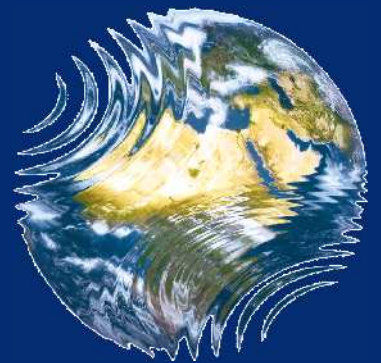




*FLOPAM and
FLOQUAT
for the Dredging Industry*



SNF FLOERGER®

FLOPAM and FLOQUAT *for*

■ SNF's polymers are widely used in municipal and industrial wastewater treatment plants and by dredging and dewatering contractors for accelerated solid/liquid separation. Typical uses of SNF's polymers by the dredging industry are:

Barges and hopper dredgers

Direct online injection into the hopper/barge decreases the settling time, especially for fine particles. The overflow becomes clear. The overall processing time is shortened.

Settling ponds

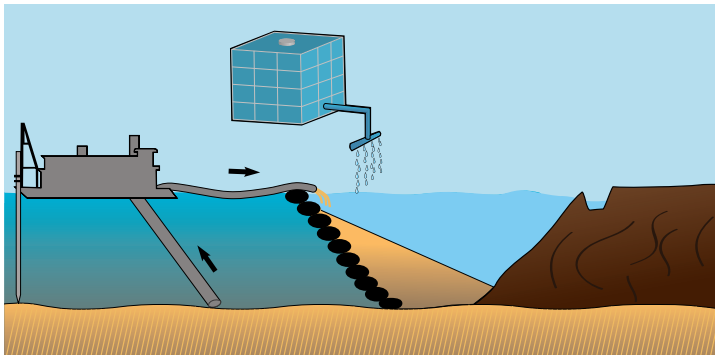


fig1: flocculation principle in settling ponds

Usually many successive settling ponds are required before reaching a clear overflow. The addition of polymers results in higher clarity even after the first settling pond and higher quantity of sediments in the pond without changing the overflow quality. Typically the land surface required for sediment settling is divided by 2 when polymers are used.

Dewatering of thickened sludge

Polymers have proved to be very efficient in the dewatering of sludge from municipal and industrial lagoons, ponds, lake clean-out projects, waterways, harbors and ship canals. Polymers are used around the world by dewatering contractors using various equipments such as geotextiles tubes, centrifuges, belt filter presses or screw presses.

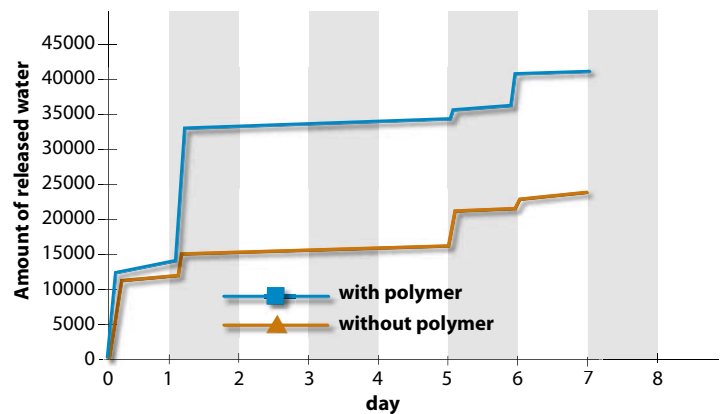


fig2: dewatering test in geotextile tubes

Contaminated sediments

Pollutants are bound to fine particles, typically below 20 microns. Polymers agglomerate the fine particles together, keeping the pollution in the solid phase after settling. Therefore, polymers ensure that no contaminants are released in the water. In addition, landfill and transport costs are reduced since the solid phase has a higher dryness.

Saving Time, Saving Land and Preserving the Environment

■ SNF has been supplying polymers to various industries for more than 30 years. In order to meet the requirements of its large customer base, SNF's polymers range and technical support are in constant evolution, offering custom made solutions for each industry.

With local technical teams present all around the world and FLOQUIP Equipment Divisions on several continents, SNF has developed the following 5-point support to the dredging industry:

Polymer selection

Polymers can be cationically and anionically charged, low, medium or high molecular weight, linear or structured, coagulants or flocculants, under powder, emulsion, or liquid form. The polymer selection (Jar test) is made either in the lab or on the field. Water salinity, shear forces, water flowrate, project size, dewatering equipment are important factors that influence polymer selection. SNF technical experts realize the Jar test together with customers in order to meet their needs and train them on polymer chemistry.

Health, Safety and Environment information

Dredging projects using polymers may require data requested by customers, authorities, consultants or local communities. The data required could be Material Safety Data Sheets, polymer effects on human health, aquatic life and environment, biodegradability, overdosing consequences... Thanks to its long experience in polymer chemistry, SNF's technical team is able to provide clear answers to any question arising from polymer use in the dredging industry

Design of make up equipment

The design of the polymer preparation equipment depends on parameters such as dosage, polymer form, ionicity and molecular weight, water temperature, power supply. Dredging projects are characterized by high flowrate, strong variations on both flowrate and solids content. From basic preparation equipment to fully automated remote control systems, SNF's FLOQUIP Division will design the right equipment for each project.

Start up of polymer injection

Some variations may appear between lab scale and field operations. Injection points, floc visual check, dosage control are part of SNF know-how and training. The fine-tuning on site at the start up of the polymer injection is made by SNF technical experts in order to reach enhanced flocculation and the lowest operational costs.

Field technical support

Upon request or when operating parameters have changed (such as water quality), additional technical support is needed. After meeting with operators and taking into account the new parameters, SNF technical experts will optimize the polymer system in place: product selection and injection points.



fig3 : skid mounted make up equipment

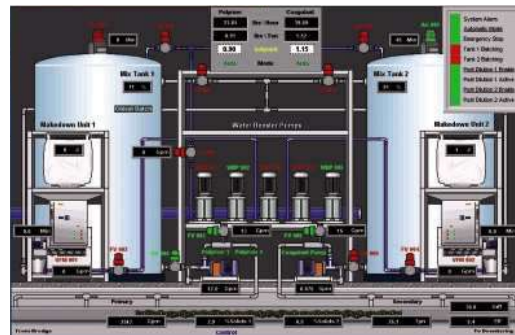
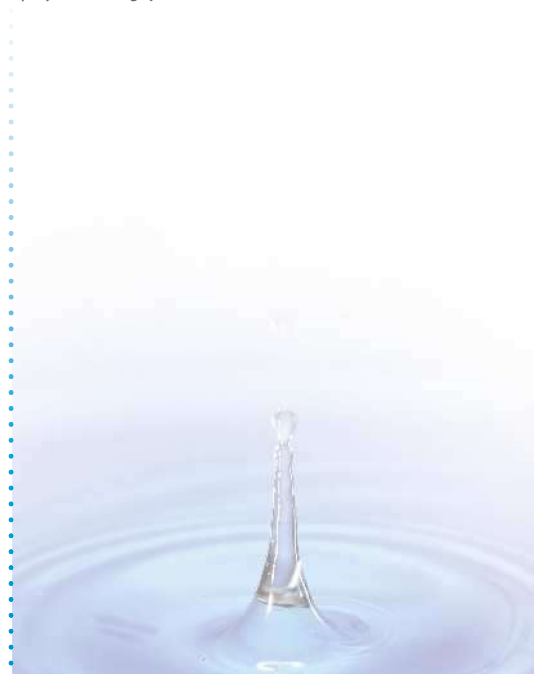


fig4: automated remote polymer dosing system



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