The first step in the repair process was to seal the cracks. Leaking cracks were repaired by injecting SikaFix HH, an expanding polyurethane foam grout. Non-moving, dry cracks were repaired by first sealing the face of the crack with Sikadur 31 Gel and then injecting Sikadur 52 epoxy resin into the crack. Based on the depth of deterioration, it was determined that the resurfacing effort would require the application of a repair mortar that could be applied at a depth of 1/2 inch in order to fully encapsulate the exposed course aggregate and level the tank walls. Due to the large area to be resurfaced (approximately 400,000 square feet), shotcrete methods were employed to increase productivity. Sikacem 103 dry process shotcrete was chosen over other alternatives primarily because it significantly reduces the permeability of the concrete surface making it much more difficult for water to penetrate into the pores of the concrete and cause damage.

The combination of 3,000 pound bulk bags of Sikacem 103 and 6,000 pound capacity volumetric mixing equipment allowed the contractor to achieve production rates of over 28,000 pounds of shotcrete per 8 hour shift.
For Water Treatment Facilities...
Sika’s System approach to Concrete Repair and Protection

Anti-Corrosion Primer and Bonding Bridge
Sika Armatec 110 Epo-Cem - protects the steel from corrosion in areas of inadequate cover. Improves bond of repair mortar to both the substrate and steel.

High-Performance Repair Mortars
SikaTop PLUS mortars - two-component, polymer-modified materials containing Sika FerroGard 901 corrosion-inhibiting admixture. Sikacem mortars are machine-applied by dry-process shotcrete techniques for large scale repairs requiring a high level of concrete protection.

Leveling mortars for Coating Damp Concrete
Sikagard 75 Epocem - can be used as temporary moisture barrier to allow application of epoxy coatings (even when the concrete cannot be made dry).

Problem Joints/Cracks Sealing System
Sikadur Combiflex - a unique strip and seal system used to seal problem joints and cracks, even those undergoing extreme movement. Failed joint sealants need not be removed prior to installing Combiflex (a great labor savings).

Joint Sealing
Sikaflex, High Performance Sealants - are premium-grade polyurethane joint sealants that are fully compatible with Sika’s concrete repair systems.

Surface Sealing/Waterproofing Mortar
SikaTop Seal 107 - a polymer-modified waterproofing and surface sealing mortar for tanks and reservoirs. Used on the inside of the tank walls it prevents water-loss (seepage) and prevents surface erosion. Used on exterior walls it protects water quality by preventing infiltration.

Protective Epoxy Coating
Sikagard 62 - a 100% solid, high-build protective coating used successfully on water projects for decades. It offers long-term protection to the concrete and easy maintenance.

Epoxy Injection and Bonding
Sikadur - epoxy resins help restore structural integrity by injection into cracks and voids. The most comprehensive range of epoxy products for structural bonding and grouting.

Structural Strengthening Systems CFRP
Sika CarboDur - a proven system of external strengthening using epoxy-bonded Carbon Fiber Reinforced Plastic (CFRP) laminate strips. Stronger than steel, yet lightweight and non-corrosive, this system can solve unique strengthening problems in a variety of concrete structures.

Chemical Grouts for stopping water leaks
Sika Fix - chemical grouts are polyurethane-based and expand into a foam upon contact with water. When injected into leaking cracks, joints or crevices this expansion process forms a seal which stops water infiltration - fast!

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