Concrete Admixtures Used to Create Saltwater Aquarium

Grace concrete admixtures are being used to create one of the most amazing and unique fish tanks in the world at the Frost Museum of Science, currently under construction in Miami, FL.

On Friday night, December 12, crews began working non-stop for 24 hours to pour over 1,200 cubic yards of concrete, creating more than 9,000 square feet of tank surface area, and filling the walls of the massive cone-shaped Gulf Stream aquarium.

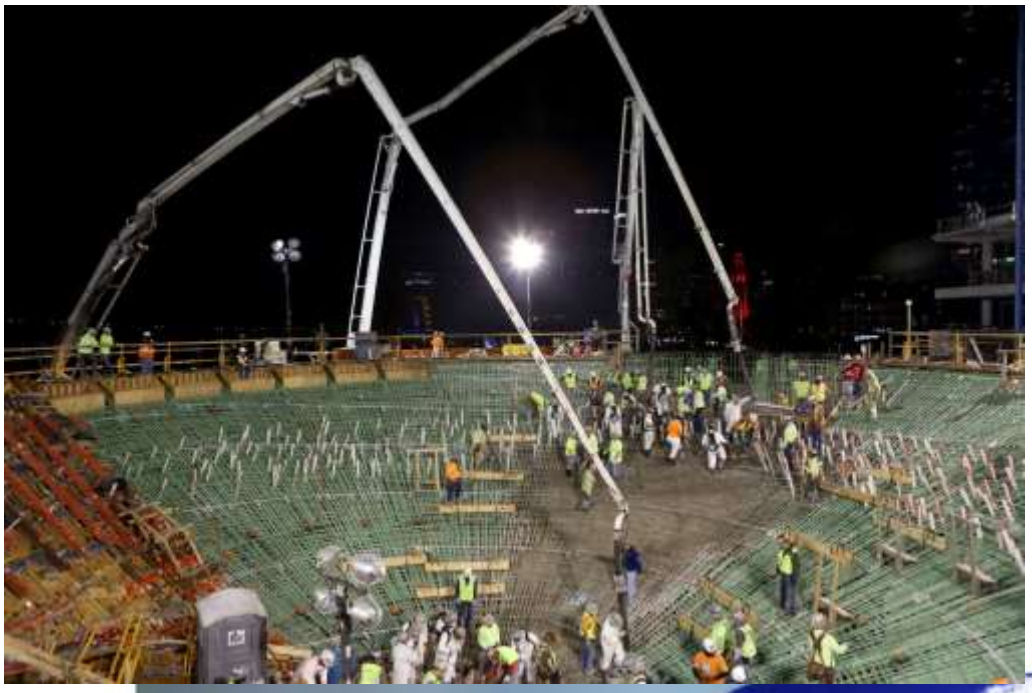
This very long and intricate concrete pour would not have been possible without the various Grace admixtures supplied to long-time customer Supermix Concrete.

Frank Suarez, Grace Sales Representative, said the keys to success were all the pre-pour planning meetings, mix design testing and field mockup trials done by Grace, Supermix and Baker Concrete. "We had to be ready for the worst case scenarios of Plan B and Plan C" commented Frank. Grace admixtures were ready to be dosed at the jobsite and at the backup plant if necessary. "We had to manage keeping the concrete plastic/fresh for up to 12 hours in certain portions of the tank, along switching from with low slump/tight concrete mixes to highly fluid mixes at the jobsite based on Baker's needs." Ren Ramnarine, Grace Technician, split the time with Frank at the plants and jobsite ensuring the performance of our admixture dispensing equipment.

The 500,000-gallon tank, open to the sun and sky, will serve as the centerpiece of the new museum, which is expected to open in the summer of 2016. Not only will this be Miami's newest iconic landmark, but also one of the most complex projects currently being undertaken in the United States. The laborious groundwork included the installation of over 370 tons of epoxy-coated steel reinforcement intertwined by a web of 57 pipes containing over 700 high-strength post tensioning cables that generate over 14,000 tons of compression force into the concrete to prevent cracking once poured.

A significant achievement in architectural design, the tank's complex, conical shape, inclination and suspension has never been done before. It also features a 30-foot diameter transparent circular opening at the bottom of the basin, which will be suspended over a museum gallery and event space. Visitors below the tank will be able to look up to see fish—including sharks—swimming above their heads! The shape is energy-efficient and ideal for sharks as there are no sharp corners, maximizing the cruising surface while reducing the amount of water.

Photos & Illustrations on next page



Construction crews worked non-stop for 24 hours to pour over 1,200 cubic yards (120 trucks) of concrete, creating more than 9,000 square feet of tank surface area and filling the walls of the massive cone-shaped Gulf Stream aquarium.