



Community Concerns

Finding Bridge Cracks Before They Become Disasters

(NAPSA)—When considering bridge safety, you don't want to wait and cross that bridge when you come to it.

Cracks that are growing in steel are one of the leading causes of bridge failures—and occur, on average, once a week in the U.S.

For many communities, the time to deal with bridge safety is now. Most bridges were built at least 50 years ago and are not designed to withstand today's increased traffic loads.

According to the Federal Highway Administration (FHWA), 39 percent of all bridges are developing serious metal cracks that are often missed with the naked eye.

Without intervention, these cracks are likely to grow and lead to fracture. Although each of the 600,000 existing bridges in the U.S. must, by law, be inspected every two years, they are mostly done by inspectors using a pair of binoculars. According to the FHWA, 90 percent or more of these cracks are completely missed with visual inspection alone.

Fortunately, new technology can find small cracks and fissures early enough to save lives and save cities and states millions of dollars.

One effective new technology is the Electrochemical Fatigue Sensor (EFS) developed by Material Technologies, Inc. to measure the activity of growing cracks in metal bridges during ordinary traffic conditions. It's similar to the way an EKG monitors a heart.

The EFS consists of two electrodes that are attached to the surface of a bridge, one in an area susceptible to fatigue cracking.



New technology can see potentially dangerous growing cracks in bridges. Visual inspection often misses such cracks.

When a constant voltage is applied in an area, a consistent current response is produced. If the bridge has crack growth, the response is altered.

This technology not only lets officials know if there are cracks, but whether or not the cracks are growing, providing engineers with a good idea of the extent of fatigue damage.

The sensors can find growing cracks as small as 0.01 inches. Testing lasts an average of two days with the results reported back to the Department of Transportation. Funding this procedure is easier than communities might imagine.

Last year, the \$286 billion Federal Transportation Act allocated funds to help states evaluate non-destructive methods, such as EFS, to test growing cracks in bridges. Additionally, the service is no more expensive than conventional nondestructive evaluation methods already in use.

For more information, visit www.matechcorp.com.