Before And After Manhole Rehabilitation In Bay City, Michigan

Bay City, Michigan, located near the state's eastern shoreline, is a destination for vacationers interested in everything from antiquing to fishing and sailing. While the beauty of this historic city is unmistakable, its age was becoming apparent in the deteriorating condition of its sewer system.

Similar to many municipalities across the country, Bay City's manhole structures were made of brick, block and precast structures that varied in age. Over time, in some cases more than 50 years, leaks and deterioration began to jeopardize their structural integrity. In an effort to address these issues quickly and efficiently, an OBIC certified installer was called in to rehabilitate 170 of the city's aging manholes.

The Challenge

The manhole structures in Bay City varied in age and condition. They were also once a combined system, which meant that some of the manholes had atypical shapes. As a result, each and every manhole presented different circumstances that influenced the preparation and installation of the OBIC Armor lining systems.

In addition to the varying shape and condition of the structures, the manholes were spread across all areas of the municipality. The OBIC installers would need to adapt to working in high and low traffic areas, residential and industrial areas, tourist areas and sometimes in people's yards.

The Process

Step one: Preparing the surface

This first step in the manhole rehabilitation process was removing dust, sediment, and debris from the surface of the structure. Workers began by using a grinder to remove any rust from the metal top of the manhole. From there, they moved down into the structure and used a 3,000-4,000 PSI pressure washer with a rotary tip to clean the walls of the manhole. This step is vital, as it removes any sediment from the walls that would interfere with the lining system adhering to the surface.

To maintain an efficient pace while ensuring the highest quality workmanship, the installation team mobilized a crew that was solely responsible for prepping the manhole surfaces. They also worked at night when necessary to minimize the disruption to the residents and tourists of Bay City.

Step two: Drying the surface and sealing leaks

After the surface of the manhole structures were cleaned, the installation crew used forced air heaters to quickly dry the structure. Although this was not a necessary step, it allowed them to speed up the process and complete the entire rehabilitation project more efficiently.

Once the surface was dry, it was easy to detect any leaks in the manhole. These leaks were sealed using OBIC's line of grout products that were specifically designed for this purpose. These grouts were able to expand up to 6,000%, which allowed the crews to confidently address any size leak that they encountered.

Step three: Installation of OBIC Armor Lining System

After the surface of the manhole was prepped and a solid, dry surface achieved, it was time to install the first layer of the OBIC lining system.

This system is comprised of three layers of OBIC products. OBIC 1000 Polyurea, OBIC 1306 Polyurethane and a final layer of OBIC 1000 Polyurea were applied one layer at a time to complete the rehabilitation.

Step four: Quality check

After the OBIC lining system was installed and cured, the manhole was carefully inspected for defects. In addition to performing a visual inspection, crew members used a high voltage spark detection system that would detect tiny pinholes that are invisible to the human eye.

Although the true test of the rehabilitation's effectiveness can only be proven by its performance, the OBIC installation team was confident in its success. Their attention to detail during every stage of preparation, installation and quality control, gave them confidence that the OBIC Armor system would perform at optimal levels.

Each manhole was stamped with the date of installation and included the OBIC 10-year warranty. If any problem arises in that timeframe, installers will be on-site to correct the issue at no cost to the municipality.

Life Expectancy

The installation of the OBIC Armor System created a monolithic liner, effectively eliminating the possibility of infiltration or exfiltration. With a visual inspection every 2-3 years to ensure everything is working as expected, the OBIC system extended the life of the Bay City

manholes by at least 50 years.

To learn more about how OBIC products can rehabilitate a wide variety of water or wastewater systems, contact our team online or call us at 866-636-4854.