

A CASE HISTORY ENDURA-FLEX[®] 1988 AND ECOSYSTEM[®]



Caltrans, Benica Bridge, California

As reported, The massive hammers used by contractors to drive pilings send sound waves through the water at levels that reach 200 to 250 decibels for 700 meters (.44 miles) in all directions. The wave bloats air bladders in fish and kills them. Fish die from 190 decibels and higher. (Jet takeoff is 150 decibels.) The piling work was halted for several months until a fish-protection method was found. Every day of delay costs \$100,000 to \$200,000 said a senior commission engineer. To protect the fish, a construction technique that places a large steel sheath lined with Endura-Flex[®] 1988 polyurethane using the Ecosystem[®] expansion process over the piling. The patented Ecosystem[®] expansion process allows the applicator to inject a pressurized inert gas into the stream of chemically crosslinking materials prior to the materials exiting the spray gun. This action results in a non-stressed, expanded closed cell, light weight, seamless monolithic film without changing chemical resistance or permeability characteristics of the material as defined in the non-expanded solid condition. Air is pumped from the surface into an aerator at the bottom of the casing, which will send a continuous stream of air bubbles in the space between the two steel tubes. Tests show it cuts the noise energy 99 percent and renders the pile driving safe for fish.