



CASE STUDY

MARKET APPLICATION FOCUS

Parking

Waterproofing

Crackbridging Deck Membrane

Project: Twin Towers Project
Dallas, TX
Owner: LaSalle Partners Management Services
Contractor: Moisture Shield
Year: 1998

THE PROBLEM



This post-tensioned parking structure measures over 125,000 square feet on only one level. Cracks and failed joints caused severe leaking into the covered parking below. A number of areas had ponding water that made the leaking worse. This leaking water caused problems in the occupied space below. With a number of high-profile clients in the building, the owner determined that an aesthetic waterproofing system was needed to protect the concrete and the tenant's cars.

THE SIKA SOLUTION

After evaluation of the concrete, the surface was prepared using Blastrac[®] shotblasting equipment. Moisture Shield chose to do this deck in three phases. Each of these phases involved a fast turn-around approach to minimize the impact on parking for the two buildings.

After surface preparation was complete, Moisture Shield prepared the area to receive the Sikafloor Traffic System Coating. To achieve a level surface, and eliminate "bird-baths", the contractor used Sika Repair 222 to slope the concrete surface to the drains. After leveling was complete, all cracks were routed and sealed using Sikaflex 2c, Sika's two-component polyurethane joint sealant.



After the sealant was installed and leveling complete, the deck was primed using Sikafloor 152 primer a two-component solvent containing epoxy primer. The waterproofing layer was then installed using Sikafloor 450, a single-component, moisture-cured urethane. The Heavy Duty Traffic System was then completed using two coats of Sikafloor 455, Sika's UV stable, extremely abrasion resistant, single-component top coat. The cure rate of both the Sikafloor 450 and Sikafloor 455 was accelerated by the use of the Sikafloor 454 booster additive.



For Parking Garages... Sika's System approach to Concrete Repair and Protection

Corrosion Inhibitors

Sika FerroGard® 903 as a dual action, corrosion inhibitor will reduce corrosion currents by penetrating through the concrete and forming a protective coating on the embedded steel bars.

Anti-Corrosion Primer and Bonding Bridge

Sika Armatec® 110 Epocem protects the steel from corrosion in areas of inadequate cover. Improves bond of repair mortar to both 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 repair.

Problem Joints/Crack Sealing

Sikadur® Combiflex is a unique 'strip and seal' system used to seal irregular or large cracks, even those having large or shear movement.

Crackbridging Deck Membrane

Sikafloor® 450/455 is a single component polyurethane system used in locations from aggressive vehicular abrasion to foot traffic of balconies and plaza decks.

Epoxy Injection and Bonding

Sikadur® epoxy resins help restore structural integrity by injection of cracks and voids.

Structural Strengthening Systems CFRP

Sika CarboDur® a proven system of external strengthening using epoxy bonded lightweight carbon Fiber Reinforced Polymer (CFRP) strips or sheet. Stronger than steel yet lightweight and non corrosive, this strengthening system can solve unique strengthening systems in many concrete structures.

Anti-Carbonation Coatings

Sikagard® Facade Coatings have been proven for more than 20 years as protective and decorative coatings for facades and soffits to prevent the ingress of water, carbon dioxide (carbonation) but will still allow the structure to breathe and move thermally and dynamically.



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