



Miami-Dade Specifies Con^{MIC}Shield[®] for New Manholes and Pipe

Miami-Dade, Florida, has an area where levels of Hydrogen Sulfide Gas are extremely high. When unprotected concrete is exposed to hydrogen sulfide gas, Thiobacillus bacteria can create sulfuric acid that causes severe levels of structural damage from corrosion in a very short time. One of their manholes on Key Biscayne had to be replaced every three years because of the *Microbiologically Induced Corrosion (MIC)* generated by turbulence and high levels of hydrogen sulfide gas.

In August 2001, a precast manhole was installed on Harbor Drive in Key Biscayne, Florida, called manhole #40. This manhole was fortified with Con^{MIC}Shield[®] during the precasting process at the plant. Con^{MIC}Shield[®] is a revolutionary technology for the effective and economical prevention of *Microbiologically Induced Corrosion (MIC)* commonly developed in concrete sewer pipe and manholes. It inhibits the growth of acid-producing bacteria (Thiobacillus) that produce sulfuric acid. Con^{MIC}Shield[®] is an additive that easily can be added to the concrete mix during precasting. Unlike coatings or plastic linings, Con^{MIC}Shield[®] molecularly bonds to the cement particles. It cannot wash off, chip off, peel off, delaminate or pinhole!



Precast barrel and cone sections with Con^{MIC}Shield[®]

Manhole #40 was inspected in February of 2005 by a delegation that included Rodney Lovett, Chief of Miami- Dade Water and Sewer, Tom Adkins, American Cast Iron Pipe and Francisco Fuentes, P.E.

for Miami-Dade Water and Sewer. Their inspection

of the manhole found it to have served well in this highly corrosive environment especially since it is the first manhole out of a force main.

At the same time that Manhole #40 was installed, three test pieces of different mixes, all containing Con^{MIC}Shield[®], were attached to stainless steel cables and hung over the opening of the manhole. Over the five year period, the stainless steel cables were replaced several times but the test discs were unchanged.



Manhole #40 with suspended test discs

The manhole shown below is only 15 feet away from Manhole #40. The epoxy coating peeled off as shown below.



Nearby manhole without Con^{MIC}Shield[®]. Epoxy has delaminated.

Con^{MIC}Shield[®] has been in the ground successfully, all over the U.S., since 1996. 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.