



# SIKA AT WORK

## SAN FRANCISCO – OAKLAND BAY BRIDGE

BUILDING TRUST



# SAN FRANCISCO – OAKLAND BAY BRIDGE

## PROJECT DESCRIPTION

The San Francisco-Oakland Bay Bridge was constructed at the same time as the Golden Gate Bridge and opened for traffic in 1936. In October 17, 1989, an earthquake measuring 7.1 on the Richter scale severely damaged the double decker truss structure east of Yerba Buena Island, knocking down a portion of the upper deck.

## PROJECT REQUIREMENTS

Caltran's completed a study and concluded that the western portion connecting San Francisco and Yerba Buena Island (the famous suspension bridge portion) could be retrofitted to withstand a major earthquake. They also determined it would be far more cost effective and safer to build a new eastern span rather than retrofit it.

The new structure is designed to meet current seismic codes as well as other codes pertaining to roadway shoulders, lane widths, stopping sight distances and other factors to substantially improve public safety.

The Skyway portion of the bridge connects the Oakland Touch-down structure to the Suspension Section just east of Yerba Buena Island. It is the longest component of the East span and where Sika products are currently being utilized by the joint venture partnership builder, KFM (Kiewit Pacific, FCI Constructors and Manson Construction Company).

The Skyway section of the new East span is the largest contract ever awarded by Caltrans at \$1.04B. It consists of a westbound and eastbound deck over 1 mile (1.61 km) long. The two roadways each have five lanes of traffic, emergency shoulders and 15 feet (4.6 m) wide pedestrian / bike paths. There are 452 precast sections. Each segment was cast in Stockton, California (approximately 100 miles (161 km) from the project) then shipped down on barges to the site. Prior to shipping, the transverse cables were tensioned and the ducts grouted with SikaGrout®-300 PT.

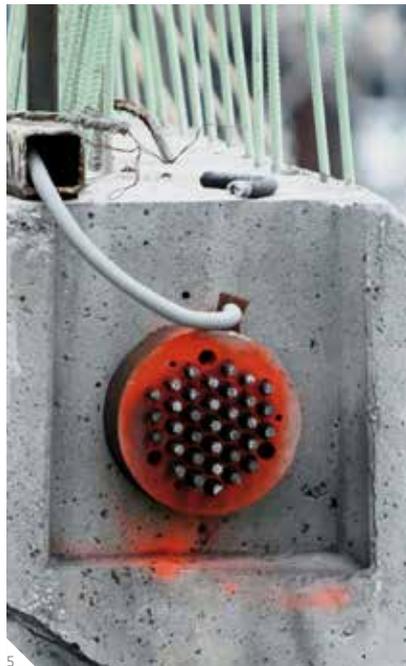




1 Concrete segment  
2 Application by hand of Sikadur®-31 SBA  
3 Applied Sikadur®-31 SBA



4 Fluidity test of SikaGrout®-300 PT  
5 Head of anchor  
6 Mixing machine grout  
7 Air pipes



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160 hollow steel-pipe piles



Construction of the skyway



Grout coming out of the air pipe



The precast element shipped to building site

## SIKA SOLUTIONS

More than 16'000 gallons (approx. 60'000 Liter ~120 tons) of Sikadur®-31 SBA were "smearred" to each side of each precast segment prior to final placement and tensioning. Sikadur®-31 SBA serves as a lubricant to allow for adjusting the placement of the segments during erection and as waterproofing for joints after placement of the segments and tensioning of the cables.

Over 200'000 bags of SikaGrout®-300 PT were supplied to fill the ducts containing the post-tensioned cables. The grout provides additional protection to the steel cables as well as enhanced bonding of the cables to the duct and precast concrete segment.

## PROJECT PARTICIPANTS

Project owner: CalTrans (California Department of Transportation)  
 Contractor: KFM (Kiewit Pacific, FCI Constructors and Manson Construction Company) - Joint Venture  
 Sika organization: Target Market Refurbishment

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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