Leopold Performance Filters

DESIGNED FOR PERFORMANCE, BASED ON PERFORMANCE

LEOPOLD

a xylem brand

Performance-Based Design and Engineering Goes Into Every Leopold Filter

The Leopold performance filter is a rapid gravity flow granular bed filter designed and engineered to achieve specific performance requirements of individual municipal and industrial water treatment plants. It is a filter built for performance, based on performance.

A Leopold filter is planned based on upstream and downstream process conditions. Each aspect of the Leopold filter — filter media, backwash, controls — is tuned to achieve maximum rate of filtration at the longest possible cycles. But more importantly, Leopold filters are designed and engineered to achieve optimum net production per square foot per day at high filtration rates.

Single-Source Responsibility

Leopold single-source responsibility means we put it all together — media design, backwash design and controls — for successful filter operation and performance in any of a variety of filter plant settings — with sole accountability for successful integration with upstream and downstream processes.

Our Gold Tag™ Service means we'll be there for you long after the filter is put in service. Leopold stands behind its products and works in partnership with its customers to ensure your Leopold filter performs as well tomorrow and the day after tomorrow as it did the day it was commissioned.

Best and Most Cost-Effective Layout

The Leopold filter can be arranged with a front flume, center flume, or H flume to achieve the best and most cost-effective layout. There's even a Leopold flat-bottom flume available that allows substantial cost savings in excavation and support the magnitude of these savings can be greatly amplified where poor subsurface conditions, such as rock or groundwater, exist.

Designing Performance Into Existing Filters

Rehabilitating an existing filter? Chances are we've already rebuilt one just like yours. If not, we can simulate your filter arrangement in our Product Development Center and demonstrate how your rebuilt filter will work.

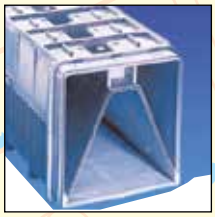
Leopold-rehabilitated filters adapt your existing structure to current technology. Leopold custom-engineers the filter to add air scour for improved backwash performance, with air headers and backwash troughs placed for optimum arrangement. The filter bed is optimized through media selection and bed composition, and the use of our lower profile Type SL® underdrain and I.M.S® cap instead of support gravel for deeper media beds in shallow filter box profiles.

Conventional Wisdom vs. Reality

Loading rates, media design and backwash design are often largely determined by the designer's experience with similar applications. And no one has more experience with rapid gravity granular bed filters than Leopold.

Leopold also tests its filters. In our Product Development Center, we can set up a test lateral run and demonstrate, full-scale, the head loss and flow distribution during backwash with your flume configuration.

The Complete Leopold Filter

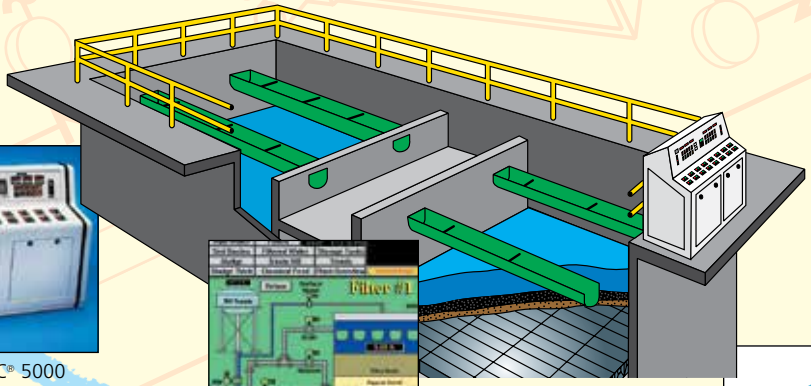


Leopold Universal Type S® and Type SL® Underdrain provide superior distribution of water and air for effective media backwashing in every Leopold filter design.

Leopold I.M.S® (Integral Media Support) cap is the porous plate alternative that eliminates the need for support gravel, resulting in more media depth.

