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Concrete[®]

PRODUCTS

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OCTOBER 2009

- A weak case for messing with Texas Industries, p. 4
- Syar Concrete, LLC, p. 5
- Bagging green, p. 8
- New England's E. F. Shea Concrete Products, p. 15
- Workability admixture, p. 21
- Accelerated curing of manufactured concrete, p. 26



TEXAS
TRAILBLAZER

Underground integrity

CHEMICAL TREATMENT HELPS DELIVER DURABLE, SUSTAINABLE SEPTIC TANKS

Among items best buried—the longer the better—septic tanks top the list. Accordingly, Nanaimo, B.C.-based ABC Precast & Ready Mix has applied advanced chemistry to ensure that their concrete tanks remain the product of choice for residents of British Columbia.

“The biggest problem with septic tanks,” explains ABC Precast & Ready Mix General Manager A. J. Hustins, “is leaching causing degradation to concrete. To minimize this effect, we take special care to form our septic tanks with newer molds and high-quality concrete, exceeding industry standards for thickness and strength. We also look to industry advancements.”

That search did not take the company far afield, as the operation had been testing in other product lines an additive that provides waterproofing protection and concrete strength enhancement—Xypex Admix C500. “The product was performing so well in terms of waterproofing and durability,” Hustins reports, “that we decided to put it to the test in our septic tanks, with some impressive results.”

IN-HOUSE TESTING

Added during batching, Xypex C500 reacts with calcium hydroxide and other cement hydration by-products in the mix, causing a catalytic reaction that generates a nonsoluble crystalline formation throughout the concrete’s pores and capillary tracts. Thus, the admixture-fortified concrete is permanently sealed against penetration by water or liquids from any direction, as well as protected from deterioration due to harsh environmental conditions.

ABC Precast & Ready Mix examined the impact of Xypex Admix under a variety of conditions, including sulfate resistance and compressive strength testing. Acid-resistance tests have shown that the additive’s blocking of acid penetration prevents formation of sulfoaluminate hydrate, an expansive compound that causes the concrete to self-destruct. Also highly resistant to chemicals, Xypex C-500 seals hairline cracks up to 0.4 mm. And, unlike coatings applied to the concrete surface, it requires no reapplication.

Typically, the producer aims to achieve a minimum 32 MPa in its tank mix design at a 28-day break. The average obtained with Xypex is 45 MPa. “The Xypex crystalline reaction helps the concrete hold more moisture over a longer period of time,” Hustins notes, “so we get a longer slower, moister cure, which ultimately yields a higher strength.”

Some benefits were visible to the naked eye.

“We knew our tanks were working in terms of waterproofing,” Hustins affirms. “Looking at a tank filled with water to see if the concrete was getting darker in color and showing signs of dampness, we saw none of the color changes that would have been a clear sign that water was leaching through the concrete.”

FIELD PROOF

All ABC Precast septic tank mixes are dosed with Xypex Admix C500, which is available in volumes of 275, 400, 750, 1,000, 1,200, 2,000, and 4,000 imperial gallons. The product is added at a dosage rate of 3 percent by weight of portland cement for precast tanks.

Among septic tank installers and contractors in British Columbia, recognition of the premium quality afforded by Xypex Admix C500 is growing. Recently, ABC Precast was awarded a contract to supply a multiple-tank system for one of the Gulf Islands, located off Vancouver’s east coast. “The client specifically selected our septic tanks for their strength and durability,” Hustins emphasizes. —www.xypex.com

