



# POLYMER BLENDING FOR CHINA STREETS

Many of the major streets in Beijing will soon be as well-structured and durable as Pingan Da Dao (above), with the help of equipment from Chattanooga, Tennessee

**IT'S A VERY LONG PATH** that stretches from Chattanooga, Tennessee to Beijing, China: about 10,000 straight-line miles on a global map—but much longer when the path is traced on water by an ocean-going cargo vessel.

But when the Beijing Bituminous Concrete Factory, a government-owned contracting company in the People's Republic of China, wanted a self-contained, turnkey installation for an asphalt polymer blending system... Well, they just naturally turned their attention to Heatec in Chattanooga.

"The Chinese want to improve their roads and streets," said Tom Wilkey, sales manager for Heatec. "They are very excited about what is happening in the U.S. with the new developments in hot-mix asphalt (HMA). They want to be able to modify their asphalt so it will perform better in both hot and cold environmental conditions.

"So after looking around the world for a polymer-blending system that would meet their needs, they

contacted us and we began to talk about how our equipment could modify their bitumen to provide better performance for their hot-mix."

According to Wilkey, the officials at the Beijing Bituminous Concrete Factory had earlier leased some polymer-blending equipment from a German company to test the polymer they planned to use. But when it came to the purchase of the equipment, they came to Heatec.

The Heatec installation consists of two storage/mixing tanks, a mill unit, a mixing system, a polymer feed system, a totally automated control system, and all necessary piping, wiring, and insulation. The installation has the ability to turn out polymer-modified asphalt at rates ranging from 10 to 20 tph (9 to 18 metric tph).

"They're running styrene-butadiene-styrene (SBS)," said Wilkey. "SBS is a very popular polymer that can withstand high temperatures and extreme tearing forces. They use our equipment to mix the SBS

polymer pellets with liquid asphalt cement (liquid AC)—and then they shear it in the Siefer mill to get the consistency they want for their final hot-mix. They have a very precise and scientific approach to this process. From time to time, they extract samples of the asphalt with the polymer in it, and they study it under a microscope."

Preparing a polymer-blending system for shipment literally around the world was a real challenge for Heatec's engineering and shipping departments.

"One of the key things we were able to do," said Wilkey, "was find a way to mount the entire system on skids, as separate components, so that the skids could be inserted into the 40-ft. (12-meter) shipping containers used on cargo ships. This was the first time we had ever done this with a polymer plant.

"We shipped the two batch tanks horizontally in one shipping container. We had another tank that also went horizontally into another shipping container. And then we

put the electrical panel and some miscellaneous components inside a third container. Total: three shipping containers. In this way, we were able to dramatically reduce the shipping costs."

In Beijing, on the receiving end of the shipment last summer, the new plant went up very quickly.

"Once they unloaded the shipping containers, laid out the skids, and piped it up, all they had to do was plug in the cables to the different panels. There was virtually no conduit wiring to be done. About 99% of the set-up was 'plug-and-play'."

Today, the system is active almost constantly. Beijing Bituminous Concrete Factory supplies polymer-modified asphalt (bitumen) to their own two on-site HMA plants for paving projects of their own. They also sell the modified bitumen to other contractors in the Beijing area.

"The Beijing Bituminous Concrete Factory is determined to stay on the cutting edge of hot-mix technology," said Wilkey. "We're happy if we have been able to help." ▼▲▼

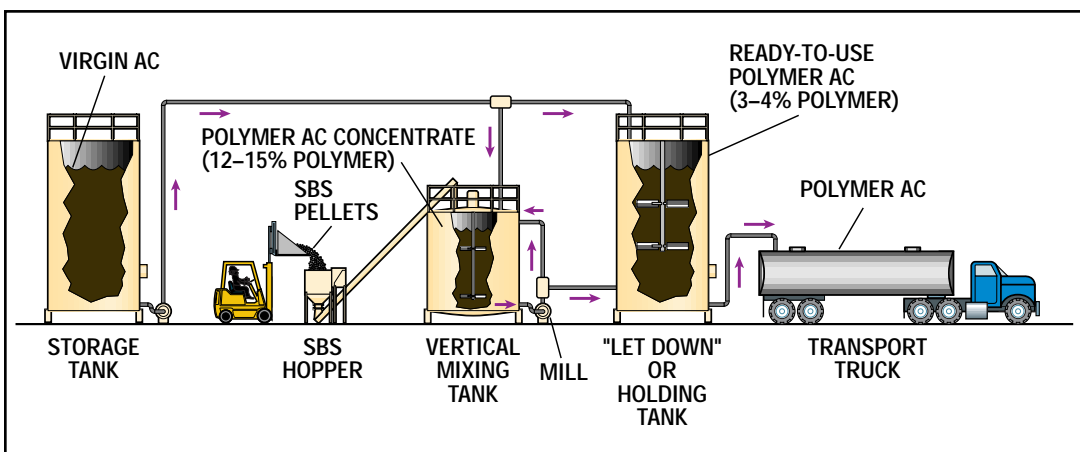
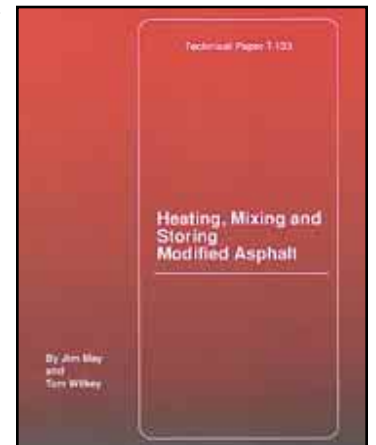


The polymer-blending system that was designed and built by Heatec in its Chattanooga factory eventually ended up in Beijing, China—where it is now being used to produce high-performance hot-mix asphalt or bitumen for streets such as Pingan Da Dao (facing page) a main thoroughfare not far from the Palace Museum ("The Forbidden City") and Tiananmen Square.

The installation was skid-mounted and pre-wired before shipping around the world—and the control panel (left) makes the process totally automatic.

The polymer-blending process purchased by Beijing Bituminous Concrete Factory is very similar in componentry and layout to the drawing (below).

If you are interested in learning more about the polymer-blending process, you might want to read Heatec's bulletin on the topic: **Technical Paper T-133: Heating, Mixing, and Storing Modified Asphalt**. The bulletin has detailed information about how to work with polymer-modified asphalt mixes (PMACs) and mixes which use ground tire rubber (GTRs). It is free, of course.



**FOR MORE INFORMATION**

about Heatec's portable or stationary polymer-blending systems—or its hot-oil heaters and liquid-AC storage tanks—just call this number and ask to speak with Sharlene Burney:

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