# Paver's Pugmill Performance is the Key to Bringing Home the Bonus

An efficient on-site continuous flow operation and higher production capacities were the immediate benefits for Wichita, Kansas-based Wittwer Paving as they began producing cement-treated base with a portable pugmill rather than via a central mix concrete batch plant.

In fact, the concrete paver's Kolberg Model 52S Portable Pugmill was a key player in a recent bonus-netting project. Wittwer Paving received a $350,000 bonus for its accelerated concrete paving project, spanning six miles and four lanes, on Kansas State Highway 15 - a $19 million contract with a tight time frame.

*The self-contained Model 52S is easily moved from job to job on a single load.*

"The job was complex in terms of the number of bridges and the amount of traffic that had to be worked around," says Wittwer Paving President David Wittwer. "We could always locate the pugmill near to the area being paved, as well as move it in and out of the job as needed."

When the newly-formed Wittwer Paving set up shop in 1992, cement-treated base was entirely produced at its central base operation. However, it didn't take long to discover that big jobs and big bonuses stem from flexible production strategies. "We needed to increase production at our base operation," says Wittwer, "plus, we needed on-site flexibility - on-site production of cement-treated base and concrete - and a continuous flow operation."

Due to its ease-of-portability (it's self-contained on one load), the Kolberg Model 52S Pugmill, manufactured by Yankton, South Dakota-based Kolberg-Pioneer, Inc., produces cement-treated base or cement-treated fly ash on site for all Wittwer's paving jobs. Often it's scheduled to produce base for the main line of a highway, then is moved to another project before returning to produce base for the shoulder portion of the first project. On any given day, production output may average from 2500 to 3000 tons at up to 300 to 500 TPH.

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"The Kolberg pugmill works well in multiple applications and in dense or open-graded bases," says Wittwer. "It's designed to handle drier materials at higher capacities while maintaining the quality of the mix."

"Before using the pugmill, we were producing base with a double drum concrete batch plant," says Wittwer. He stresses the disadvantages of that method: "In a concrete batch plant, you get a lot of buildup in the drum when mixing drier materials and that means that at some point, you're going to have to get in there and jackhammer all that out. Also, in a concrete batch plant, you're mixing an 8- to 12-yard batch at a time. With a pugmill, you have continuous flow."

*"With the computerization we can calibrate the pugmill and certify it."*

Wittwer explains that the Kolberg Model 52S Pugmill comes standard with 13 and 11 cu. yd.

feed hoppers, plus 36" wide variable-speed belt feeders, a 36" wide belt conveyor and a full 4' x 8' pugmill mixing chamber. For an optimum mix, the mixing chamber features high retention time, timed dual logs, and 40 paddle tips, versus conventional pugmills with only 32. Wittwer comments that the 40 paddle tips are adjustable, reversible and easy to replace. "That means we get a better mix while lowering our wear costs," he says.

"As the pugmill is continuously mixing, we have a hopper at the discharge end of the mixing chamber that will hold up to 5 tons of material," says Wittwer. "So if one truck pulls away, the next truck can immediately load from the hopper."

He adds that the pugmill is charged with two loaders, one for sand and one for aggregate. "We're using two different types of aggregate - a coarse aggregate and a crushed stone," he remarks.

*The Kolberg Model 52S features a continuous flow mix and the ability to vary retention time to meet changing job requirements.*

Wittwer Paving specified the Kolberg Pugmill with customized fully-programmable computerized controls, computerized belt scales and a drive-powered flow meter to meter the cement or fly ash. Wittwer explains that the flow meters coupled with the computerized belt scales makes the unit unique. "We wanted a system that would adjust itself automatically, or "on-the-fly," according to what material was flowing through it," he says. "We can also program it to mix a 25- to 28-ton load, shut down as the truck comes in, then mix another load of the same tonnage."

"With the computerization, we can calibrate the pugmill and certify it," says Wittwer, "and the belt scales give us an instantaneous reading. We don't have to weigh each individual load. On certain conventional pugmills, you have to weigh every load."

Today, with the need to expedite road projects, equipment such as the portable pugmill is one important link toward that goal. "The industry is changing," remarks Wittwer. "There's a trend toward awarding more (design and build) projects with extended warranties. In other words, we're asked to handle the entire road project from design through maintenance on one contract. That demands accelerated schedules, high-quality, high-capacity production and the equipment and manpower to get the job done."