



CASE HISTORY ~ CH-059

BIO-SEAL 197 SEALS AND REINFORCES STRENGTHENED SILO SUPPORTS

THE CHALLENGE: The 25 foot long support legs of a large elevated silo in a chemical plant needed to be reinforced to ensure an adequate load bearing safety margin. The silo was critical to daily plant operation so the required engineering work had to be carried out without disrupting normal plant activities.



Elevated silo with pumping in progress

THE SOLUTION: The engineering solution was to install oversize new support legs around the existing legs with additional diagonal bracing. To permanently seal and reinforce the structure, the annulus between the old and new legs was filled with a slurry of BIO-SEAL 197 liquid epoxy resin and #4 blasting sand.

BIO-SEAL 197 was chosen for this application because of its low viscosity, toughness, and long pot life or working time of about 45 minutes.

Lab testing at TFT determined a range of sand concentrations that would optimize pumpability and epoxy consumption. Threaded ports were installed at the tops of the fabricated outer legs to allow easy pumping and internal air release. The installation crew, located on a catwalk at the top of the legs, blended the BIO-SEAL 197 epoxy components with #4 blasting sand which was then transferred to a custom fabricated hopper feeding a 2" diaphragm pump. The outlet of this pump was then led sequentially to the new legs, and the BIO-SEAL 197 slurry was pumped into each leg over a period of about 10 minutes.

RESULT: The BIO-SEAL 197 injection proceeded without a hitch and ahead of schedule. The silo now rests on an extremely solid base without any unnecessary disruption to the plant.

For more information regarding this project, contact:

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PRODUCT: BIO-SEAL 197

YEAR: 2010

LOCATION: PEARLAND, TX

We go where others fear to spread!

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