

3M Separation and Purification Sciences Division

3M™ High Flow Series Filters increase efficiency and reduce costs for European brewery.

The problem

A leading European brewery was planning a major upgrade to its water system. The brewery produces over 500,000 litres of beer a day, so careful planning and design were required. Also, since beer is usually greater than 90% water, careful preparation of this key ingredient was mandatory.

The brewery previously employed a filter housing containing 15 conventional 2.5" (63.5mm) diameter, 40" (1016mm) long filters. While this filter system was sufficient in removing particles in the water, it was cumbersome to change the filters on a frequent basis, and the system was unable to provide a high water flow rate at peak production periods without suffering significant differential pressure build up.

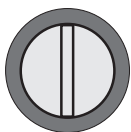
The solution

As companies and government agencies are building ever-larger water treatment plants for both industrial and commercial use, demand for high capacity fluid filtration is growing.

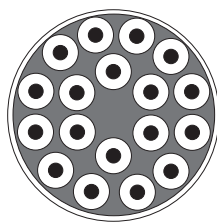
In response, 3M has developed the High Flow filtration system – an extremely efficient, high-capacity filter that is easy to use and saves time, money and space for customers. The system features a compound radial pleating design that efficiently arranges a significant amount of filter media surface area in a compact cartridge. The large diameter core allows a flow rate of up to 113m³/hr through a single filter element and the compact filter housing is up to 50% smaller than filter housings for conventional 2.5" (63.5mm) outer diameter cartridges. The cartridge also has an ergonomic handle that makes installation and filter changes easy.

3M worked with the engineering firm contracted by the brewery to include parallel 3M High Flow filter housings prior to the new RO filter in the water system.

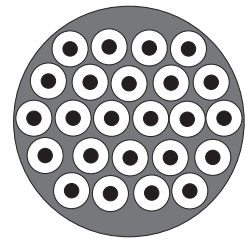
80 m³/hr system



3M™ High Flow series filter system
1 cartridge in a 8.6" (218.4mm)
diameter housing



2.5" (63.5mm) pleated cartridges
18 cartridges in a
14" (355.6mm) diameter housing



2.5" (63.5mm) depth cartridges
24 cartridges in a
16" (406.4mm) diameter housing

3M™ High Flow Series Filter System vs. conventional 2.5" (63.5mm) cartridge systems

The result

Installing the 3M™ High Flow filter system has cut maintenance time at the brewery by 90% and reduced the cost of replacement parts and filters. In addition, the 3M system provides the potential for increased water flow capacity of up to 60%.

The lead brewery Engineer on the project commented: “The system supplied by 3M has provided significant advantages for us. It has ensured that we have continuous high-efficiency filtration to protect very expensive reverse osmosis membranes.”

“This coupled with cost savings on consumables and the opportunity to accommodate a future increase in water requirements meets all the criteria for the adoption of a new technology installation within the brewery.”

Get in touch

Contact us to find out how 3M could help you save on the true cost of filtration in your brewery and help you create and maintain your unique tasting flavour. Or, if you have a complex process problem that requires expert help and would like to schedule an appointment with a 3M Application Engineer, send us a message at 3M.co.uk/foodandbeveragecontact or www.3Mireland.ie/foodandbeveragecontact.

Application engineering

The cornerstone of 3M's philosophy is service to customers, not only in product quality and prompt delivery, but also in validation, application support and in the sharing of scientific information.

Our Application Engineering (AE) group is a market-orientated group of scientists and engineers who work closely with customers to solve difficult separation problems and aid in the selection of the most effective and economical filtrations systems. 3M Application Engineers routinely provide end users with:

- ▶ Validation and regulatory support
- ▶ Extractable and compatibility analysis
- ▶ Filter systems optimisation studies
- ▶ 3M™ 101 Series Integrity Testing Device

Important notice

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