



CASE STUDY



MARKET APPLICATION FOCUS

Stadiums

Concrete Repair & Protection

Carbonation Induced Corrosion

Project: Rose Bowl Stadium, Pasadena, CA
Owner: Rose Bowl Operating Co., Pasadena, CA
Engineer: Wheeler & Gray, Pasadena, CA
Contractor: Western Waterproofing Co., Inc., Anaheim, CA
Year: 1998

THE PROBLEM



Originally built in the early 1920's, the historic Rose Bowl Stadium in Pasadena, CA is undergoing extensive improvements exceeding \$20 million.

Early in the history of this stadium, the original wooden seats, were used as formwork to cast new reinforced concrete bleachers.

As the years have passed, carbonation of the cement paste, compounded by inadequate cover and compaction of the concrete, reduced the corrosion protection around the rebar, resulting in rusting of the rebar, cracking and spalling of the concrete bleachers.

THE SIKA SOLUTION

Preparations

The contractors removed all the defective concrete and primed the exposed rebar with Sika Armatec 110, an epoxy modified, cementitious slurry primer.

Repair/Protection

The repair and overlay of the complete one million square feet of concrete bleachers to an approved broom finish was carried out using SikaTop 122 PLUS, a two-component, polymer-modified, cementitious mortar with added corrosion inhibitor, Sika FerroGard 901.

Curing was critical with air temperatures during application over 90°F and great care was taken to presoak the concrete with fresh water before each application and protect each operation with presoaked Burleen.

Finally, new thin profile seating was fixed by Sikadur Injection Gel to ensure the 96,000 seater stadium opened for the UCLA Bruins game on September 12, 1998.





Sika's System Approach to Stadium Concrete Repair and Protection

Anti-Corrosion Primer and Bonding Bridge
Sika Armatec® 110 EpoCem® - protects rebar in areas of inadequate cover.

High-Performance Repair Mortars
SikaTop® PLUS - two-component, polymer modified containing Sika FerroGard 901 corrosion-inhibitor.
Sikacem mortars are machine-applied by dry-spray equipment for large scale repairs.

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.

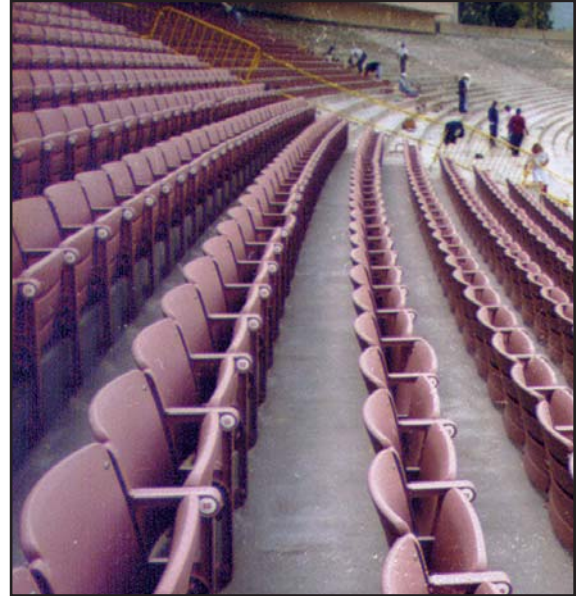
Crackbridging Deck Membrane
Sikafloor® 450/455 is a single component polyurethane system used to provide a durable, abrasion resistant, waterproofing layer for stadiums, park decks, balconies and plaza decks.

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

Anti-Carbonation Coatings
Sikagard® 550W and 670W - protect concrete facades from the damaging effects of carbon dioxide (carbonation), water and pollutants. Either crack-bridging (550W) or rigid (670W), both are high-performance protection coatings, available in a variety of decorative colors.

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.



1-800-933-SIKA NATIONWIDE
Regional Headquarters and Sales Centers
For the location of your nearest Sika sales office, contact your regional center.



Sika Corporation (USA)
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 201-933-8800
Fax: 201-933-6225

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Corregidora, Queretaro
C.P. 76920 A.P. 136
Phone: 52 42 25 0122
Fax: 52 42 25 0537

Sika Canada, Inc.
601 Delmar Avenue
Pointe Claire,
Quebec H9R4A9
Phone: 514-697-2610
Fax: 514-694-2792

The information contained in this document(s), including but not limited to any recommendations regarding the use and application of Sika Corporation ("Sika") product(s), is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. The information contained in this document(s) is valid only for the applications and uses of Sika product(s) described herein. Any deviation from any of the instructions, uses, applications and recommendations contained in this document(s) regarding the Sika product(s) will void any Sika warranty. The user of the Sika product(s) must test each product for suitability for the intended application and purpose. The user of Sika product(s) must always read and follow the warnings and instructions for each product on the current Technical Data Sheet, product label and Material Safety Data Sheets prior to product use. All sales of Sika product(s) are subject to its current terms and conditions of sale available at www.sikacorp.com or 201-933-8800. Technical Data Sheet(s) and Material Safety Data Sheet(s) are available at www.sikaconstruction.com. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instructions for each Sika product as set forth in the current Technical Data Sheet, product label and Material Safety Data Sheet. Sale of Sika product(s) are subject to the following Limited Material Warranty: Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Technical Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Sika SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. Sika SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.