

Fibrelite Provides Water Utility with Radio Frequency Compatible Composite Covers for Automatic Meter Reading Application



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Project Overview

In 2017, in conjunction with an effort to automate their water meter collection services, this company contacted Fibrelite about the possibility of installing automatic water meter readers in or beneath a composite cover. The water company uses the SmartPoint 520M module (a Sensus product) to collect water meter usage data and transmit it to an aboveground receiver allowing for remote, real-time data collection (rather than collecting this information manually).



Fibrelite composite cover molded with central recess, designed to embed RF antenna in top surface of the cover

Problem

For its larger water customers, this company uses SmartPoint 520M radio frequency (RF) transmitter modules that are typically installed in manholes or vaults that are covered by cast iron, steel or aluminum covers. Many of these manholes or vaults are located in roadways or areas that may be trafficked by a vehicle and therefore require a vehicle rated cover. The SmartPoint 520M transmits the meter data via an antenna that is mounted by drilling a hole in the cover and installing the antenna on the surface of the cover (as shown in the photo below). By placing the antenna on the top surface of the metal cover, the RF signals will not be blocked by the metallic cover. Unfortunately, this also exposes the antenna housing where it can be impacted by snowplow or lawn mower blades, vehicles and/or pedestrians.



Previously installed metal covers exposed the antenna above the cover in order for the system to work

Solution

The water company contacted Fibrelite, who designed and manufactured a custom solution for them. Fibrelite's engineering team developed a solution that allowed the water company to embed the SmartPoint antenna in a recess molded into a 4" thick composite manhole cover. Mounting the antenna in the recess kept the antenna housing below the top surface of the cover and therefore safe from impact from snowplows, vehicles or equipment.

Fibrelite's composite access covers are lightweight, durable and very strong. Every Fibrelite cover is manufactured using high-technology, resin transfer molding production methods to create a highly engineered, monolithic composite product. Even with the 6" diameter molded antenna opening in the center of the cover, the Fibrelite manhole cover still allows for heavy vehicle trafficking across its surface.

Results

Following a successful 6-month trial project during the winter of 2017-18, this water company will now be replacing several hundred existing manholes with Fibrelite's "embedded antenna" composite covers.

For more information on Fibrelite's product range please contact us:

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The water company is now installing several hundred additional composite covers with antennas