ZCEN 中昌

Water treatment product
and solution provider

水魔岛®

Intelligent Integrated Wastewater Treatment Equipment

- Fast construction
- Compact footprint
- Low investment
- Low operating cost
- Unmanned operation
- Modular installation

浙江中昌水处理科技有限公司

ZHEJIANG ZHONGCHANG WATER TREATMENT TECHNOLOGY CO., LTD.

PRODUCT
INTRODUCTION

Water Magic Cubes – Intelligent Integrated Wastewater Treatment Equipment

ZCEN Water Magic Cubes intelligent integrated wastewater treatment equipment adopts AFS sludge-membrane coupled two-stage high-efficiency sedimentation process. Through intelligent switching between IFAS and pure biofilm, as well as independently controlled sludge-liquid reflux, it significantly improves adaptability and operational stability for complex and variable wastewater quality.

The equipment features compact layout, simple structure, and intelligent operation & maintenance. Factory prefabrication and on-site modular installation greatly shorten construction period and reduce investment.The unit can be fully buried, semi-buried, or installed above ground. Single unit capacity: 1–200 m³/d, multiple units can be connected in parallel.

Exported to **18 countries**

Serving **370 cities** worldwide

Water treatment capacity : **1 billion m³/day**

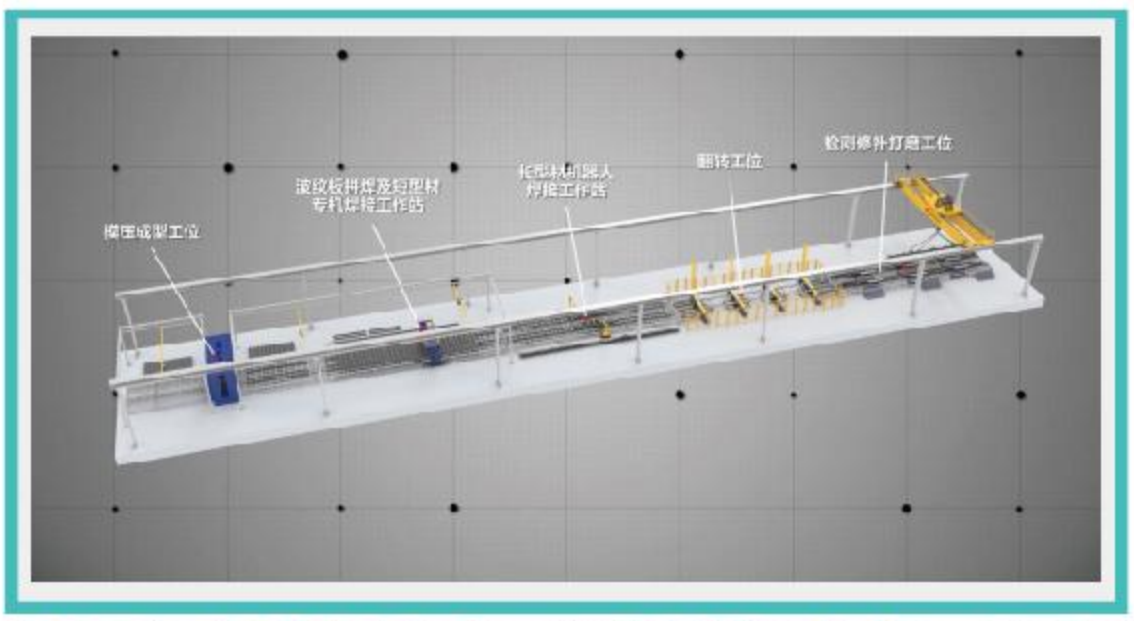
Exported to 18 countries and 370 cities worldwide, with a water treatment capacity of 1 billion m³/d.

Awards & Honors

The company has participated in drafting more than 10 industrial standards, including: CJ/T 47-2016 Filter Blocks for Water Treatment; CJ/T 83-2016 Inclined Tubes for Water Treatment; CECS 178:2009 Technical Specification for Monolithic Cast Filter Plates and Adjustable Filter Nozzles for Air-Water Washing Filters. It owns more than 10 software copyrights and over 60 authorized patents.

• Class II General Contracting Qualification for Mechanical and Electrical Engineering	• ISO 9001 Quality Management System Certification
• Class II Professional Contracting Qualification for Electronic and Intelligent Engineering	• ISO 14001 Environmental Management System Certification
• Class II General Contracting Qualification for Municipal Public Works	• ISO 4500 Occupational Health and Safety Management System Certification
• Luban Award for China Construction Projects (National Quality Project)	• Five-Star After-Sales Service Certification
• National High-Tech Enterprise	• Certification Intellectual Property Management System
• Zhejiang Provincial SRDI SME	• Certification National Benchmark Enterprise for Energy-Saving Water Treatment Equipment
• Zhejiang Provincial High-Tech R&D Center	• China Well-Known Environmental Protection Brand
• Hangzhou High-Tech Enterprise	• Top 10 Domestic Brands in the water treatment Engineering Industry
• Hangzhou High-Tech R&D Center (Industrial)	• Municipal Famous Trademark Council
• China Quality & Reputation Assurance Enterprise	• Member of China Urban Water Supply and Drainage Association

Intelligent Production Line



Fully automatic robotic intelligent production

Stamping forming: one-step stamping according to designed corrugated plate curvature.

Automatic welding: full robotic welding for corrugated plates, columns, beams.

Double-sided reinforcement: double-sided welding for all structural parts for stability.

Full inspection: weld inspection to ensure quality.

