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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Technical specifications for filtration process in wastewater
treatment**

污水过滤处理工程技术规范
(English Translation)

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Foreword

To implement the "Environmental Protection Law of the People's Republic of China" and the "Water Pollution Control Law of the People's Republic of China", standardize sewage filtration treatment Cheng Jian, to make it continuous and stable operation, discharge standards, prevent water pollution, improve environmental quality, and develop this standard.

This standard specifies the overall design, process design, equipment selection, testing and control of the filtration process used in wastewater treatment projects.

Technical requirements for operational management.

This standard is the first release.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is mainly drafted by. Jiangsu Academy of Environmental Sciences, Southeast University, Yangzhou Chenglu Environmental Engineering Co., Ltd., Jiangsu Pengyu Environmental Engineering Design Institute.

This standard was approved by the Ministry of Environmental Protection on December 17, 2010.

This standard has been implemented since March 1, 2011.

This standard is interpreted by the Ministry of Environmental Protection.

Technical specification for sewage filtration treatment engineering

1 Scope of application

This standard specifies the overall requirements, process design, equipment selection, testing and control of the filtration process used in wastewater treatment projects.

Technical requirements for construction acceptance and operation management.

This standard is applicable to the design, construction acceptance and operation management of the filtration unit process of urban sewage or industrial wastewater treatment engineering.

Technical basis for line research, environmental impact assessment, process design, engineering acceptance, and operation management.

2 Normative references

The contents of this standard refer to the terms in the following documents. For undated references, the valid version applies to this standard.

GB 50141 Water supply and drainage structure engineering construction and acceptance specification
GB 50204 Concrete Structure Engineering Construction Quality Acceptance Specification
GB 50205 Steel Structure Engineering Construction Quality Acceptance Specification
Technical Specifications for Operation and Assessment of HJ/T 355 Water Pollution Source Online Monitoring System (Trial)
CJJ 60 Urban Wastewater Treatment Plant Operation, Maintenance and Safety and Safety Technical Regulations
CJ/T 51 Standard for urban sewage quality inspection methods

3 Terms and definitions

The following terms and definitions apply to this standard.

Filtration

Refers to the process of cutting off impurities in water by means of granular materials or porous media.

Filtering media

Refers to granular materials or porous media used to remove impurities in water during filtration.

Initial filtered water Refers to the filtered effluent at the initial stage of re-filtration after backwashing of the filter.

Filter media effective particle size (d₁₀) effective size of filtering media Refers to the filter material particle size after filtration, less than 10% of the total weight of the filter material.

Effective size of filter media (d₈₀) effective size of filtering media Refers to the filter material

particle size after sieved, less than 80% of the total weight.

Filter material unevenness coefficient (K80) uniformity coefficient of filtering media Refers to the ratio of the particle size of the filter material to the effective particle size of less than 80% of the total weight after the filter material is sieved.

Uniformly graded filtering media Refers to a filter material with a relatively uniform particle size and a non-uniformity coefficient (K80) of 1.3 to 1.4.

Filtration rate

Refers to the amount of water filtered by the unit filtration area per unit time.

Compulsory filtration rate Refers to the filtration rate of other operating grids when the partial filter is stopped due to maintenance or sanding.

3.10

Flushing rate

Refers to the amount of flushing water per unit of filter material per unit time.

3.11

Expansion rate of bed-expansion Refers to the degree of expansion of the filter layer during backwashing, expressed as a percentage of the thickness of the filter layer.

3.12

Flush cycle (filter cycle, filter cycle) filter runs Refers to the entire interval from when the filter completes flushing to when it is flushed again.

3.13

Supported layer graded gravel layer Refers to the granular material that is placed between the water distribution system and the filter layer to prevent the filter material from leaking into the water distribution system.

3.14

Surface washing

Refers to the flushing method of flushing the surface of the filter material with a fixed or rotating water jet system.

3.15

Surface sweep washing when the V-type filter is backwashed, the water to be filtered passes through the V-shaped water inlet hole to sweep the flushing muddy water to the central drain tank in the horizontal direction of the water surface.

An auxiliary flushing method.

3.16

Ordinary quick filter Refers to the traditional quick filter arrangement, the filter material is generally a single layer of fine sand grade filter material or coal, sand double layer filter material, flushing with single water rinse, the flushing water is supplied by a water tower (tank) or a water pump.

3.17

Siphon filter siphon filter Refers to a form of a quick filter that uses a siphon instead of an inlet and drain valve. Each of the filter cells is connected to each other, and the backwash water is not washed.

The filtered water supply of the remaining filter cells washed. The filtering method is equal to the filtration speed and variable water level operation.

3.18

Valveless filter valveless filter Refers to a form of quick filter without a valve. During operation, the effluent water level remains constant, and the influent water level is lost with the head of the filter layer.

Increase and continuously rise in the siphon. When the water level rises to the top of the siphon tube and form a siphon, the filter backwash is automatically started and rinsed.

The muddy water drains out of the pool along the siphon.

3.19

V type filter V filter Refers to the filter tank arrangement with a coarser and more uniform filter material and a V-shaped water inlet on both sides of each filter. Flushing with gas water micro the expansion method has a surface sweeping method, and the flushing mud water is discharged outside the pool through a drain groove provided in the center of the filter grid.

4 Contaminants and pollution loads

4.1

The filtration process can be used for the separation of various water quantities and lower concentrations of suspended solids.

4.2

The filtration process is mainly used for the separation and removal of fine suspended solids and destabilizing colloids in water. Suitable for sewage secondary biological treatment of effluent, Industrial wastewater chemical precipitation, air flotation, suspension treatment of suspended solids (SS) 5 General requirements