

City Upgrades to Composite Manhole Covers to Beat Corrosion



DUROSTREET® Composite Frames and Covers – Bullhead City, Arizona

The Bullhead City utilities department oversees the city-wide sewer system and most of the water systems throughout the city. After dealing with corrosion of cast iron in areas with high hydrogen sulfide, they chose to upgrade to non-corrosive composite manhole frames and covers.

The Challenge of Corrosion



Hydrogen sulfide (H₂S) is a highly toxic and flammable gas found in sewers across the United States. It can wreak havoc on metallic items and is highly corrosive to infrastructure products. Municipalities battle the effects of this on cast iron frames and covers throughout their systems, as well as concrete structures and pipes. H₂S attacks the iron structurally through material decomposition, as well as potentially bonding manhole frames and covers together. This can add up to high costs towards the maintenance, monitoring, and replacement costs of manhole covers throughout the city.

The Solution to a Challenging Environment

Composite manhole frames and covers are designed to survive in these conditions and do not corrode. The advanced production process makes them a perfect solution for the most challenging environments. In 2015, Bullhead City installed DUROSTREET composite frames and covers for a one-year test and evaluation period. They selected a 30" clear opening model (COM3200 classic series) for use at their wastewater treatment plant on a 42" sewer trunkline coming into the treatment plant. This was one of the most extreme applications the city could find as the levels of hydrogen sulfide are consistently around 400-500 ppm.

Long-Lasting Success

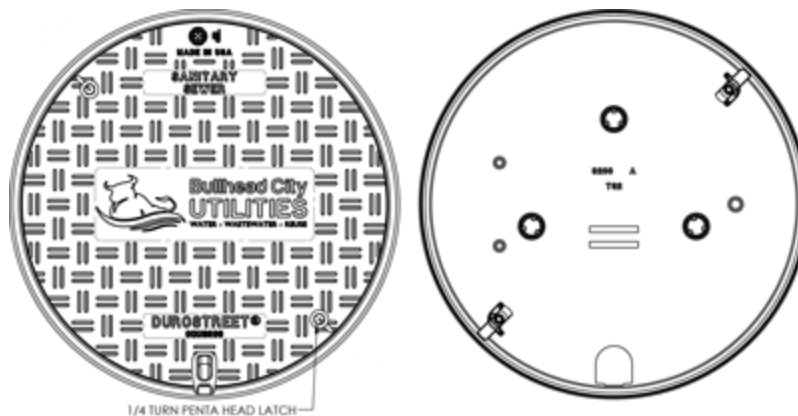


After a year of testing, the DUROSTREET frames and covers held up so well the city started including them in manhole rehabilitation programs in areas where corrosion was a concern and added the DUROSTREET COM3200 to their specification. Any pipe 12" or larger at the wastewater treatment plant uses these composite frames and covers.

They also started to put the assemblies in the roadways. The DUROSTREET access assembly is designed to withstand roadway use, proof load tested to 50,000 pounds, and fatigue tested to 2 million cycles at 16,000 pounds. The number of testing cycles is close to infinite loading to show this product will last and be safe. The importance of the strength-to-weight ratio was also considered when designing this highly engineered product. It is the strongest, most durable, yet lightest weight heavy duty composite cover on the market. Lighter weight covers are ergonomic and promote worker safety. Bullhead City found these frames and covers to be the best solution for their challenging environment.

“These covers have worked for us and our system...I’ve gone back and inspected them. They have held up better than anything else we’ve tested, which is why we've decided to specify them in the highly corrosive portions of our sewer system.”

-Ryan Farnell, Utilities Construction Manager, Bullhead City, AZ



Update

As Bullhead City’s confidence in the DUROSTREET frames and covers has grown, they have continued to purchase more each year. Through ups and downs in the economy and changes in directors/management teams, they continue to specify DUROSTREET.

“Our new director is really strong on trying to restore and retain our infrastructure...making sure new products are going to hold up. We continue to spec the COM3200 in all applications that have the probability of producing high concentrations of H2S.”

-Ryan Farnell, Utilities Construction Manager, Bullhead City, AZ



The proof is in the results. If you check out the city spec for sanitary sewer manhole frames and covers in Bullhead City, Arizona, you'll see "EJ DUROSTREET composite access assembly or approved equal". The city doesn't see an equivalent heavy duty product on the market that stands up to the same rigorous testing standards. In addition, you can see EJ cast iron manhole covers and frames throughout the roadways of Bullhead City (in areas with lower H₂S concentrations) and written in their specification.

Since the city was so pleased with the product performance and longevity, they have adopted the DUROSTREET composite access solution as the municipal standard for sanitary sewer manhole frames and covers. In 2022, the city partnered with EJ to create a custom logo cover. Going forward, the logo covers (both composite and cast iron) will be seen throughout Bullhead City.