

CCS Z 23

HJ

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

HJ 2023-2012

**Technical specifications of expanded granular sludge
bed(EGSB)reactor for wastewater treatment
(English Translation)**

Issued on: December 24, 2012

Implemented on: March 1, 2013

Issued by: Ministry of Ecology and Environment

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Foreword

Standardize anaerobics for the implementation of the Environmental Protection Law of the People's Republic of China and the Law of the People's Republic of China on Water Pollution Prevention Construction and operation management of granular sludge expanded bed reactor wastewater treatment project, prevention and control of environmental pollution, protection of the environment and human health Kang, the development of this standard.

This standard specifies the process design, testing and control, construction and acceptance, and operation of anaerobic granular sludge expanded bed reactor.

Technical requirements such as maintenance.

This standard is a guiding standard.

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. China Environmental Protection Industry Association, Tsinghua University, Beijing Municipal Academy of Environmental Sciences, Shandong Shifang Environmental Energy Co., Ltd.

This standard was approved by the Ministry of Environmental Protection on December 24, 2012.

This standard has been implemented since March 1, 2013.

This standard is explained by the Ministry of Environmental Protection.

Technical specification for wastewater treatment of anaerobic granular sludge expanded bed reactor

1 Scope of application

This standard specifies the process design, detection and control, and construction of anaerobic granular sludge expanded bed reactor wastewater treatment project.

Technical requirements for acceptance, operation and maintenance.

This standard applies to the design, construction and operation of industrial organic wastewater engineering using anaerobic granular sludge expanded bed reactor.

Bank management can be used as the technical basis for environmental impact assessment, design, construction, acceptance and operation and management after completion.

The design, operation and the like of the internal circulation anaerobic reactor and the anaerobic fluidized bed reactor can be referred to this standard.

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 3836 Electrical equipment for explosive gas atmosphere GB 12348 Environmental noise emission standards for industrial enterprises General rules for safety and health requirements of GB 12801 production process GB 50011 seismic design code for buildings GB 50014 Outdoor Drainage Design Code GB 50015 Building Water Supply and Drainage Design Code GB 50016 Building Design Fire Code GB 50017 steel structure design specification GB 50037 Building Ground Design Specification GB 50040 power machine basic design specification GB 50046 industrial building anti-corrosion design specification GB 50052 design specification for power distribution system GB 50053 10kV and below substation design specifications GB 50054 Low Voltage Distribution Design Specification GB 50057 lightning protection design code for buildings GB 50069 Water supply and drainage engineering structure design specification GB 50187 General Plan for Design of

Industrial Enterprises GB 50202 Code for construction quality acceptance of building foundation engineering GB 50203 Masonry Construction Quality Acceptance Specification GB 50204 Concrete Structure Engineering Construction Quality Acceptance Specification GB 50205 Steel Structure Engineering Construction Quality Acceptance Specification GB 50209 Construction Ground Engineering Construction Quality Acceptance Specification GB 50222 Building interior decoration design fire protection specification GB 50268 Water supply and drainage pipeline engineering construction and acceptance specifications GB 50275 Compressor, fan, pump installation engineering construction and acceptance specifications GB/T 18883 indoor air quality standard GB J 19 Industrial enterprises heating, ventilation and air conditioning design specifications GB J 22 Factory Mine Road Design Code GB J 87 Industrial Enterprise Noise Control Design Specification GBZ 1 industrial enterprise design hygiene standard GBZ 2 workplace occupational exposure limit CJJ 60 Urban Wastewater Treatment Plant Operation, Maintenance and Safety Technical Regulations HGJ 212 metal welded structure wet gas cabinet construction and acceptance specification HJ/T 91 Surface Water and Wastewater Monitoring Technical Specifications JGJ 80 Safety Specifications for Construction Work Heights NY/T 1220.1 Technical Specifications for Biogas Engineering Part 1. Process Design NY/T 1220.2 Technical Specifications for Biogas Engineering Part 2. Gas Supply Design Measures for Completion and Acceptance of Construction Projects (Engineering) (National Planning Commission (1990) No. 1215) Measures for the Administration of Environmental Protection Acceptance for Completion of Construction Projects (Order of the State Environmental Protection Administration (2001) No. 13)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

anaerobic granular sludge expanded bed reactor expanded granular sludge blanket reactor (referred to as EGSB reactor) Refers to the combination of gas, liquid and solid three-phase separation zones in the bottom sludge zone and the middle and upper sections, through reflux and structural design.

The effluent reactor has a higher ascending flow rate in the reactor, and the granular sludge inside the reactor is in an expanded state of anaerobic reactor.

3.2 Outer loop external the circle

Refers to a cycle that will be boosted by the power of the effluent from the top three-phase separator and mixed with the incoming water.

3.3 Inner loop internal the circle

Refers to a cycle in which the effluent that has not passed through the top three-phase separator is boosted by power and mixed with the incoming water.

4.1 Design water quantity

4.1.1

The designed water volume shall be designed according to the actual wastewater flow measured at the total discharge of the plant or industrial park. Test method should be consistent HJ/T 91 regulations.

4.1.2

The change of wastewater flow rate should be measured according to the characteristics of the process, and the flow coefficient of variation should be determined.

4.1.3

When the actual measurement data cannot be obtained, it can be determined by referring to the current national final water consumption conversion, or according to the same the same scale is determined by the analogy of the existing plant drainage data.

4.1.4

Lifting pump house, grille well and grit chamber should be designed according to the highest daily maximum wastewater volume.

4.1.5

The design flow rate of the EGSB reactor and the water delivery facilities such as pumps and pipelines before and after the EGSB reactor should be at the highest level.

Mean time wastewater volume design.

4.2 Design water quality

4.2.1

The design water quality should be determined according to the actual measurement data of the industrial wastewater entering the wastewater treatment plant (station), and its determination method and the data processing method shall comply with the provisions of HJ/T 91. When there is no actual measurement data, refer to the emission data analogy of similar factories.

determine.

4.2.2

The EGSB reactor water inlet shall meet the following conditions.