

flocformer for advanced floc preparation

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FlocFormer, is an internationally patent-protected flocculation unit to enhance dewatering characteristics of sludge.

Producing pelletised flocs making water in the voids and pores more accessible. This means that water is more easily released leading to quicker dewatering.

drive and adjustment
of inner cone

outlet

cone-shaped stirring
reactor with inner cone

rapid-mixer/polymer

inlet



benefits...

- ▶ Increased downstream performance and reliability of belt thickeners, centrifuges and filter presses
- ▶ Improves quality of reject water leading to lower solids load within works return liquors
- ▶ Reduced OPEX by significant reduction in transport costs and polymer consumption
- ▶ Enhances sludge dewatering characteristics leading to increased %DS content
- ▶ Simple installation and integration into existing processes
- ▶ Conditioning of floc type and make-up, bespoke to the application
- ▶ Robust engineering to cope with sludge treatment environment
- ▶ Versatile and adaptable off the shelf product for new or existing applications

how does it work?

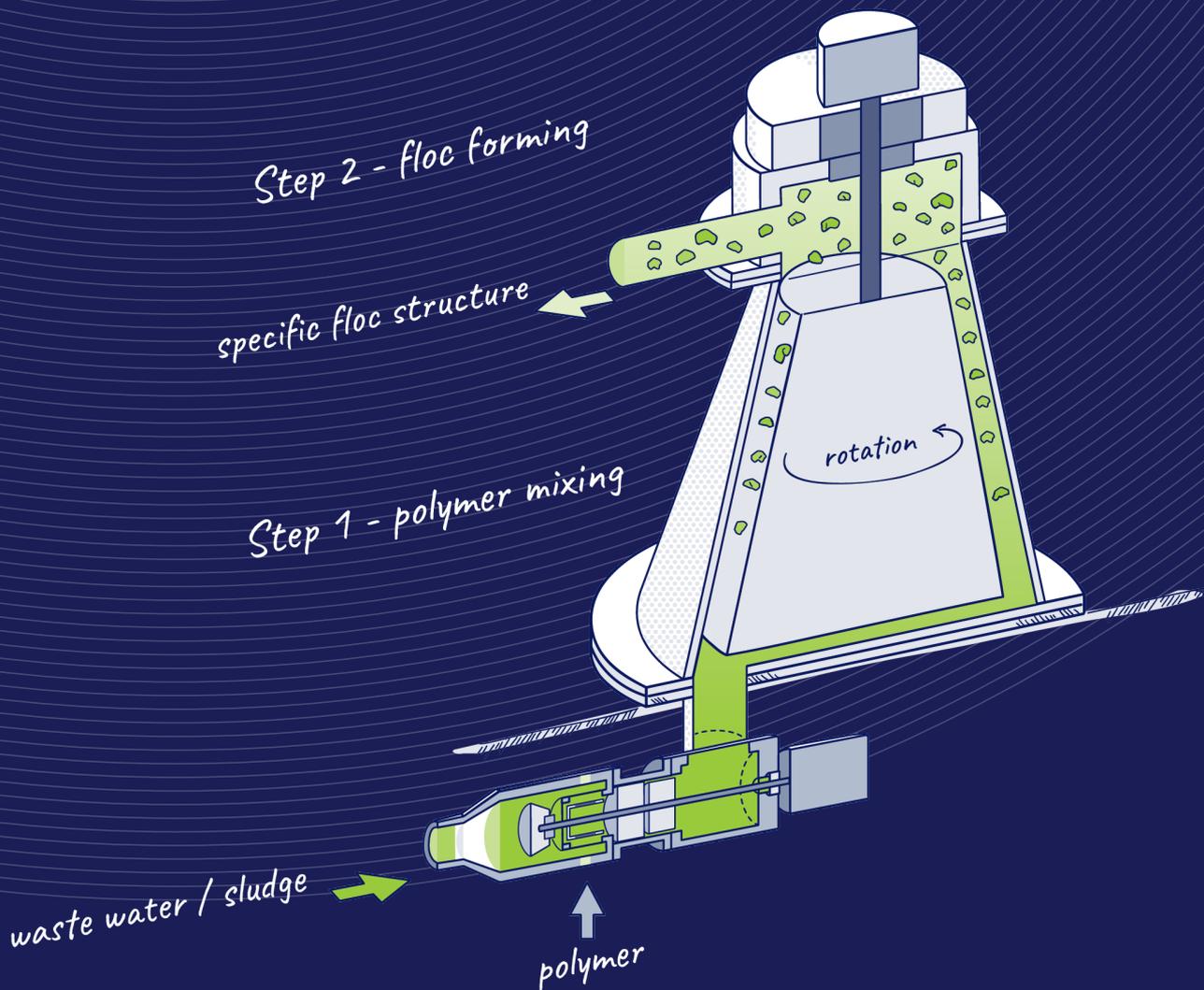
The FlocFormer carries out a two-step process:

Step 1:

First, the flocculation agent (polymer) is injected into a rapid mixer, which results in high volume flocs with low shear stability.

