

CAPRI RESIDENCES - SOUTH BEACH

THE PENETRON® SYSTEM

CH CASE HISTORY

PROJECT	Capri Residences – South Beach
DATE	January 2007
CUSTOMER	Cemex (Previously <i>Rinker Materials</i>)
INDUSTRY	Commercial High Rise
LOCATION	Miami Beach, Florida, USA
PRODUCTS	Penetron Admix®

PENETRON®
INTEGRAL CAPILLARY CONCRETE WATERPROOFING SYSTEMS



TOTAL CONCRETE PROTECTION®

CASE SUMMARY

Located in the exclusive area of South Beach Miami, Capri South Beach is an exclusive new development featuring 72 luxury condominiums covering nearly three blocks right on Biscayne Bay with breathtaking downtown city and water views in one of Miami's finest locations.

This premiere project will be comprised of 2 new towers, 14 and 6 stories, as well as the renovation of a 3 story structure built by renowned architect Igor Polivitsky in over 105,000 square feet of living space. This one-of-a-kind oasis also features oversized balconies, a lap pool, waterfront gym, private roof top terraces, on-site boat slips and private underground parking.

The location of the Capri site, right on the edge of Biscayne Bay, posed some critical concerns for its designers and engineers with regard to waterproofing protection from the high hydrostatic saltwater pressure that would be encountered.

The building designs called for the construction of underground parking facilities below the building and extending 10 feet below sea level. To support the new 14 story structure a new retaining wall would be poured to hold back the headwaters of the Bay as well as 4 foot thick Tremie slab poured underwater and then subsequently pumped dry. This would essentially create a "bathtub" and the Tremie slab would be topped later by a four foot thick structural slab.

**Aerial View of Capri Residences at the Start of Site Excavation**

Since pouring such a large volume of concrete at one time at such thicknesses would almost guarantee the formation of cracks in the concrete, the decision was made to include Penetron Admix® in the concrete to ensure that a watertight structure would be obtained once all was completed. Penetron's technology would not only lower the permeability of the concrete and increase the concrete's performance under the hydrostatic pressures being applied by the Bay, it would also afford the concrete the ability to seal any hairline shrinkage and heat cracks that might appear.



Wide angle view of the Capri Residence site being prepared to receive the Tremie slab

Due to the thickness and volume of concrete that had to be poured in each slab, the concrete supplier, Rinker Materials, proposed mix designs that were low in cement to reduce the heat generated as the concrete hydrated. Penetron worked closely with Rinker Materials in reviewing their mix designs, dosage rates and dosing operations at their plant to ensure that more than 7,000 cubic yard concrete pour process went smoothly.



Workers applying finishing touches to the slab



A view from inside the "bathtub" showing the retaining wall and slab



Construction in progress on the tower



Aerial view rendering of all three Capri buildings

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