



Bulkhead Repair at the Miami Seaquarium

The Miami Seaquarium called on Seawall Repair Network® member contractor Atlas Seawall Solutions to evaluate a unique issue that had developed inside their park after the last hurricane. The park uses seawater that's constantly pumped in from the ocean to fill all the tanks and aquariums to a very precise level, then the water is released through overflow spillways into the main discharge bulkhead, which then releases the water back into the ocean. The main discharge bulkhead works as a spillway, allowing the water to reach a certain height and then spill over the top. During the last hurricane event, the bulkhead became damaged and a 2' x 3' hole formed underneath the structure, allowing an enormous amount of water to escape from under the bulkhead rather than spilling over the top. This caused a big problem for the aquarium. With this much water escaping from under the bulkhead, the inlet pumps were not able to keep up and the water level inside the park dropped dramatically. This forced the grounds crew to run backup pumps to supply the park with more water.



Repair Materials

Atlas Seawall Solutions technicians on this job used SW-RP1 seawall repair material. SW-RP1 is environmentally safe and is certified to NSF/ANSI/CAN 61 standards for contact with drinking water.

Procedures

Once on-site, the crew began by trying to slow the leak by filling the 2'x3' hole with 20 lbs of oil-free Oakum. After the leak was slowed, they immediately started to introduce SW-RP1 into the oakum-filled hole in the bottom of the bulkhead. The SW-RP1 was catalyzed to the highest rate allowable due to the amount of flow that was still present even after filling with oakum.

Results

After 30 minutes and 35 gallons of SW-RP1, Atlas Seawall Solutions had the leak completely stopped. The leak flow rate before the repair was estimated at 5,434 GPM. The leak flow rate after the repair was estimated at 0 GPM. The total end-to-end completion time from the arrival of the technicians until the total leak flow stoppage was only 5 hours.