

CASE STUDY



The utility segment of the water industry has about 53,000 community water systems and approximately 16,000 community wastewater facilities. Government-owned systems make up the vast majority of the United States water and wastewater utility segment, accounting for approximately 84 percent of all community water systems and approximately 98 percent of all community wastewater systems. In the United States, drinking water standards are regulated by the U.S. Environmental Protection Agency (EPA).

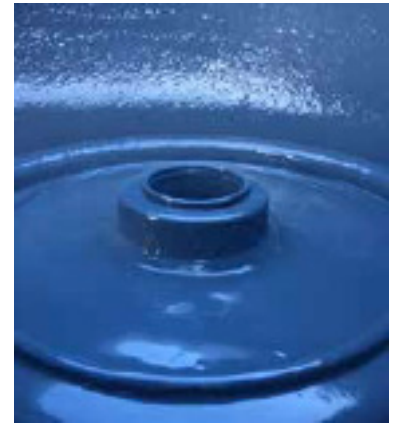
Whilst purity of drinking water is universally recognized as being of paramount importance, so too is the recognition of the need for irrigation water to also be free of major contaminants that could end up in food crops.

To that non-toxic end, coatings that are suitable for a wide range of use in contact with water whether it be waste, irrigation or drinking water are finding ever greater acceptance.

Problem

Internal piping for a major water pump in western Colorado needed a long term, robust coating that was totally compatible with contact with high volumes of fresh water for irrigation canals. Although not meant for direct human consumption, the client wanted a coating that was totally VOC-free and a demonstrated ability to have very good longevity in a totally submerged state. With a degree of suspended solids in the water, the coating also had to be highly resistant to abrasion.

In this case, the application was to be scheduled for a period of cold weather, so the coating also had to have a broad low temperature performance range.



Solution

Castagra's SG1 was chosen and applied by the team at Elite Protective Coatings. It not only has an ANSI/NSF 61 rating for use in contact with potable water but also has 20-year submersion in salt water that showed no measurable degradation.

Castagra's SG1 is also ideal for application in extreme cold weather down to around minus 4 Fahrenheit (-20 C). The one stipulation being that the surface to be treated be dry and four or five degrees above the dew point temperature.

The job also required an above normal coating thickness. In this case, Castagra's SG1 was applied to an average thickness of 50 mils. It has an advantage over many conventional epoxy coatings in that there is really no limit to the thickness that can be applied, which is especially important where pitting or severe cracking fissures are encountered. Additionally, because of the coating's unique chemistry as basically a plasticized gypsum, it retains a lifetime ability to re-bond to itself.

Application Results

The coating was applied, as anticipated, during cold weather with no anomalies reported. It was tack dry in 30 minutes and fully cured at the 24-hour mark at which point following a final inspection, the pump was deemed fully fit for return to immediate service. Conventional epoxy coatings can hold up release of coated equipment for up to three days, especially in cold climates.