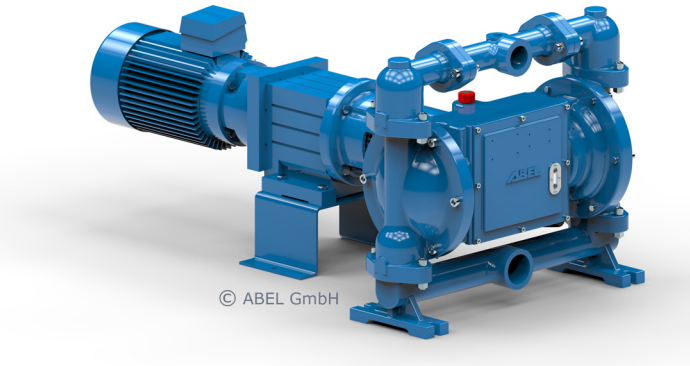
ABEL Pumps **Case Study -** Silica Flour

EODD pumps available through SANDPIPER & ABEL

Application Profile: Improvements in Liquid-Solid separation ABEL model EM electric diaphragm pumps for recessed plate, Filter Press Feed

Industry: Silica and Silicate products

Product Produced: Silica Flour



A well known materials company in Maryland, processes silica flour into a variety of Silica and Silicate products used in the Rubber, Paper, Chemical and Dental markets.

As part of the silicate process, a wastewater stream is generated containing unreacted silica, which is reusable along with waste solids. The effluent treatment system employs a variety of filters to separate the solids from the liquid streams. One of the filters was an aged vacuum belt filter used to separate solids and recover silicate water for reuse in the process. The resultant filter cake solids were then further processed as a waste stream.

After a review of the separation system, the decision was made to replace the vacuum belt press with a recessed plate type filter press. The filter press, which is a known technology for the plant, would provide more effective separation, yield improved cake dryness, and therefore maximize the amount of silicate water recovered for reuse.

The new filter press system would include two diaphragm pumps. This company has typically used Air Operated Diaphragm (AOD) and centrifugal pumps within the process. All pump technologies were considered and evaluated. In conjunction with the press OEM, diaphragm

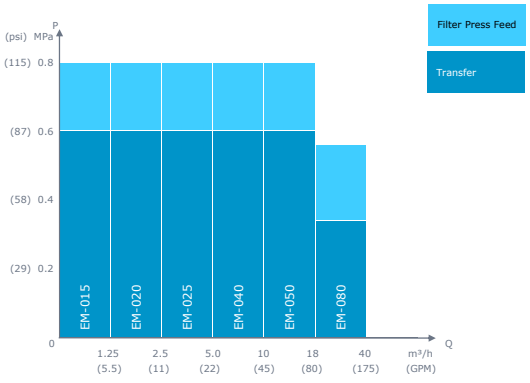
ABEL EM-50 electric diaphragm pumps for filter press feed.

pumps were selected as the best applied technology for the process. However, air usage and the subsequent cost were also of concern, so the customer explored the possibility of using electric driven diaphragm pumps in lieu of the AODs. As a result, ABEL model EM pumps were chosen and installed in the process.

A year after start-up, the ABEL model EM electric diaphragm pumps perform well with minimal wear part replacement. Along with the recessed plate filter press, the EM positive displacement pumps remove nearly two times more silicate water for reuse than the previous belt press system (I.e. an improvement of the filter press cake from 44% solids by weight to 72% solids by weight). The new system also promotes a cleaner environment around the process equipment, free from uncontained mud.

PERFORMANCE CHART

EM – Electric Diaphragm Pump



Learn More about ABEL EODD Pumps

CONTACT US

The ABEL Advantage

- Best energy efficiency for filter press feed systems
- Controllability with VFD
- Long lasting, wear resistant diaphragms and elastomers
- Designed specifically for abrasive slurries
- High reliability
- Low maintenance and operating cost
- Superior service after sales support

Bevel gears with vertically mounted electric motors provide space saving installation.

800 North Main Street
Mansfield, OH 44902

419-524-8388

sandpiperpump.com