A CUSHY DRIVE FOR CHICAGO

SOUTHWIND RAS HELPS WASTE SHINGLES FIND A NEW LIFE

Kawasaki loaders move mountains of ground shingles at multiple locations.

This is a story about how government, private entrepreneurship, and an obvious waste that clogs landfills came into harmony.

If you live in the Chicago area, you know how the heavy traffic, absurd weather swings, and snow/rain/ice (thanks to Lake Michigan) play havoc with the roads.

One sweet spot in the traffic flow is the Illinois Toll Way. The collected tolls are earmarked for toll road maintenance. It's a challenging job with the roads under nearly constant rebuilding and resurfacing. Drivers appreciate the improved results, but dread the constant annoyance.

BACK STORY

In 2009, the Illinois Toll Way, ISHTA, started experimenting with RAS, which stands for recycled asphalt shingles, along with GTR, which stands for ground tire rubber.

Of course, the other recycled product already in use for years is FRAP — fractionalized recycled asphalt pavement. FRAP is well established and considered the norm. RAS and GTR needed to prove themselves.

"There are clear savings from using RAS over liquid asphalt and many contractors and asphalt plants were eager to expand their use of it," says Carmen LaPorte, Corporate Operations Manager for Southwind RAS. "But, for government funded projects, you've got to have government buy-in and follow-up guidance."

Recycling asphalt shingles and even rubber tires has been around for the last decade or so. But finding a quality and quantifiable standard that would hold up to the rigors of a heavily traveled highway was another matter. So based on updated recycling initiatives, ISHTA and other DOT agencies worked as a group to set specifications to the logical suppliers of asphalt paving for productive solutions, asking them to step up to the challenge and provide an asphalt blend that incorporated as many renewed resources as possible.

SOUTHWIND HIT IT!

"Although the government was eager to promote more recycled product in their mix, consistency was becoming a big concern," says Dave Stanczak, Vice President of Sales, Southwind RAS LLC. "And we saw an opportunity to provide the answer, if our management would make the investment to explore solutions that create a consistent, easy-blend product.

"Controlling the correct asphalt binder content by nailing the proper blend ratios is the critical key, and that's what we're all about. What we make is an excellent blend of ground asphalt shingles to meet the specific criteria required when it comes to oil content. You see, not all shingles have the same amount of oil content."

And that's the problem with multiple recycling efforts in a nutshell. How do you get a product made from waste to a product that is equal to a virgin input?

The answer was finer grinding. "We saw the IDOT people as our friends, and we worked hard to come up with a solution for making our RAS mix consistent, batch after batch. And we found it wasn't only moving to a 3/8th crumble, but it was also the gradation of the mix.

"So we created a mix that works — a product developed from extensive testing and careful mixing that meets specific oil and gradation compositions. We test about every 250 tons of product, and it is clear that our finished blend works as an excellent additive to the overall asphalt pavement blend."

Southwind has worked with multiple government agencies to develop a blend that is acceptable to all.

Left to right: Hank Ottman, KCMA Regional Sales Manager; Derrick Kloc, Reliable Materials, Safety Director; Alan Johnson, Howell Tractor, Area Manager; Jerry Treder, Reliable Materials, Lyons Plant Manager; Carmen LaPorte, Southwind RAS, Corporate Operations Manager; Gary Hammond, Howell Tractor, Service Manager.

TIER 3 OR BETTER PERFORMANCE

The Cummins EGR System with its exclusive compact catalyst provides a simple, flow-through method of removing particulate matter while providing operational characteristics that match or improve past Tier 3 engine performance. No regeneration. No downtime. No ash cleaning. No DPF.

The total system, with a variable geometry turbocharger that controls the EGR flow, actually boosts response at all speeds. The electronic control module provides 3X faster processing and 2X more memory for seamless control. The highly efficient, cooled, EGR removes a high % of PM at the source so there is less for the catalyst to remove. Fuel economy is improved 5%.

"We blend most of our RAS with FRAP. It starts with the RAP (recycled asphalt pavement) that is already accepted as recycled material. Then we crush it down to a 1/4-inch minus material. We then blend it with our asphalt material, which again, went from asphalt shingle to a ground 5/8th material, then through our Trommel Screen to a 3/8th minus material — all to provide a consistently oily additive that easily blends with the virgin aggregate and other paving ingredients."

As stated earlier, the critical thing is that asphalt shingles vary in oil content. So the blend that Southwind RAS sells is constantly adjusted in order to deliver a consistent product.

HOW THE LOADERS FIT IN

At each Southwind RAS facility, wheel loaders get the material to the grinder for their first round and to the Trommel Screen for their second round of sizing. They then load the final blend into trucks for final delivery.

"First thing about the Kawasaki loaders is that they appear simple to operate," says Jerry Treder, Lyons Plant Manager. "You start the day looking over the machine, lube it, make sure it has fuel, and simply go. We've had a very good experience with the Kawasaki loaders.

"Our operators like the cabs. Different operators have preferences because all manufacturers, while the loader performs basically the same task, have different computers, different seats, and different controls. The operators like Kawasaki because it is more simple to operate. It has an old-school feel. And that's not to say it's not computerized, because it is. I guess the programming is just very intuitive.

"We also use another brand of loaders, but it's with Kawasaki that we're experiencing our first Tier 4, and we're watching it carefully. We are concerned about the regen system and how the Tier 4 engines will perform, but so far, we haven't had any problems with our 70Z7s," says Treder.

And they shouldn't need to be concerned. The Cummins QSB6.7 engine in their Kawasaki 70Z7 features EGR (Exhaust Gas Recirculation) technology that reduces nitrogen oxide and carbon emissions by burning the material in the engine. This means no regen as in competitive Tier 4 approaches and also eliminates the use of DPF.

Southwind RAS is served by Howell Equipment Company, Elk Grove Village, Illinois.

Southwest RAS has multiple locations where Kawasaki loaders assist in unloading the shingles, then charge the hoppers for grinding.