Step 2:

Taylor vortices within the flocculation reactor induce rolling and collision effects on the flocs, enabling the polymer to reach full performance.



sludge efficiency drive

Using the rapid polymer mixing system, the dosed polymer is homogenously mixed throughout the sludge maximising the polymer efficiency. To achieve the best performance, polymer does not require overdosing.

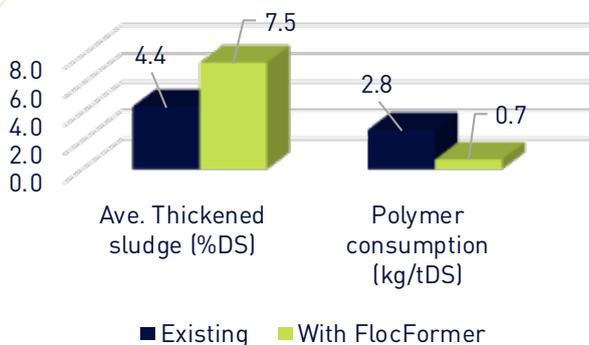
Through its smart design, using a combination of adjustable inner cone rotational speed and inner cone vertical axis movement (gap adjustment between inner and outer cone), FlocFormer produces larger and more robust pelletised floc. As a result, the dewatering and separation efficiency of these pellets is very high.

Four adjustable operating parameters enable the system to be used at different flow rates and achieve a high flexibility towards changing sludge properties and dewatering machines:

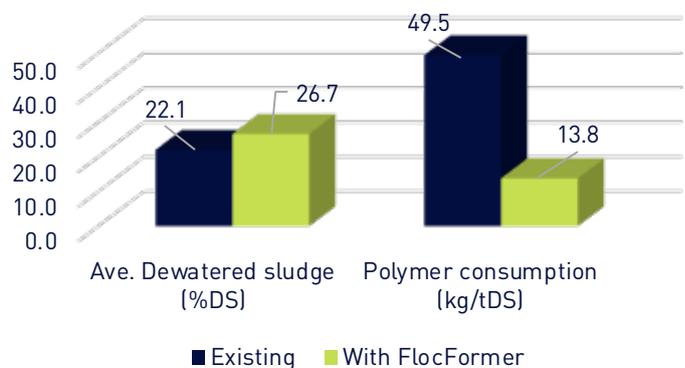
- ✓ Polymer dose
- ✓ FlocFormer cone rotational speed
- ✓ FlocFormer rapid mixer speed
- ✓ FlocFormer cone gap adjustment

UK flocformer trials

Site 1 - Gravity Belt Thickener
(Imported sludge)



Site 1 - Centrifuge
(Digested sludge)



The Dry Solids from the GBT increased by 70.4%, from 4.4 %DS to 7.5%DS

Site 1 Savings	
Polymer cost savings per annum	£97,500
Transport cost savings per annum	£39,500
Total	£137,000
ROI	2.69 years

various installations...

Company	Country	Installed FlocFormer
Wasser-u. Bodenverband Wahn	Germany	Two 4L FlocFormers
Biorender AG	Switzerland	FlocFormer 3L
TSK Tsukushima Kikai Co.	Japan	Two 3L FlocFormers
PT Gudang Garam Tbk	Indonesia	FlocFormer 4L
Dalian Yooqi Water Treatment Technology Co.	China	FlocFormer

SUEZ offer this solution for the UK in collaboration with our technology partners Aquaen.



As a consequence of the drive for optimisation, the focus is on reduced transportation, maximising performance of existing equipment and extending the lifetime of such equipment.



SUEZ Water UK,
290 Aztec West, Almondsbury,
Bristol BS32 4SY, United Kingdom

Email: Howard.Craddock@suez.com
Tel: +44 1454 804040

Visit us at:

www.suezwater.co.uk

