Casa Grande, Arizona Solves Corrosion in Manholes

The city of Casa Grande, Arizona is located in the one of the fastest growing areas of the USA, about midway between Phoenix and Tucson. While new sewer and water lines are being installed rapidly for new developments, older sections still needed work on some badly deteriorated manholes.

Manholes deteriorate from a variety of serious problems; but, in the desert southwest, microbiologically induced corrosion is the primary reason for decay of the concrete in sewers. Microbiologically induced corrosion (MIC) can happen anywhere that hydrogen sulfide gas is produced. Hydrogen sulfide gas is the food for T. bacteria and the worse it is, the more bacteria there are to generate sulfuric acid to eat the concrete.

In May 2006, Valley Hydrovac, a licensed PERMACAST® applicator in Gilbert, Arizona, was selected to restore some of its more severely corroded manholes. Todd Lorenzen and his crew got to work using the cost-effective PERMACAST® solution.

PERMACAST® is a very high strength and exceptionally dense mortar which is centrifugally compacted onto the existing manhole interior with the patented SpinCaster™ that is raised and lowered through the center of the manhole spinning both clockwise and counter-clockwise for even and complete coverage. A uniform and dense layer of PERMACAST® mortar is cast evenly over the prepared interior and applied safely without entering the manhole, which increased production and safety for Valley Hydrovac and added cost-savings for Casa Grande.

Since these manholes were severely corroded, Con^{mic}Shield® was added to the PERMACAST® MS-10,000 as it was mixed. Con^{mic}Shield® is an EPA registered anti-bacterial agent which prevents microbiologically induced corrosion common to concrete and masonry manholes.

Con^{mic}Shield® prevents the acid-producing bacteria Thiobacillus, from colonizing into concentrations that produce the sulfuric acid that is highly detrimental to concrete and mortar lined manholes. Since it is added to the mortar, it protects the entire thickness of the concrete and cannot wash off, chip off, peel off, delaminate or pinhole.

Casa Grande elected to exercise an extra level of protection by adding a top coat of COR+GARD® epoxy directly over the fresh PERMACAST® mortar. The mortar and epoxy are engineered to cure together to form an impermeable barrier against future corrosion. The fully encapsulated interior is sealed against future leaks, the manhole is structurally enhanced and it is protected against corrosion by the double barrier of Con^{mic}Shield® and COR+GARD®.

Valley Hydrovac rebuilt and protected many of Casa Grande's heavily corroded manholes and easily stayed within the city's budget. Jerry Anglin, Wastewater Superintendent for the city of Casa Grande, said, "We are very pleased with the product and the applicator. We recently inspected some of the first manholes Valley Hydrovac did and they look great. With the double corrosion protection, we expect they'll last for a very long time. "

Con^{mic}Shield® has been in the ground successfully, all over the U.S., for over 10 years. It has been used in both new precast manholes and in the rehab of existing ones, where some of the highest concentrated levels of Hydrogen Sulfide Gas has been found.

Con^{mic}Shield® Technologies Inc. can be contacted Toll Free at 1-877-543-2094 or info@conshield.com.

Badly corroded precast manhole

Inspector with crew view spincast lining

Reinforced, sealed & protected