

Marine Pile Caps

Pascagoula River, MS



When Parnell Construction was contracted by Transystem to fabricate marine pile caps and textured boat ramps for the National Oceanic & Atmospheric Administration (NOAA) on the Pascagoula River in Mississippi, Boral Material Technologies' ultra-fine pozzolan Boral Micron³™ and a calcium nitrite corrosion inhibitor were chosen to extend the life of the project.

With the use of Boral Micron³, a Rapid Chloride Permeability Test (RCPT) value (ASTM C 1202) of less than 750 coulombs (within 56 days) was achieved.

Over 700 cubic yards of concrete were required for the project, all of it was placed with Boral Micron³, which increases concrete strength and durability and reduces permeability to chloride, water and oxygen and increases concrete's resistivity. These properties contribute to the development of a corrosion resistant concrete typically used in marine environments much like the NOAA project where tidal changes can vary by four feet.

Parnell Construction Superintendent Ed Griffin and Bobby Dowdy, Quality Control Manager for

Concrete Products, the ready mix concrete supplier, and Kevin Jackson from Boral conducted two mixture trials prior to concrete placement. The concrete was finished with a special "grooving bull float" developed and constructed by Griffin.

"I was very happy with the finishability of the mix," Griffin said. "It's creamy and easy to finish."

"Micron³ creates a very dense concrete in turn resulting in extreme impermeability and resistance to chlorides," Dowdy said. "Micron³ allowed us to meet challenging specifications that we could not have met

with our day-to-day materials."

"Boral Material Technologies technical support and product development made manufacturing concrete that met challenging specifications much easier and economical," Dowdy added.

"NOAA is extremely satisfied with the strength and permeability resistance results," noted Concrete Products General Manager David Bosarge. "NOAA feels they have a product that will last much longer and remain free of problems for a long time to come."

