the recycling market when it hits.

Dykes recently contacted both the Georgia Department of Transportation and the government of DeKalb County, Ga., in suburban Atlanta, offering two experimental projects in recycling. There would be no charge, but DOT would have to furnish its material as well as test, engineer and handle mix design.

For that, Dykes Paving would run 200 tons of 50 percent recycled/50 percent virgin asphalt for placement on a DOT project on the Northeast Expressway Access Road near here and on New Peachtree Road in the city of Doraville in DeKalb.

"I approached the state last November about scheduling a recycling job this winter during our slack period. But that was hard to do due to the weather," Dykes says. "We finally set a date, and in the meantime our new milling machine arrived, so I contacted DeKalb County about a recycling project that would incorporate our machine.

"We agreed to furnish our milling machine to plane and repave an approximately 1,500-ft. section of New Peachtree Road in

Doraville to correct a drainage problem." That gave the company two projects for its demonstration. After inventorying its stockpile of old asphalt, it discovered enough for one more project, so a parking lot at a recreational facility near Stone Mountain was added.

"Our primary objective was definitely not to promote Dykes Paving, but to promote recycling," Jim Dykes said. "I really feel that strong about it."

Actually, Dykes has been toying with asphalt recycling for more than six years. "I would go back into the shop during slack periods, take broken asphalt and heat it up on the stove in regular cooking pots," Dykes said.

"The stuff turned out pretty well, so I decided we needed some kind of production model. After all, we couldn't continue cooking this stuff on a stove if we were to expect anything worthwhile to happen."

Next, Dykes tried tossing chunks of asphalt into small, portable concrete mixers and heating it with propane torches. "We tried adding various amounts of liquid asphalt

and we also tried rejuvenating agents," the contractor said. "This was five or six years ago and it worked. We used it in potholes and it worked as good as virgin material."

Then, he put the idea on the "back burner." "We didn't have an asphalt plant at the time and that's what makes it feasible - not a little portable concrete mixer."

"But 2½ years ago, I decided to get an asphalt plant," Dykes continued. "I checked with every manufacturer for eight to nine months before I decided on an asphalt plant, and one of my main considerations was its recycling capabilities."

After an extensive investigation into various plants on the market, Dykes decided on a 100 tph Boeing drum mix plant. "It was simply a matter of choice - not that other plants were not capable of doing recycling," Dykes said.

He bought the plant without its recycling package, however. "Installing a recycling package was only a two- or three-hour project which could be done once the company began stockpiling used asphalt."

With the asphalt plant in place and operating, Jim Dykes began experimenting with recycling in earnest. "We knew the thing would work," Dykes said. "Even the small plant without a recycling package wasn't putting out any blue smoke when using up to 20 percent recycling material in our mixes. But we were using large chunks of asphalt

**The recycled asphalt as it is dumped into the hopper of the Blaw-Knox paver.**



of about 1½-in. in size which were obtained from our commercial patching operation," Dykes said.

"We ran the smaller plant for 10½ months, putting about 110,000 tons of mix through it, only about 200 tons of which were recycled material," the contractor said. "We wanted a larger size drum, so in September 1980 we added a 300 tph drum."

This plant had full recycling capabilities and was equipped with Boeing's "Pyrocone" heat diffusion shield that shortened the length of the flame going into the drum. This limited flame contact with the fines to reduce smoke.

From September until about the first of the year, Dykes' new plant operated full tilt, so there was little time to consider recycling. "In

**Dykes Paving wanted a front-discharge planer to permit the operator to steer the machine and watch the discharge boom simultaneously. This will help reduce cleanup costs during milling, Jim Dykes believes.**



November, however, I approached Georgia Department of Transportation with my proposition."

In the meantime, Dykes' new milling machine arrived.

The search for the right milling machine had also taken some time, Dykes says. "We did a commercial milling job at an office park near Atlanta just to find out what kind of milling machine best suited the company's needs."

