

## Peristaltic pump quenches brewery's thirst

Anheuser-Busch InBev UK's Magor Brewery, in Monmouthshire, South Wales, says it has installed six direct-coupled peristaltic hose pumps in place of previously failing piston pumps.

Paul Evans, tech services first line manager at the Magor Brewery, says that the earlier conventional piston pumps were threatening quality by endangering the beer filtration process.

He explains that they were being used to dose kieselguhr slurry to form a bed on a plate and frame filter, but unreliability was leading to a significant opportunity to introduce dissolved oxygen (DO) into the beer.

"Even the slightest traces of DO can change its flavour, making it taste stale. This can be catastrophic," he says.

"Unfortunately, the stainless steel non-return valves on the discharge side of our piston pumps began to stick, due to the corrosive nature of the kieselguhr slurry. As a result, we would end up maintaining or replacing the pumps, which would inevitably expose the beer to the atmosphere."

With three filter mains on site, InBev decided to trial an SPX25 peristaltic



pump from Watson-Marlow Pumps. "The peristaltic operating principle intrigued us, because it seemed there would be no way to introduce oxygen into our process," comments Evans. "However, the proof is in the pudding, so we introduced an SPX25 model to one of our filter mains."

The SPX25, which is based on a rugged hub with twin-bearing rotor at its core, combines the advantages of bare-shaft construction with those of a

close-coupled pump. The pump bearings absorb the forces in the pump centrally, placing no load on the gearbox bearings, which means no coupling, no alignment and no heavy-duty base plate – resulting in reduced installation time, less maintenance and lower costs.

Trials were completed with flying colours, so InBev bought that pump, along with two more for its other filter mains. And such has been the success that the company has now acquired a further three peristaltic pumps for use in a different operation on a similar application.

"The pumps [on the filter mains] are linked via an inverter to our PLC using a SCADA [supervisory control and data acquisition] interface, so that we can ramp the speed up and down as required," explains Evans.

"We also find the running signal to be extremely useful, so that, if we come anywhere close to the 2,000 hours recommended by Watson-Marlow, we can change the hose as part of a planned and preventative maintenance schedule."

## Infrared helps Eurobond handle cold steel

Carbon medium wave infra-red equipment is helping Eurobond to improve its adhesive processes for structural panel manufacture in cold weather.

By heating the steel strip at its Cardiff factory, bonding between two steel layers and an insulating core takes place at the desired reactivation temperature.

Craig Cheshire, project engineer at Eurobond, explains that, in manufacture, adhesive is applied to top and bottom steel strips before rockwool is introduced to be bonded in a continuous process.

To ensure optimum bonding, says Cheshire, the adhesive must be reactivated and applied at a specified temperature. In warm weather, this causes no problem. However, as the steel coil is stored outside, in the winter



months it needs to be heated.

After rejecting an open gas flame, Cheshire investigated the possibilities of infra-red and, following tests carried out at the Heraeus Noblelight applications

centre, a 117kW carbon medium wave infra-red system was installed.

The equipment consists of two 58.5kW modules, one heating the underside of the upper steel strip and the other the top surface of the bottom strip.

Pyrometers have been fitted before the adhesive applicator, to monitor the sheet temperature, and 4–20mA closed loop control feedback signals then provide stepless regulation of the infrared emitters. Those ensure a temperature rise of up to 40°C at the steel strip surface, at feed rates of 12m/min.

"The new system has now ensured that we have a better adhesive bond in cold weather, and this is demonstrated by the reduction in scrap levels and a general overall quality improvement," states Cheshire.