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DEPARTMENTS

Heat Lamp

New infrared asphalt-repair equipment increases recycling, boosts sustainability

By Debra Wood
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Improvements to infrared restoration equipment and processes have led to faster, less-expensive, greener asphalt repairs and increased business for some contractors.



Since crews are putting hot asphalt onto hot asphalt, they can work in the snow, with no cold joints.

"We've tripled our profits in less than two years," says Paul Gustafson, president of Connecticut Infrared Asphalt Repair, Woodbury, Conn. "And we're a green company now because we recycle."

Crews place the infrared chamber, which generates about 800,000 BTUs of infrared heat, on top of the area in need of repair. The unit heats the asphalt 2 in. to 3 in. deep to a temperature of about 400° F.

"That brings the asphalt you are trying to repair back to its virgin state," says Roger G. Filion, president of Kasi Infrared, Claremont, N.H., the equipment manufacturer. "The rays penetrate into the asphalt and heat it slowly without burning the surface."

Workers then rake the asphalt to obtain clean edges. They apply a rejuvenator to return the oils to the pavement, add some virgin asphalt to fill in the pothole or depression and bring it up to grade, rake again and then compact the spot. Traffic can resume as soon as the repair cools.

Infrared restoration is a greener alternative to traditional "cut, remove and replace" asphalt repairs. Kasi estimates the carbon footprint from an infrared repair is one-seventh that of a cut-remove-replace job.

"On a normal day, we save about 4 or 5 tons of asphalt," Gustafson says.

Using this system, a typical 5-ft by 7-ft repair takes about 20 minutes with two people, compared to about one to 1.5 hours with four or five men using the cut-remove-replace method, says Gustafson, adding, "You eliminate manpower and vehicles."

Crews can complete infrared asphalt repairs in the winter and during snow or rain, adjusting the height of the heating chamber to dry the asphalt, Gustafson reports. This flexibility has allowed his company to operate year-round. Although asphalt plants typically shut down in the winter in Connecticut, Gustafson recently stockpiled 25 tons of fluff virgin asphalt in the fall to keep making infrared repairs all winter.

Gustafson says repairs using the infrared rather than the cut-remove-replace process last longer because cold joints with seams, which can let in moisture, are eliminated.

"The repair becomes bonded when you roll it," Filion says. "We've had core samples taken, and all of the compactions and integrity of the asphalt does not get disturbed."

Connecticut Infrared has used the technology to repair cracks and potholes in parking lots, roads, utility trenches, and tennis and basketball courts. Filion says the process works well on "alligator cracks" that occur in warmer climates.

"As long as the base under the asphalt is good, there really isn't anything that an infrared machine cannot repair," Filion says.

As many of Gustafson's potential customers are not familiar with infrared restoration, he offers to perform one repair at no cost to demonstrate the technology and the results. "Ninety-five percent of the time, that sells the job because there is no mess," he says.

A complete truck-mounted system, including the vehicle, costs about \$130,000 and can be put to use immediately, with little training. Filion estimates contractors obtain a 70% profit on each job, with the balance going to fuel, labor, insurance and so on. Kasi ships worldwide, with equipment in use in Russia, Hungary, Brazil and Ireland as well as the U.S.

Gustafson bought a second infrared truck this summer and expects to add a third by the end of the year. But he plans to expand slowly, so the company can continue to ensure its clients good service.

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