**The Roconeco planer at work along the Northeast Expressway Access Road near Norcross.**

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Early in the search the company decided a front discharge planer was its best choice. The reason?

"The operator can't look forward and backward at the same time," Dykes said. "This is particularly a problem in curves where the operator has to control the side shift of his boom and hold the machine on course."

In watching some of the rear discharge machines, Dykes noticed that spillage was a problem, "particularly in curves," which added cleanup operations to the project's cost.

"I talked with a contractor who was milling some streets near Waikiki Beach in Hawaii when I was at the NAPA (National Asphalt Pavement Association) convention, and he said 58 percent of his cost in milling was cleanup. That was too high — way too high!"

When Dykes settled on a front discharge planer, his choices narrowed considerably. His purchase was a Roconeco planer.

Dykes actually donated two days of his company time, plus many more of his own in setting up the demonstration. The milling machine went out to the Doraville site to mill on Friday, Feb. 20.

The milling operation, also viewed by county, state and city officials, moved flawlessly.

The day for resurfacing was set for Thursday, Feb. 26. Asphalt began moving through the plant in a blend of 24 percent 8/10 screenings, 26 percent No. 7 stone, 3.5 percent AC 20 and the rest recy-

clad material.

"What we wanted to do was stage a real life demonstration," Dykes said. "If there were problems, we wanted the people to see them and know what they were." And there were a few problems.

"The number one problem was the extremely high fine content of the material run through the plant. There were two types of material to be recycled: One was an older material with fewer volatiles in it; the other material, which was milled in Doraville, had a high fine content.

"The older material produced about 50 percent less smoke."

Watching the project were some of Dykes' competitors, plus city, county, state and Federal Highway Administration engineers.

With one exception — Georgia DOT — the reactions were all positive, Dykes said.

"The purpose was to get some experimental project under way," Dykes said. "If we don't put it out today, how are we going to know how it will react in a year's time?"

"The material's stability tested out at about 3,100 psi, Dykes said, compared to about a 2,500 psi stability for virgin mix. Does that mean it will last longer?"

"Not necessarily," Dykes admits. "We will have to let it sit out there about a year, run some more tests and then we will find out more. But we do know it looked good, felt good, but we still don't know how it will react with time."

Yet Jim Dykes remains confident the recycled material will pass the

**Dykes Paving's Boeing drum mix asphalt plant in operation during the recycling demonstration.**

tests and that with the passage of time there will be no significant difference between the virgin strip and the recycled strip that were placed side by side on the DOT project.

"I feel real good about the project," Dykes said. "It has proven Georgia can recycle just like other states have been doing for years."

How does Dykes think his competitors who viewed the demonstration will react? "Of the people who were out there and saw the experiment, the ones who will still be in business 10, 15 or 20 years from now are the ones who are receptive to this kind of change — not necessarily recycling, but for the change in the industry.

"If our industry doesn't gear up for the change, then we will be like the General Motors and the Chryslers of today who said in the early '70s there was no market for small cars, but today are saying 'federal government, keep these imports off my back until I have a chance to retool for small cars.'"

Thus, Jim Dykes is fully aware that despite his roughly \$300,000 investment in the recycling market, he will not see any overnight return. "We're gearing up for the long haul," Dykes said. "We know the thing will work and we know that some day it's coming — we don't know exactly when."

"Our plan was that we would buy recycling equipment because recycling eventually is going to come. We set aside money so that if we had to buy the stuff and let it sit for two years just making payments on it, when the market did come we would be in position to take advantage of it."

According to Jim Dykes' estimates, if a free source of recyclable material is available, "you can get a good quality material at a savings of roughly \$1.00 per ton for every ten percent of recycled material used in the mix."

Thus, a 50/50 recycled-virgin mix would yield approximately a \$5.00-per-ton saving over 100 percent virgin material. With that potential cost advantage, no wonder Jim Dykes is gearing up for the long haul.