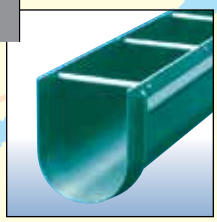
Leopold Gold Tag™ service means experienced technicians will be available for supervising the proper installation of your Leopold filter, then provide follow-up assistance through calibration and commissioning, training, startup, process evaluation, and troubleshooting.

Leopold Engineered Filter Media anthracite is the lowest uniformity coefficient (UC) anthracite filter media available, delivering more efficient solids loading.



Leopold® AFC® 5000 filter controls provide independent distributed, filter-side control, including the backwash sequence.

FilterView® SCADA software, part of the Leopold Filterworx® Automatic Control System, monitors and controls Leopold filter systems and features standard communications protocol that allows easy integration into most other plant DCS and SCADA systems.



Made of durable fiberglass-reinforced plastic (FRP), Leopold wash troughs are available in a wide variety of carrying capabilities for any filter design requirement.

Media Designed to Clean the Water

The filter media in a Leopold filter — media quality, bed composition, bed depth and grain size distribution — is designed according to filter configuration, raw water quality, pretreatment and desired filtrate quality. Leopold filters employ Engineered Filter Media anthracite, the lowest uniformity coefficient (UC) anthracite filter media available. Leopold Engineered Filter Media anthracite typically produces consistent improvements in turbidity removal due, in part, to more efficient solids loading. Plus, low-UC media produces smaller changes in effluent turbidity during periods of peak influent turbidity.

Leopold filters are designed according to loading rate, run time, and head loss. Properly designed to upstream and downstream processes and filtrate quality requirements, Leopold filters can help you meet the new water quality regulations.

Controls Designed for Successful Operation and Optimum Performance

Leopold filters include a complete filter control package to keep a constant watch on the essential parameters of the processes in the filter plant — both upstream and downstream. These automatic control systems continuously monitor filtrate quality to ensure that it meets regulatory requirements. They continuously monitor the condition of the filter media to ensure optimum
filtration. And they automatically adjust flow rates to compensate for customer demand changes.

By continuously monitoring water quality and filter condition, Leopold filter controls can automatically initiate and control the backwash sequence. This means the filter is cleaned when it needs to be cleaned, as frequently or infrequently as changing conditions require, and as long as necessary to clean the media. Filter run times and product quality are optimized at the lowest possible cost. And by keeping the filter media well-conditioned, the life of the filter can be lengthened.

By automatically sequencing backwash properly, Leopold filter controls help avoid surges and potentially disastrous upsets which can damage a filter system and cost money.

Backwash Designed to Keep the Media Clean

Leopold filters employ an upflow water wash with full bed fluidization. To ensure thorough cleaning of the filter media, Leopold filters also employ air scour. Air scour provides very effective cleaning action as the result of higher shear forces in the media bed and abrasion between grains.

Both the backwash water and air scour are introduced into the bottom of the media bed through an underdrain system featuring advanced Leopold Type S® technology. Leopold Type S technology underdrain is designed to provide uniform distribution of wash water and air to clean every corner of the filter without media upset.

Leopold Universal Type S® and Type SL® underdrain deliver a broader airflow range — from 1 to 5 scfm/ft^2. Air stability is improved with all orifices providing uniform and continuous airflow. And water maldistribution is lower — less than 5 percent total.

Quality Assurance

All materials used in Leopold filters that come in contact with the water meet National Sanitation Foundation (NSF) Standard 61 Drinking Water System Components — Health Effects. Media used in Leopold filters meets American Water Works Association (AWWA) Standards for Filtering Material (B-100).

Learn More About the Leopold Performance Filter

Additional literature is available describing the technology components of the complete Leopold performance filter. Plus we can show you how a Leopold filter package can deliver guaranteed performance and process results.

To learn more, visit www.xylem.com/treatment

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