

# PVC PIPE *news*

When Water Quality Matters

## PVC Delivers

by Kara Mason  
Feature Writer  
Vinyl Institute

A city can require hundreds of miles of municipal piping. By this standard, the Newport Aquarium of Newport, Kentucky, with nearly 200 miles of piping, could qualify as a small city. The piping circulates one million gallons of water to support 7,000 animals and 500 different species. The health of every creature depends on the water that runs through the miles of piping. For this reason, the water quality must be pristine.

PVC (Polyvinyl Chloride or Vinyl) is the pipe of choice. Not only does it provide a clean mechanism of transport, PVC is strong and durable, easy to work with, and it has NSF certification for potability.

PVC is impervious to corrosion and can withstand the aggressive saltwater environment so common in aquarium facilities. Resident Engineer Andy Aiken of the National Aquarium in Baltimore, Maryland, explained that PVC and sea water rate 'excellent' on chemical compatibility charts. At the other end of the spectrum ('severe effect') falls metals. "Iron is completely out of the question," says Aiken. At the Newport Aquarium, some of the air conditioning units located above the saltwater tanks have had to be replaced due to corrosion. Several years ago at the National Aquarium, the tropical frogs kept dying. Water from the tank was sampled and traces of copper were found. It was then discovered that a copper pipe was being used to bring fresh water to the amphibians. The pipe was replaced with PVC.



Behind the scenes at Newport Aquarium, there is a lot of PVC pipe. Aquariums rely on PVC to protect their health sensitive aquatic life.



Newport Aquarium relies on PVC pipe to help make exhibits like this one possible.

PVC is highly resistant to bio-film. According to Husbandry Operations Manager, Jeff Gibula, of Newport Aquarium, 30 percent of the food for the entire aquarium goes to the penguins. This means lots of waste material. Even with such an environment, removal of bio-film has only been required once in the past seven years. When asked how often the PVC piping at the National Aquarium in Baltimore needed to be cleaned, Aiken replied, "The only cleaning necessary is on the outside of the pipes when the dust collects."

"If you've ever toured an aquarium, you see that space is a huge commodity," Gibula continues, explaining that aquariums prefer a piping material which can be easily configured; "With PVC, I can make any emergency repairs myself. Just run up to the hardware store, instead of relying on custom-made parts." The ease of working with PVC is one of the many reasons why the National Aquarium recently decided on using PVC over HDPE (High Density Polyethylene). The aquarium often has to make changes in the pipelines, 'cutting in' to add or subtract piping. According to Aiken, "It takes ten times as long on each joint when using HDPE." While HDPE requires the purchase of a large machine and training on how to use it, PVC holds a distinct 'workability factor' – a sentiment shared by both Aiken and Gibula.

PVC has proven to be an invaluable material within the aquarium world. It keeps the water clean and free of unwanted particles, defends against bio-film build-up, and can hold up against an aggressive saltwater environment. Its workability provides added appeal. Last but not least, PVC has proven its unwavering ability to keep aquatic life healthy and happy, which is the bottom line at any aquarium.

So the next time you visit an aquarium, remember that PVC pipe is the pipe of choice for ecologically sensitive environments.