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# **NYCCPC Promotes Use of Self Consolidating Concrete**

The New York City Concrete Promotional Council (NYCCPC), a strategic alliance between the New York City Ready Mixed Concrete Industry Advancement Fund, The Northeast Cement Shippers Association (NESCA) and other dedicated companies that promote the uses, benefits and advantages of quality ready-mixed concrete by educating the public and private sectors, has begun to promote self-consolidating concrete (SCC), according to NYCCPC Executive Director Carmine Attanasio.

Although successfully used in other parts of the country, SCC is a relatively new product to New York City and is being used for both infrastructure and building projects, Attanasio noted. In addition to the SCC committee, NYCCPC has a High Rise Committee, a Flowable Fill Committee, a Pavement/Pervious Concrete Committee, and a Concrete Homes Committee.

NYCCPC SCC Committee members said that SCC is used for architectural concrete whose finish is unusually smooth. It also is less labor intensive, which means money is saved during the construction process as the use of SCC shortens the time it takes to build a project.

### **SCC: Wave of the Future**

SCC is being called “the wave of the future. It extends the slump life of concrete while not extending the set time. Its main attribute is its flowability around tight sections.

**Michael Welch, Regional Manager of The Euclid Chemical Co. of Cleveland, OH,** noted that “SCC admixtures are specifically designed to modify the viscosity of a concrete mix and produce a highly flowable mix without any segregation or settlement of aggregate. SCC mixes can be designed for varying slump life, depending on the requirements of the placement.”

**Welch** noted that the high flowability of SCC “allows for complete consolidation in tight spaces, underneath box outs and around reinforcement. It allows for very crisp corners and details in architectural concrete.”

Other benefits to using SCC, according to Ken Krautheim, New York-area manager of BASF Admixtures Inc., include: concrete placement savings through improved production, reduced noise due to the minimization of vibration, better consolidation around prestressing strands, improved and optimized surface aesthetics, improved working conditions, increased safety, and excellent durability.

**Welch** added that “SCC can speed up construction times by increasing the amount of concrete that can be placed in a day with a fixed amount of manpower. SCC mixes typically gain higher early strengths than conventional concrete, allowing for faster form stripping and earlier loading, and there is less rework/rubbing to correct defects after the forms are removed.”

Why is SCC the wave of the future? According to **Welch**, it is because SCC allows contractors to be more efficient and gives designers more options in the design of building systems.

### **SCC: Good for Infrastructure**

The Committee pointed out that the Virginia Department of Transportation (VDOT) did its own evaluation of SCC in 2004. VDOT wanted to determine if settlement occurred after placement. It cased SCC in a cylinder 4 ft. (1.25 m) long and kept it vertical while curing. After a week, the tube was cut in half longitudinally to determine the percentage of paste, the distribution of fine and coarse aggregate and the air content in the top and bottom 5.5 in. (15 cm) of the tube. VDOT found that the percentages for the individual materials were similar in the top and the bottom, indicating that no segregation had occurred.

### **A Federal Endorsement**

In New York, the federal government has endorsed SCC by specifying its use on a \$100-million, 26-story Federal Office Building under construction at 45th Street and First Avenue on Manhattan's East Side.

This building is being constructed for the U.S. Department of State, according to Sek Eng of the U.S. General Services Administration (GSA), Region II, in Long Island City, NY.

According to Eng, "this is the first building in New York City completely using SCC for its exterior. Construction began October 28, 2005. It was at the foundation stage in the summer of 2006, and it is scheduled to be substantially complete by September 5, 2008." Elaborating, Eng said, "SCC provides better flow and has a better exposed finish. SCC also speeds construction and improves building aesthetics. This building," Eng added, "will feature a sandstone color."

According to Reginald Hough, an architectural concrete consultant based in New York City and Rhinebeck, NY, the GSA “also is considering the use of SCC for the building’s floors.” “SCC,” Hough said, “creates an architectural surface without surface voids and makes it a maintenance-free exterior.”

Hough said that he believes that the GSA chose SCC for this project because this structure is at the property line, and has no room for crash barriers, which most federal buildings have for additional security. In this instance, the building itself serves as a crash barrier, which is composed of solid, high-strength concrete that is aesthetically pleasing. Hough said, SCC also is being used on the new 15,000-sq.-ft. Reception and Administration Building under construction at the Queens Botanical Garden in Flushing, NY.

The project includes a green-roofed public auditorium that will feature 40-ft. wide and 120-ft. long walls with sloping sides for a rooftop garden. These walls will use SCC, he added. Hough pointed out that SCC also can be used not only for walls, but for slabs and columns too.

In addition to the Federal Office Building in Manhattan and the Queens Botanical Garden in Flushing, NY, other current projects using SCC include the Comcast Tower in Philadelphia and a tilt-up concrete project that is a private residence on Long Island that is using more than 1,000 cu. yds. of SCC.

The NYCCPC has taken on the task of promoting SCC not only to educate the public and private sectors of its measurable and tangible benefits, but in the hope that its use will improve the quality of life for all New Yorkers. CEG

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