

FORSTA FILTERS CASE STUDY: COOLING TOWERS

From criminal databases, to aluminum wheels, and apples, three case studies detailing the effectiveness of Forsta self-cleaning filters in facilities with cooling towers.

Case #1: F.B.I. CJIS Division: Clarksburg, WV



West Virginia state capitol building in Charleston, facing the Kanawha River. 126 miles from Clarksburg, which is located along the West Fork River and Elk Creek.



Forsta B2-90 model filter at the F.B.I. CJIS Division Facility. Filter is equipped with a 316L high porosity 100 micron screen.

The F.B.I CJIS Division's facility in Clarksburg, West Virginia is home to an array of services that are a lifeline to law enforcement agencies across the country. A reliably functioning cooling tower is essential to the everyday tasks carried out at CJIS.

The facility's Engineering Technician explained that each of the 1000 ton cooling towers at the facility collect bugs, bird nesting materials and dirt from a nearby landfill. "Our towers do not have sumps in them that hold water. The water coming from the towers goes into the Coldwells and is then pumped throughout the system (to chillers, heat exchangers, and chemical feed panels)."



Inside view of the Coldwell



CJIS cooling towers

Their Forsta B2-90 model self-cleaning filter is used to clean condenser water coming off of their Coldwells. It handles a flow of 150gpm at 75psi and at 75° F. The filter enters into a backwash sequence about once every three hours. The Engineering Technician said he was pleased with the performance of their Forsta self-cleaning filter. He offered that it has helped to keep the tower basins clean and he likes that the inline strainers do not need to be removed for cleaning. He added that before entering the Forsta self-cleaning filter the water had a lot of sand and dirt in it. The turbidity ran around 10 (NTU) after the filter was installed the turbidity is around 3 (NTU).

“Yes,” he says unequivocally. He would recommend Forsta self-cleaning filters to others with HVACR applications and added that they work better than the sand filters they have had in the past.

Case #2: Superior Industries International, Inc.: Fayetteville Plant, AR



Old Train Station, Fayetteville, Arkansas.



2x Forsta B6-180 model filters equipped with 316L high porosity 50 micron screens.

Superior Industries International, Inc. is one of the world's largest OEM suppliers of cast aluminum road wheels for the automotive industry. Superior operates five manufacturing facilities employing approximately 4000 people in the United States and Mexico that produce aluminum wheels for the major vehicle platforms of the world's leading automobile and light truck manufacturers.

Their Fayetteville plant in Arkansas needed a low-maintenance solution to remove and prevent further pipe scale debris from the open cooling tower. They needed to lessen their machine downtime due to water issues and improve their cooling ability.



Superior's two cooling towers on the loop serviced by their Forsta self-cleaning filters.

Capital Improvement Project Manager, Kyle Gunn explained, "I was handed this project and after having one of our other plants recommend Forsta, I did some research and was impressed with their track record and great product lines. Now both of our plants that use these filters have less water problems in our casting machines, meaning more production and less downtime."

The plant uses a total of three B6-180 model filters in parallel to filter the process and cooling water generated from their 5000gpm cooling tower. There is a main header (not pictured) that feeds the three pipes. Each pipe has its own filter and feeds a different set of machines. One filter is in a different location, due to space constraints. From the cooling tower, water flows to a pump, through the Forsta self-cleaning filters, and then to casting machines. They wanted to remove pipe scale and debris down to 50 micron. Gunn explained, "with aging pipes and cooling tower we wanted to stay ahead of any buildup."

Each of the plant's filters flows 350gpm of city water at 125-155psi at a temperature of 76°F. Filters perform a backwash sequence every 12 hours.

Gunn says he would definitely recommend Forsta Self Cleaning Filters to others.

Case #3: Central Washington Refrigeration, G&G Orchards Installation, Yakima, WA



Apple Orchards, Yakima, WA



Forsta M2-90 skid mounted filter equipped with a 316L high porosity 50 micron screen, 50gpm pump, & 230/460 3 phase motor.



Forsta compact skid mounted package includes: all stainless steel filter, motor, & controller.

G&G Orchards in Yakima, WA grows apples and pears. After the fruit is harvested it is stored in their packing house, which is equipped with controlled atmosphere rooms. In order to preserve the fruit's freshness, the controlled atmosphere room offers a reduced oxygen environment with increased nitrogen and a low temperature. The maintenance of this controlled environment is vital to ensure the quality of the fruit throughout the boxing and casing stages of shipment.

The cooling tower for this facility serves a pivotal role in the success of protecting the fruit.

The G&G Orchards filter receives cooling tower water from the holding tank drain. Dirty water comes out of the tank into the M2-90 Forsta self-cleaning filter and clean water is discharged back into the holding tank.

Randall Gidge with Central Washington Refrigeration, who installed the unit for the orchard, explains that he manually adjusts the duration of the backwash to optimize the cleaning cycle for his unique application.

He offered that the unit he installed saves on water blow down, maintenance to the tower, and chiller pans, and allowed the customer to rapidly see the difference in the water quality inside the holding tank. Gidge's plan is to utilize the M2-90 skid unit as a portable system that will be moved to service other tanks, then moved back and forth on a scheduled maintenance rotation.

Conclusion:

In each unique HVACR application, Forsta self cleaning filters improved cooling tower water quality by removing suspended particulate. The result in all three cases was improved facility operations, reduced maintenance, and greater reliability.

About Forsta Filters Inc.

Forsta Filters is a California-based company specializing in the design and fabrication of self cleaning water filters. Forsta's product line serves a range of applications throughout municipal, industrial and agricultural sectors with markets including: HVAC, Petrochemical, Pulp & Paper, Sugar Processing, Metal-Works, Desalination, Plastics, Food Processing, Power Generation, Car Wash, Golf, Turf & Landscape, Agriculture, Greenhouse & Nursery, Wastewater, and Drinking Water.

Forsta offers expert filter design, fabrication, research and development, technical support, installation and startup, servicing, and onsite training.

For more information about Forsta's full product line, technology and applications visit:
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