



OHIO

*Serving Ohio's Cement
and Concrete Industry*

CONCRETE

Authorized Article Reprints

AUGUST 2006 VOL. 25 NO. 2

New concrete repair products demonstrated on oldest street in America

America's oldest concrete street in downtown Bellefontaine, OH is now 115 years old and still carrying traffic. Court Street, located on the south side of the Logan County Court House is the last surviving section of an 1891 four-street paving project that surrounded the Court House, and produced the first concrete streets in America. In 1991, a statue of the pavement's inventor/contractor, George Bartholomew, was erected at the west end of Court Street to commemorate its 100th anniversary.



Testing new pavement repair materials behind statue of George Bartholomew on Court Street in Bellefontaine, OH

Even though the old street is still intact, there have been several repairs made to it in the past. Most of the repairs have been by using traditional methods of saw cutting and removing deteriorated sections and patching with portland cement-based repair products. Much effort has also been put forth to seal the cracks and joints with bituminous joint fillers to keep surface water from entering the pavement and weakening the base.

At the time of the street's rededication in 1991, a City Council Resolution was passed to keep the street closed to all vehicular traffic. It was believed that keeping traffic off the 6 in. thick, 100 year old concrete pavement would help preserve it and slow down further deteriora-

tion. Approximately eight years ago, the businesses along Court Street successfully lobbied to have the street reopened (to cars and trucks). As a result, the street has again continued rapid deterioration.

The Bellefontaine Chamber of Commerce has been working with the Ohio Ready Mixed Concrete Association (ORMCA) and local ready mix producer, Ohio Ready-Mix Inc., of Huntsville, OH, to come up with suggestions for repairing or restoring the street. The original street sections are badly cracked and some are settling due to base problems. Several suggestions have been made to the Chamber including total removal and replication of the original street. Historically speaking, it is always preferable to repair or restore a historically significant structure rather than replicate it, but products available to re-bond pieces of broken concrete have only been marginally effective in the past.

Two new products marketed by an Ohio company, which have shown promise in trial spot repairs to concrete pavements and bridge decks for the Ohio Department of Transportation, were recently tested on the Bellefontaine street. One is a "concrete welder", consisting of a two part polymer product that gravity filled the smallest cracks and crevices to weld the sections back together. Larger cracks were pre-packed with special 3/8" aggregate prior to



Dispensing the polymer into the cracks



Placing special polymer patching material in larger voids

placement of the liquid polymer. A special fine aggregate was broadcast onto the surface before the material set up, for skid resistance. (Per the manufacturer, set up occurs in about 10 minutes depending on weather conditions.)

The other product tested was a gray colored blend of aggregates and polymers, which was site mixed and poured into the larger holes, and had a set up time of about 45 minutes. Both of these products were demonstrated to City representatives on the street in June. They will be watched closely to see how they perform under traffic. If these products work, there may be new hope for the oldest concrete street in America short of replacement.

George Bartholomew was a pharmacist (his statue faces the former location of his drug-store) and founder of the Buckeye Portland Cement Company, in nearby Marl City, OH. Having settled in Bellefontaine during 1886, he brought with him a knowledge of the portland cement industry from his experience with the San Antonio Cement Company of Texas as well as studying the material in Germany. It was in Bellefontaine, however, where he was able to bring his knowledge and experimentation to fruition. He was recognized for his accomplishments at the Chicago Worlds Fair Exposition in 1892.