

Breaking Barriers: Crafting Excellence in Beer Filtration with Global Filter



THE CUSTOMER

As one of the oldest breweries in the Czech Republic, Pivovar Strakonice 1649 combines traditional craftsmanship with modern brewing techniques to produce high-quality beers. With a focus on ensuring exceptional taste and extended shelf life, the brewery faced a critical challenge when a key filtration product was discontinued.

THE CHALLENGE

For decades, Pivovar Strakonice relied on diatomaceous earth (DE) filtration, followed by Trap filtration, to ensure the clarity and quality of their beer. This traditional method employed a mixture of diatomaceous earth with cellulose or stabilizing agents, followed by safety filtration to capture any DE escaping due to pressure surges, operator error, or equipment malfunction.

However, when their previous supplier ceased production of compact filter elements that provided depth filtration approaching 0.45 µm absolute selectivity, the brewery faced a dilemma. They needed a reliable alternative to:

- Maintain consistent beer clarity and a shelf life of at least three months (or six months for exports).
- Integrate with their DE filtration system and bottling process.
- Adapt to the brewery's output capacity of 110 hl/h.

THE SOLUTION

Global Filter, a long-standing partner of the brewery, proposed a tailored solution to address the unique challenges posed by the discontinued filtration elements.

Optimized Precoat Filtration:

The DE filtration process was fine-tuned by collaborating with the chief brewer to develop an optimal mixture of diatomaceous earth and cellulose. This adjustment ensured perfect filtration, sufficient capacity for bottling needs, and reduced operational variability caused by seasonal changes in malt and hop quality.

Final Filtration System:

Two AFS 24-40 housings equipped with Global PP-Series polypropylene pleated filter cartridges were installed for final filtration before bottling.

The benefits of the PP-Series include:

- Absolute rating of 0.45 µm (Beta 5000, 99.98% efficiency).
- Output per 10" cartridge: 114 l/h.
- Sanitation compatibility: Standard hot water sanitation and chemical cleaning using 2% NaOH and 0.5% Persteril.

Longevity:

Cartridges for Trap filtration typically achieve a lifetime from 1,000 to 4,000 hl per 10" installed cartridge with backwashing, while final filtration cartridges achieve 500–800 hl per 10", translating into 50,000–70,000 hl per filter size in this system.

System Design for Future Flexibility:

The system allows for the integration of Global Filter GFPS 0.45 µm membrane cartridges for breweries requiring a shelf life of six months. These cartridges can undergo integrity testing, ensuring error-free filtration for export-grade beer.

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THE RESULTS

Performance Improvements:

- Achieved 0.45 µm filtration efficiency, ensuring consistent clarity and shelf stability without pasteurization.
- Maintained beer shelf life for months, even for non-pasteurized products.

Cost Savings:

- Labor costs reduced by over 10% through easier cartridge replacements.
- Waste volume reduced by 90% compared to the previous filtration method.

Operational Benefits:

Simplified supply chain logistics:

Global Filter maintains a reserve stock of elements for urgent brewery needs, while storage space for spare elements was reduced by 90%. Enhanced operational efficiency with smooth integration into existing DE filtration and bottling processes.

LOOKING AHEAD

By combining decades of expertise in filtration with a deep understanding of brewery operations, Global Filter delivered a solution that not only met the brewery's immediate needs but also positioned them for future success. This project underscores Global Filter's dedication to supporting the beverage industry with innovative, adaptable, and technically advanced solutions.

TESTIMONIAL

Dušan Krankus, Director of Pivovar Strakonice 1649, shared:

"After the investment in microfiltration of cask beer in January, we also invested in microfiltration of bottled beer in September. A set of 2 filters was supplied by the Global Filter based in Strakonice. The filter contains 24 filter cartridges with a porosity of 0.45 micrometers through which the beer flows just before bottling.

It follows on from the initial DE filtration in which the stainless steel candles are pre-coated by DE, which serves as a filtration layer. Thanks to this double filtration, we do not have to pasteurize our beer, yet it has a shelf life of many months."



Picture of the two AFS vessels implemented at the Pivovar Strakonice 1649 brewery.

Global Filter is ready to collaborate with you to enhance your products and streamline the processes that fuel your success.