

# DESALINATION AND LONG SERVICE LIFE

## Eden Excel Filter Vessels - Case Study

### THE SITUATION

Desalination is the process of removing salt from seawater to make it potable. This application is critically important in places with few sources of fresh water. One example where desalination has become a necessity are the resorts famous for gorgeous beaches and luxury accommodations located in the Caribbean islands. In 1998 the Westin hotel on the British Virgin Island of St. John selected Eden to support this mission critical need to better serve travelers from around the globe.

Operators of these high value facilities have expectations regarding the quality of equipment and redundancy in these remote islands. These exclusive locations are notoriously difficult to reach, making equipment failures and replacements extremely costly. Eden Excel offers the highest performance standards and exceptional longevity, key components for these remote, expensive projects.

### THE SOLUTION

A high-quality pre-filtration system is essential for reverse osmosis applications. Not just any material for pre filtration filter vessels will do - steel vessels are the most common but will inevitably corrode and fail when exposed to salt water, both directly and indirectly via coastal air. In a 2018 study by the Galvanizers Association, salt spray was shown to travel as far inland as 50 miles from the coast in corrosive amounts.

With these factors in mind, the system designed to provide fresh water to the Westin included an Eden Excel filter vessel. Eden Excel vessels are used for pre-filtration of seawater ahead of high-pressure pumps and expensive reverse osmosis membranes. The vessel will remove harmful sand, organic matter and other solids which would otherwise damage the reverse osmosis membranes, while increasing the life of the system and minimizing operating costs.

Eden Excel vessels have a design life of 25 years. They are constructed out of FRP (fiberglass reinforced plastic) made to the highest industry standards. Corrosion resistant, these vessels outlast metallic vessels by a factor of 3-4. Additionally, Eden Vessels are designed with better water flow efficiency, resulting in less power used to pull water through the filter vessel which means less strain on the system and lower electric bills.

### RESULTS

The Eden Excel vessels were installed on the resort property in 1998 and are still in use today. Aside from proactive filter change outs, no repairs or replacement parts have been required since commissioning.

When luxury resort desalination system designers need to ensure their multi-million-dollar system functions efficiently and will continue to run for decades to come, they integrate an Eden FRP vessel. As this example illustrates, utilizing the Eden Excel vessel was an investment in a critical process that continues to generate ROI decades after it was installed.

