FLOMIX

FLOMIX™, Optimise Sludge / Polymer Mixing

In wastewater treatment the present trend is to enhance the dewatering stage to minimize dry sludge volumes (increase cake dryness) that will ultimately be disposed of.


FLOMIX™ Sludge/Polymer mixer

In line with this trend, SNF Floerger has developed a wide range of cationic flocculants in crosslinked emulsion form. This family of products provides extremely cohesive flocs, excellent drainability and higher dryness.
While providing improved performance in the plant, cross-linked polymers will often need to be dosed at a higher level: 1.5 to 2.0 times that of standard linear polymers. To ensure the optimum addition rate of cross-linked polymers while maintaining performance, SNF Floerger has developed a variable-speed in-line dynamic-mixer (0-1500 rpm). This FLOMIX unit is compact and very easy to install. It will optimize the mixing between the sludge and the polymer by simply adjusting the mixing speed.

Advantages

- 10 to 20% reduction in dosage
- higher drainage speed
- higher dryness
- higher dried-sludge output.

Application

The mixing speed is function of the dry content of the sludge and the concentration of the polymer solution. Based on previous industrial tests the optimum speed is often between 800 and 1200 rpm.

FLOMIX is most effective where the sludge is difficult to dewater, such as biological sludge on a belt filter and using a crosslinked flocculant (FLOPAM EM 4 BD/TBD). FLOMIX is also very useful on centrifuge applications where usually the dosages are always high (>20 kg/dry tonne).

Setup

The FLOMIX system setup is quite simple. Install FLOMIX between the sludge pump and the dewatering equipment. For the best performance, polymer injection must be made just before FLOMIX, therefore an injection point has been installed between the flange and the mixer's blending tank.

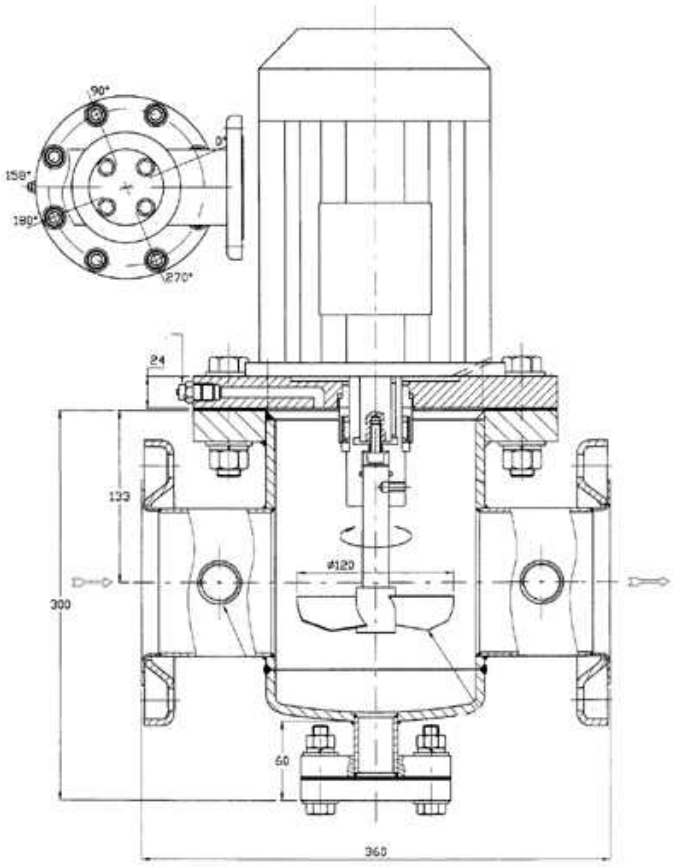
Availability

SNF Floerger has 2 FLOMIX units in stock at Andrézieux. These FLOMIX units are available on request for on-site evaluation tests. The average lead time necessary to fulfill a firm order is 20 days.

On-site evaluation

For more information, please contact Frédéric PONCET or any other member of the SNF Technical Assistance team.

FLOMIX™ : Mixer Diagram



Speed of mixing : 0 to 1500 rpm

DN 80 or DN 100 with flanges

Size for DN 80
Length = 360 mm
Height = 600 mm

Weight for DN 80
50 kg

Example n°1 : St Pierre de Gaubert WWTP, extended aeration biological sludge at 21,4 g/l, gravity belt.

Conditions	Product	Sludge Flow m3/h (kg/h)	Polymer Flow l/h (kg/h)	Consumption of active content (kg/dry tonne)	Dryness (%)
Without FLOMIX	FLOPAM EM 640 TBD	6.5 (139)	600 (4.3)	15.5	5.9
With FLOMIX	FLOPAM EM 640 TBD	6.5 (139)	600 (4.3)	15.5	8.2
With FLOMIX	FLOPAM EM 640 TBD	8.25 (176)	600 (4.3)	12.2	7.5

Customer comments (in this case, Institute of Filtration and Techniques of Separation)
An important gain in dryness for the same consumption. This improvement in the dryness is due to a higher drainage speed.
Possibility of reducing consumption by 40% while still meeting the original dryness specifications.

Example n°2 : Fraserbourg WWTP, sludge at 60 g/l, Belt filter press.

Conditions	Product	Sludge Flow m3/h (kg/h)	Polymer Dosing Speed (Hz)	Sludge Squeezing	Dryness (%)
Without FLOMIX	FLOPAM FO 4490	8 (480)	42	Yes	20%
With FLOMIX	FLOPAM FO 4490	8 (480)	42	No	22%
With FLOMIX	FLOPAM FO 4490	8 (480)	30	No	20%

Customer comments :
Improved polymer/sludge mixing
Noticable gain in dryness.
Possibility of reducing consumption by 30% while still meeting the original dryness specifications
Reduction of the sludge overflow on the sides of the belt filter press (sludge squeezing)
Reduction of the costs in cake removal.