

A highly efficient general-purpose material that allows water disposal systems to incorporate natural providence, thus differentiating the systems from others to demonstrate innovative effects.

Swim-bed Biofringe, A Contact Material for Water Treatment

Features

A contact material for water treatment offering an innovative water treatment technology combined with a number of necessary functions using the potential of the textile industry.

Provides an innovative effect differentiated from others, thus greatly increasing a possibility of biological treatment and responding to a demand for high-level quality cost performance (QCP). (Necessary to defy stereotype, because the technology is different in structure from conventional technologies.)

Enables the development of differentiating marketing strategies in response to each requirement.

Overview

(Technical principles, actions, etc.)

Shape and Frame Mounting of Biofringe (BF) (see fig. 1)

The BF is made of warps and wefts, and the wefts sway as water flows, thus providing an innovative differentiating effect compared with other contact materials.

The BF is mounted by securing the uppermost and lowermost warps with the top and bottom frames.



Fig. 1 BF Installation

Main Processing Flow

① CJeI-V (see fig. 2): Circulation-type nitrification-denitrification and dephosphorization treatment

The quality stabilization of water, a short hydraulic retention time (HRT), ease of maintenance, compactness, versatile functions, and ease of reuse.

② CJeI-I (see fig. 3): One-pass Treatment

A high contact frequency and low-concentration, high-speed, and short-period (several-minute) treatment at an ultrahigh efficiency rate.

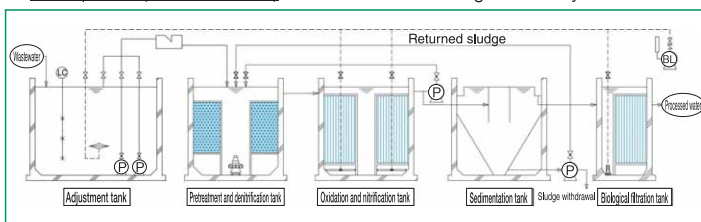


Fig. 2 CJeI-V Flow

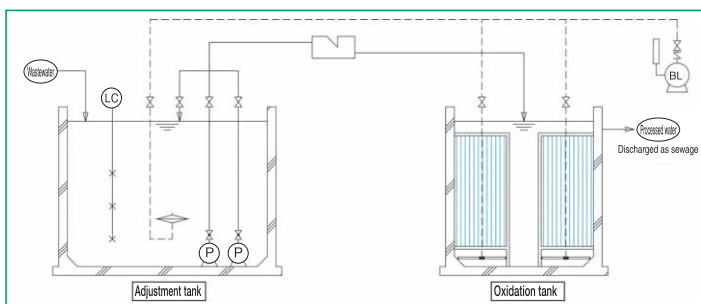


Fig. 3 CJeI-I Flow

Future Possibility

③ Aerobic Granules and Pre-anaerobic Treatment

A combination of the BF and pre-anaerobic treatment forms flocs that are much greater than those conventional methods form, thus improving the sedimentation characteristics of sludge and ensuring remarkable performance (see fig. 4 and fig. 5).

④ Combination with Membrane Bioreactor (MBR)

A reduction in running cost, improvements in purification efficiency and water quality, downsizing, and synergy effect

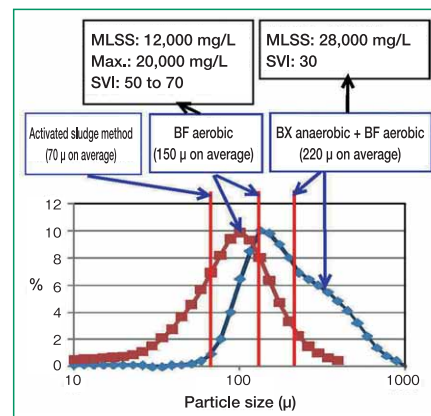


Fig. 4 Particle Distribution

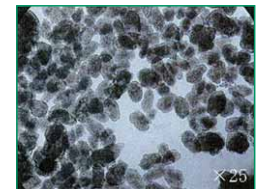


Fig. 5 Photograph of Flocs

Introductory Track Record

- In Japan, 380 BF units have been used for the last 17 years without being replaced.
- A number of BF units have been delivered to China, Taiwan, USA, Malaysia, and Indonesia.
- Full-fledged global sales promotion centering on China in future-reproduction of business models successful in Japan.

Effects

○ From ①: Urban sewage purification—A1 class, space saving, ease-of-maintain, compact unit

○ From ②:

- A fast-flushing measure for urban sewage.
- Pre-purification treatment: High-level treatment with a great reduction in chloramine generation.
- Drinking water unit: A compact unit with COD, BOD, organic SS elimination and nitrification-denitrification treatment.
- Lakes, swamp, river, and riverside water purification: Fixed mount type and float type.
- Closed-type fish farming: Introduction of full-fledged water treatment technology.

○ From ③ and ④: More than 10 times as efficiency as conventional technologies, thus concentrating society's hopes on the creation of excellent ecosystems.

- Ecosystem of processing urban-type sewage.
- Self-supply system of water on a condominium basis making use of rainwater and reuse of wastewater.
- Achievement of comfortable living conditions.

○ Water resource utilization in China for environment purification and contribution to society.

Innovative attainment under the cooperation of Japan and China.