

PRODUCT & EQUIPMENT MARKET

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A GREENER DISCOVERY

Accidental finding could enhance paving industry



Some of the best discoveries are unintended. Take the vulcanization of rubber. Mr. Good-year, in trying to make rubber more useful, accidentally spilled a mix of rubber and sulfur. The resulting mistake had made rubber harder, more durable and less sticky.

Bill Bailey and Ian Cousins, the owners of Billian International Inc., had a similar revelation with the next phase of ground-tire-rubber (GTR) asphalt pavements.

“We stumbled onto this by accidentally flipping the ratios of binder to lime while making EZ-lime pellets,” Bailey said. EZ-lime is a hydrated lime pellet bound with asphalt oil (bitumen) to eliminate handling problems and dust. Paving Pellets were born when the binder-to-lime ratio flipped one day during manufacture by a mistake in the binder feed. The resulting asphalt pellets consisted of 80% high-quality bitumen and 20% hydrated lime, which equals 1% by total weight of the mix. The pellets were cool.

By coincidence, that is the standard antistrip percentage of addition to the hot mix. If they used a reacted 80% oil with 20% GTR bitumen and made pellets with the 20% lime, ground-tire-rubber binder was produced without the hassles or high mobilization costs.

The problem was the current AR process was wasteful and too expensive. Mobilization costs, large specialty equipment that needed to be on each jobsite and the

reacting of the rubber and bitumen at high temperatures limited production. It made some projects—especially smaller ones of 3,000 tons or less—cost prohibitive.

However, if the GTR was mixed and pre-reacted at elevated temperatures according to specs, then the asphalt-rubber bitumen can be pelleted, using the same hydrated lime 28 states mandate for antistrip of the pavements.

Now paving companies can just take the GTR Paving Pellets and add them in the RAP collar or directly into the pug mill as done successfully in Tucson at the Granite Construction plant with the EZ-lime pellets last year. Adding the GTR pellets at the RAP feeder makes the right blend for the 20% Arizona GTR blend.

Cousins explained, “GTR Paving Pellets are actually greener than the early generation ground-tire-rubber asphalt because they eliminate the release of VOCs [volatile organic compounds] during storage and transport. Also spills and burns are not a problem; this is a win-win for the agencies.”

—Contributed by Bill Bailey, Billian International Inc.