



Mixing Strength With Satisfaction

STEVENSON EXPRESSWAY (I-55), CHICAGO, IL

MS-W1 SYNTHETIC FIBER SHOTCRETE

PROJECT:	Stevenson Expressway (I-55) Bridge Rehabilitation Chicago, IL
SPECIFIER:	Illinois Department of Transportation Springfield, IL
CONTRACTOR:	American Underground Engineering Hinsdale, IL
PRODUCT:	MS-W1 Synthetic Fiber Shotcrete
QUANTITY:	230 m ³ (8200 ft ³)
COMPLETION:	Summer 2001

The Southwest Expressway was originally opened in Chicago in 1964. It was renamed the Adlai E Stevenson Expressway a year later in honour of the late United Nations ambassador and former governor of Illinois. An additional section between the Dan Ryan Expressway and Lake Shore Drive East was added in 1966. Today, the Stevenson Expressway (I-55) acts as a main artery between Chicago and St. Louis. Originally designed to last 20 years, the 35-year-old expressway now carries more than a million vehicles weekly, an increase of over 84 % since its opening.

In December 1998, the Illinois Department of Transportation (IDOT) with assistance from the U.S. Department of Transportation introduced the \$500 million "Mission I-55" program, a 2-year re-construction of the Stevenson Expressway (I-55) Interstate. Tenders were called in early 1999 to rehabilitate a number of the bridges in this 15 km (9 miles) section between Canal St and Harlem Avenue in Chicago.

Lorig / Walsh JV, the project's General Contractor awarded a sub-contract to American Underground Engineering of Hinsdale, IL to complete the concrete restoration of the highway's bridges. American Underground submitted MS-W1 Synthetic Fiber Shotcrete for approval to Illinois IDOT. The key benefit offered by KING was the ability to provide a wet-mix method shotcrete incorporating Portland cement, pozzolans, fine and coarse aggregate, synthetic fibers and admixtures in a pre-packaged form. Dry, pre-blended admixtures eliminates the need to add air-entraining admixture in liquid form at the nozzle, while offering the consistency of a factory controlled pre-blended mix. IDOT conducted a full evaluation of MS-W1 Synthetic Fiber Shotcrete and added the product to their list of "Approved Pre-packaged Manufacturers of High Performance Shotcrete".

The process of removing deteriorated concrete from the abutment walls,

pier caps and median supports began in the Summer of 1999. American Underground crews incorporated hydro-demolition in the removal process allowing them to meet the demanding construction schedule while providing an excellent substrate on which to apply the shotcrete. Their shotcrete crew applied MS-W1 Synthetic Fiber Shotcrete using an Allentown Powercreter Pro wet-mix shotcrete machine. Shotcrete curing commenced immediately after the material had reached final set.

The success of MS-W1 Synthetic Fiber Shotcrete on this project has led to its use on several subsequent IDOT projects since its completion.

