



Pumping of latex agglomerate

Polimeri Europa is one of the major world producers of elastomers at their plants in Hythe and Grangemouth, United Kingdom.

For years, the latex agglomerate used during production had tended to clog in the existing centrifugal pumps causing them to overheat and leak. Despite a regular maintenance schedule of stripping, cleaning and rebuilding the pumps and re-packing the glands, seizures would still occur each month, sometimes resulting in the failure of a shaft or bearings. The consequence was unplanned downtime and disruption to critical stages of the production process.

Polimeri Europa commenced a search for a pump with low levels of cohesion to avoid the latex build-up. In addition they were looking for a robust design with specialised mechanical seals to minimise pump seizures on the process side. No standard products were identified as being suitable and so Polimeri Europa invited a number of ISO9001 accredited pump suppliers with proven track records to propose how they could resolve the problem.



Scalloped and electro-polished impeller

Bespoke design

Amarinth were selected for their ability and willingness to work with Polimeri Europa on optimising a design which would include special features outside of their standard catalogue. The design parameters were for a pump that could run for some three weeks before requiring any maintenance.

The base pump chosen was an N-series which included a removable front suction cover enabling quick access for cleaning. A scalloped impeller was specifically designed to minimise clogging and an electro-polish was applied to the back-plate and impeller to create low cohesion surfaces. Finally a special mechanical seal was designed to contain the latex agglomerate.

Reduced maintenance

The new pumps were delivered on-time and are meeting design expectations on this very demanding application. Reliability has improved by a factor of 15 and a quick internal jet-wash is all that is often needed. Previous pumps required cleaning and re-packing every few days, or even daily during difficult running conditions, a process that took 6 – 8 man hours for each pump. The resultant cost savings in parts and labour mean that the pumps will pay for themselves in just nine months.

Continuous design enhancements

The benefits of an electro-polished surface finish have been firmly established and research is now underway into how to make this process more cost effective for the next phase. Minor profile modifications will also be included, in particular to form an open wedge shape on the back of the impeller blade webs to further enhance their self-cleaning ability.

Polimeri Europa has now brought additional pumps on-line and is working with Amarith to enhance existing pumping solutions in other applications.



Polimeri Europa is a petrochemical company wholly owned and controlled by the Italian energy corporation Eni SpA. Founded in 1926, Polimeri Europa has a turnover of Euros 5.4 billion and employs over 6,500 staff. Using a range of proprietary technologies and state-of-the-art production systems, the company produces basic chemicals, polyethylene, elastomers and styrenics for many of the world's leading brands.

The United Kingdom is home to production plants as well as research and technical service operations. These facilities are located at Hythe and Grangemouth and employ some 250 staff.



"We are delighted with the original thinking and design work undertaken by Amarith in developing a pump tailored to our demanding application. They have successfully overcome the issues we have faced for the last 20 years of clogging when pumping our latex agglomerate. These new pumps were delivered on-time and have performed to specification, leading to a significant reduction in maintenance costs and eliminating expensive unscheduled stoppages."

Robert Pearce
Project Manager