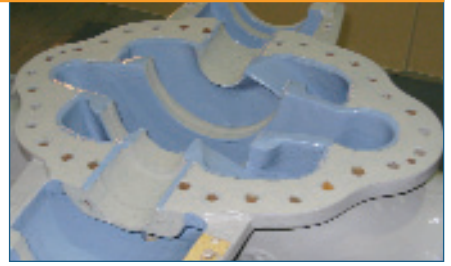


The rising cost of energy has led to more companies searching for technologies to improve operational efficiency



IMPROVING PUMPING EFFICIENCY

Belzona Polymeric Limited, a manufacturer of polymer repair composites and industrial protective coatings has the solution for improving the operational efficiency of pumps by the application of a hydrophobic coating system.

Considering that the transfer of fluids accounts for the largest single use of energy worldwide with millions of litres pumped from one location to another every second of everyday worldwide, it is therefore understandable that all industries would benefit from any solutions aimed at increasing pumping performance.

Belzona has, of late, seen a dramatic increase in the use of Belzona products for pump restoration. According to Jérémie Maillard, Business Development Engineer, and pumping industry specialist for Belzona, the number of repairs to damaged pumps and/or components has nearly doubled in the last two years. He commented, "Many companies are working to minimise running costs by exploring alternative means of tackling energy consumption. Meanwhile, more and more pump manufacturers are considering coating new equipment with Belzona 1341 Supermetalgilde due to its proven economical benefit."

A major problem is increased turbulence caused by the detrimental effects of erosion corrosion. This leads to rough and pitted surfaces which in turn, increase drag, therefore reducing the efficiency of the system.

David Blackwell, Engineering Director for Belzona explained "It is not unusual for a pump which has been in service for a number of years to be operating at 15-20% below its design efficiency, due to the effects of erosion corrosion. By rebuilding and protecting these damaged areas with a Belzona corrosion and erosion resistant material it is possible to not only restore flow rates, but also increase the

efficiency level of the pump to beyond that when it was newly installed."

Belzona's rigorous research and development programme spanning decades has further advanced polymer technology in the area of efficiency enhancement. The Belzona solution has been specifically designed as a hydrophobic, smooth surface coating with low surface energy and erosion resistant fillers. The material allows an ultra smooth surface that reduces turbulent flow, thereby increasing efficiency.


The testing of Belzona 1341 Supermetalgilde was carried out under strict independent laboratory conditions utilising the most up to date fluid flow test facilities of the National Engineering Laboratories (N.E.L.) who, as part of the UK's Department of Trade and Industry, represent the most comprehensive pump test facilities of their type available anywhere in the world.

In this case, the test vehicle chosen was a single stage, end suction centrifugal pump with 10 inch suction and discharges branches. The pump, in uncoated

condition, running at 1300 rpm, was found to deliver 875m³/hr at 26.5 meter head with an overall peak efficiency of 83.5%.

Testing of the same pump coated with Belzona Supermetalgilde gave a 6% increase at peak efficiency, giving a power reduction of 5.1kW at duty point. Assuming a 5,000 hour operating cycle/annum, the power saving over this period would amount 25,400kW.hr.

Belzona 1341 Supermetalgilde, through independent testing, has been proven to increase pump efficiency across its operational range while maintaining its original head/flow characteristics.

By repairing worn and damaged equipment, or protecting new pumps, the Belzona 1341 Supermetalgilde system will have an immediate effect on performance and operating costs giving many years of power savings in conjunction with high performance erosion corrosion protection. 

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