



Preventing Sediment Buildup and Malfunctioning HVAC Systems On Campus with Filters



THE CHALLENGE

In 2014, the University of San Diego began experiencing HVAC issues in several buildings across campus. Sediment buildup caused cooling coils to clog, which prevented air conditioning units from operating. In order to restore proper HVAC functionality, technicians were required to manually back flush coils on the roof of each affected building to remove the sediment. This process took several hours, putting a significant strain on the maintenance teams' time and resources. As summertime temperatures rose in classrooms and facilities across campus, a rapid solution was needed to deliver comfortable temperatures to faculty, staff, and students.

THE SOLUTION

The Degheri Alumni Center, which houses a variety of administrative offices and conference rooms, was identified as the most problematic building on campus. Its size – three-stories and 28,000 square-feet – and location made it most prone to sediment buildup. With a recommendation for Pall Water's filter bags, the University of San Diego's maintenance team met with Pall Water to explore which products would solve the University's challenges.

After evaluating many options, Pall Water's 10 micron Polyfold filter bag was selected due to its strength and reliability. As an added bonus, the bag filters are easy to remove, allowing the maintenance team to positively identify that sediment buildup was the cause of these challenges.

“ We called upon Pall Water to stop sediment buildup from clogging our HVAC systems and the University of San Diego got exactly what we asked for as Pall Water's Polypropylene Microfiber bag filters solved our problem. The technicians absolutely love Pall Water's filters as they no longer waste several hours cleaning out clogged coils on the roof and our building occupants are pleased that they no longer have to file work orders complaining about the lack of air conditioning in the Degheri Alumni Center.”

Steve Glover, Facilities Engineer, University of San Diego

Immediately, the maintenance team noticed the positive impact of Pall Water's solution, and could see the larger particles collected in the filters. After a few months, the University's maintenance team and Pall Water technicians decided to move down to a 5 micron Polyfold filter bags to further optimize results and reduce the amount of contaminant bypass. The strength of Pall Water's filter bags has been noticeable since installation. The filter bags are capable of handling flow rates of 200 GPM, twice the amount of competing solutions.

THE RESULTS

Most notably, the utilization of Pall Water's Polyfold bag filters has greatly reduced the strain on the University of San Diego's maintenance team. Technicians are no longer required to spend half a day on the roof of the Degheri Alumni Center every 4 – 14 days as needed. Now, technicians simply swap out Pall Water's filters every 1 – 2 months, an exercise that only takes 10 minutes. The use of Pall Water's filter bags **has saved the University dozens of man power hours per week.** Maintenance workers are now freed up to perform other activities beyond clearing out air handlers.

Beyond saving time and resources, the University's technicians are now able to proactively determine when filters are nearing capacity. A gauge and daily measurements allow technicians to replace filters before the sediment buildup impacts building temperature. Before deploying Pall Water's filter bags, the University's maintenance team had no insight into when buildup was occurring. Technicians had no other option than to be reactive once work orders were filed by the building's occupants. By employing a gauge to track the useful life of filter bags, the University's maintenance team has solved an inconvenient and time-consuming problem. Building occupants are no longer required to file work orders related

to the Degheri Alumni Center's air conditioning issues. Given the filters' ability to solve the University's problem, it is considering implementing the filters in other buildings across campus.

The ability of Pall Water's filter bags to solve temperature control challenges resulting from sediment buildup has also improved equipment lifetime. With all of the buildup on coils within the HVAC systems, the equipment's heat transfer was compromised, adding unnecessary wear and tear that would have impacted the equipment's lifecycle. Following the implementation of Pall Water's filters, the HVAC systems are able to consistently run at lower speeds while maintaining the correct temperatures. This has undoubtedly resulted in energy savings as the HVAC systems were previously operating at much higher levels.

THE BENEFITS

Pall Water's Polypropylene Microfiber bag filters solved the University of San Diego's temperature control issues, caused by sediment buildup. Pall's solution resolved an extremely time-consuming and inconvenient issue for the University's maintenance team. Overall, the Polypropylene Microfiber bag filters provided the following benefits:

- Prevented sediment buildup that clogged HVAC systems
- Resolved time-consuming issues for maintenance team
- Extended lifecycle of HVAC equipment
- Resulted in energy savings



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