# FlexSleeve™ Case Study

## Fast Construction. Permanent Protection.

## Aggressive Produced Water Service

LPS first approached the client while they were in the middle of testing competitor sleeves due to joint failures related to the epoxy caulk that is required to help seal each side of the sleeve.

In side by side tests on 12 inch pipe, it was decided that FlexSleeve was the superior product due to the ease of insertion, better heat resistance, and a better sealing system that did not require epoxy caulking.

The client contracted LPS to provide FlexSleeves for trial in a produced water pipeline. One FlexSleeve was welded into a pipe spool immediately after a 90 deg. elbow that is connected to a pump. The water flow at this location is highly turbulent. The turbulence, corrosive water at elevated temperature, and relatively high pressure are all putting FlexSleeve to the test.

To date FlexSleeve is functioning with no adverse issues reported. Regular inspections are scheduled and this case study will be updated as results become available.

### Project Details

**Pipeline Details:** 6" dia. sch. 80 seamless. Produced water with hydrocarbons. 43° - 88° C (110° - 190° F). Operating pressure 103 - 124 bar (1,500 - 1,800 psi). Internally coated w/ Enviroline 2405 epoxy

FlexSleeve, coated w/ hi-temp FBE, installed in 6" section of 6" x 4" reducing elbow, connecting to pump w/ 4" outlet.

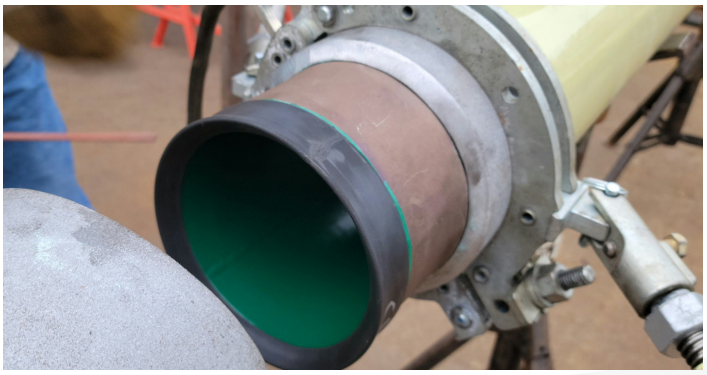
**Owner / Location:** California Resources Corp., Long Beach, CA. USA. Offshore oil production island.

**Contractor:** Schultz Industrial Services (Aegion)

**Install Dates:** January 2022

**Quantity of FlexSleeves:** 2 ea.

**Current Status:** FlexSleeve joints passed visual inspection, AUT, and hydrotests. No issues reported.





Photos from welding test performed by client prior to approving FlexSleeve for use in a produced water line. FlexSleeve was selected after a side by side test comparison with competitor sleeves. 12" sch. 40 pipe was used for the tests.

Lined Pipe Systems provides welded joint systems for pipelines transporting corrosive liquids and abrasive slurries: the ideal steel-protection solution that eliminates mechanical joints and permits fast construction.

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**Patents Pending**