KEYHOLE CORING AND REINSTATEMENT

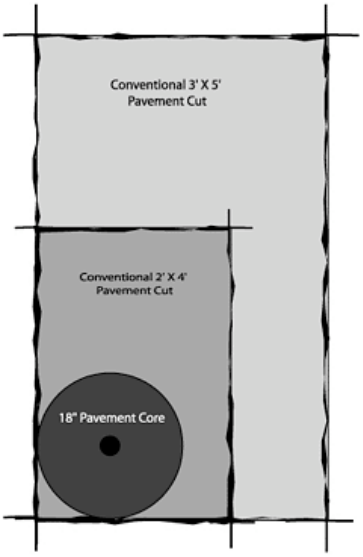
A better, smarter, and more environmentally sensitive way to make and repair utility cuts through pavement

Keyhole technology: A "green" process.

Keyhole technology is a process that uses small openings in the pavement to access buried utilities for routine operations and pavement repairs. Because it uses minimally invasive openings, it's often compared with laparascopic surgery.

In the keyhole coring and reinstatement process, operators use a rotary coring device to core a small hole through the pavement. Vacuum excavation is then used to expose the underground utilities. The pavement core is then "recycled" by setting it aside and bonding it back into the roadway as a permanent repair when work is completed.

This is an environmentally friendly, socially acceptable construction and maintenance practice. It reduces the impact of public works construction on the environment by conserving energy and resources and reducing pollution.



The neat, nearly invisible 18-inch-diameter circular cut is less than 25% the size of a conventional road cut that generates substantial noise and dust.

Reduced traffic disruption.

Faster, one-step permanent pavement repair means fewer and shorter road closings. Benefits include:

- Reduced fuel consumption and emissions during work zone delays
- Less dust and noise pollution
- Fewer potholes and other damage to the road structure

This less intrusive, precise excavation and simple reinstatement process is kind to the environment.

Keyhole coring and reinstatement reduces the work activity footprint.

- Requires no heavy equipment
- Results in less scarring to the landscape
- Creates no road cut spoil
- Uses no volatile temporary patching compounds that can escape into the atmosphere
- Core serves as a permanent waterproof repair that requires no additional site visits or road closings

keyhole coring and reinstatement ENVIRONMENTAL balance sheet

Nearly 900,000 utility cut permits are issued in the U.S. every year. All of these cuts could be performed through a 2-ft x 3-ft or smaller opening, making them ideal projects for keyhole technology. Following is just one example of the savings that are realized with the use of keyhole technology.

Keyhole technology saves money.

The U.S. gas industry spends **more than $1 billion every year** on excavation and restoration. Conventional repairs made with backhoes, dump trucks, pavement breakers, and other heavy equipment can account for as much as 80% of the total cost of these repairs.

Estimated restoration cost savings to utilities through the use of keyhole technology range from **$340 to $900 million.**

The reductions in structural damage to the road system, longer pavement life, and reduced maintenance that result from the use of keyhole technology can save **millions of tax dollars.**

Keyhole technology saves time.

After keyhole core reinstatements, roads can be safely reopened to traffic in as little as 30 minutes. And the repair is permanent, so there's no need for additional site visits. That can save **significant time in work zone delays and traffic congestion.**

Keyhole technology saves material and energy.

Using the original pavement core removed in the excavation process to repair the pavement when the job is done saves **2 million tons of asphalt concrete** (equivalent to 20,000 miles of a four-lane highway).

With no pavement spoil, reduction in spoil disposal saves **27 million cubic feet of material** (equivalent to 200,000 dump trucks).

Keyhole coring and reinstatement is a better way to perform utility cuts and pavement restoration that can reap real savings and environmental benefits.

To learn more about how keyhole technology can save you money and time – and create a safer work environment – contact:
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