

Research on Membrane Technology Guideline in Sewage Works

Year of Research

2008

(Purpose)

Due to constant progress has been attempted, the percentage of sewerage population of our country reached 71.7% by the end of 2007 fiscal year, though the percentage still remains low among the small cities. However, a lot of problems such as improvement of closed water bodies, establishment of sound water environment and systematic renovation of deteriorated sewerage facilities have been left. For the solution of those problems, membrane filtration technology is expected to be the major treatment technology. In addition to the application of this technology to treated waste water for recycling, the decreased price of membrane by recent progress of its technology makes direct application of the technology to treatment of sewerage treatment realistic. Especially, about ten membrane bioreactor (MBR) plants had been introduced to small scale sewerage treatment plants by the end of 2008 fiscal year. Increasing needs of renovation in middle or large scale treatment plans might drive installation of the system to them.

In this study basic information and state-of-the-art knowledge about membrane technology focused on sewerage treatment have been arranged. And It aimed to arrange the matter and issues when local municipalities try to introduce membrane technology to sewerage treatment, and to draft guideline.

(Results)

Based on the result of the discussion by "Sewage Technical Meeting of Membrane Technology ", "The first edition of the guideline (a draft) for the membrane technology to sewage treatment" is drafted as technological material when the local authority examines the introduction of the membrane bioreactor technology into sewage treatment.

(1) Material arrangement concerning membrane technology

- ① Domestic and foreign trend in recent years and arrangements of the latest technical information.
- ② Application experience of membrane technology
- ③ Water quality data when membrane technology is applied
- ④ Cost information when membrane technology is introduced

(2) Drafting guideline (proposed)

Table-1 Composition of "The first edition of the guideline (a draft)
for the membrane technology to sewage treatment"

Chapter 1	Location of this guideline	Composition of guideline and definition of terms
Chapter 2	Introduction	Outline of membrane technology, basic matter of membrane, and advantages of introduction to sewage treatment, and current state of membrane technology in sewage
Chapter 3	MBR introduction into newly constructing plant	Basics of the MBR and considerations when MBR is introduced into new wastewater treatment plants, and economical considerations.
Chapter 4	MBR introduction into existing plant	Considerations of parallel treatment with MBR and the existing processes when MBR is introduced into existing treatment plant.
Chapter 5	Membrane technology introduction for reusing reclaimed water	The effectiveness of the membrane technology when it is introduced to reclaimed water, and the considerations for introduction of the technology.
	Reference	Technical information for considering introduction of membrane technology, and possibilities using membrane technology.

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Key words

Membrane technologies, Membrane bioreactors, Water reuse