Technological innovation
complete R&D and innovation team

Engineering design
professional water treatment engineering design & manufacturing capacity

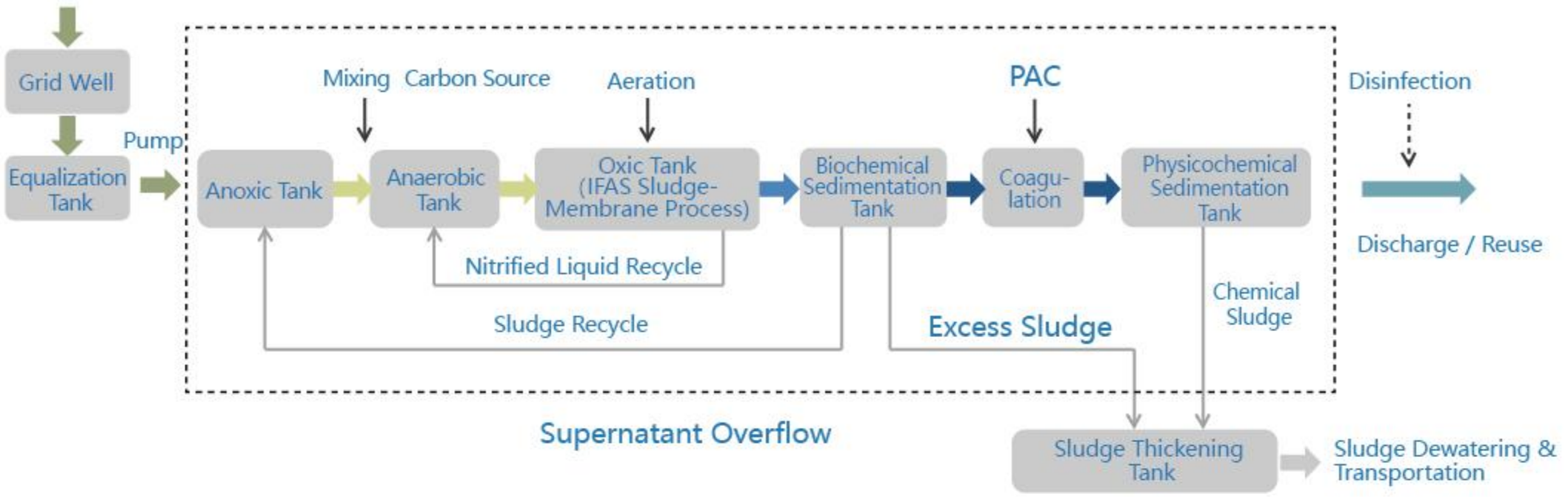
Construction & operation
mature construction and operation team

Full industrial chain
one-stop full-chain service

Service philosophy
customer first, attentive service

Process Flow

• Process Flow



• Process Description

• The core biological treatment process adopts the Fixed and Suspended Sludge Coupled Technology used by Integrated Fixed-Film Activated Sludge (IFAS) Process, consolidating two-stage high- efficiency sedimentation process into this integrated treatment system, which strengthens shock resistance and adapts well to variable rural domestic wastewater.

• Domestic sewage is lifted by a submersible sewage pump and enters the intelligent integrated sewage treatment system , flows through the anoxic tank and anaerobic tank in sequence, and then flows into the aerobic tank. The aerobic tank is filled with high-efficiency biofilm carries to allow fixed micorganism growth and achieve consistent and efficient organic matter degradation and nitrification.

• Part of the liquid-sludge mixture is returned from the aerobic tank to the anoxic tank to achieve total nitrogen removal through denitrification. The removal of nitrates in the anoxic tank, creates favorable anaerobic conditions in the following anaerobic tank, for phosphorus accumulating microorganisms (PAO) which have ability to take in organic substrate and release phosphorus under anaerobic condition. In return, it enhances the phosphorus uptake in the subsequence the aerobic tank by the same group of microorganism, and the overall phosphorus removal.

• After anoxic-anaerobic-aerobic biological treatment, treated liquid-sludge mixture enters the sedimentation tank for solid-liquid separation, and the supernatant is discharged as effluent or disinfected for reuse.

Equipment Selection

For small centralized domestic wastewater treatment in villages and towns

Serial No	External Dimensions (mm)	Treatment capacity (m^3/ day)	Power rating (kw)	Space requirement (m^2)	Number of people served (persons)
SMD-YW-4020	4600×2500×2500	20 ~ 25	0.38	11.5	200 ~ 250
SMD-YW-4030	6000×2500×2500	30 ~ 40	0.56	15	300 ~ 400
SMD-YW-4050	8300×2500×3000	50 ~ 60	0.82	20.75	500 ~ 600
SMD-YW-4080	10300×3000×3000	80 ~ 90	1.25	30.9	800 ~ 900
SMD-YW-4100	12900×3000×3000	100 ~ 110	1.51	38.7	1000 ~ 1100
SMD-YW-4200	17200×3000×3000	200 ~ 220	2.88	51.6	2000 ~ 2200

Note: The above are standard configuration parameters; actual dimensions shall prevail. Custom sizes available.

Technical Features

Modular Design

- Standard IFAS sludge-membrane coupled two-stage sedimentation process; optional extended packages such as soft biofilter.
- Wide application; meets Class I A/B standard; optional upgrade to meet local Class IV standards.

Complex Water Quality Adaptability

- Grouped aeration, intelligent anoxic/oxic control, intelligent switching between IFAS and pure biofilm.
- Strong adaptability to variable rural domestic wastewater; stable effluent for COD, TN, NH_3-N, TP, SS.

Standardized Production

- Robotic intelligent production line, stamping forming, automatic welding.
- Mass production, stable quality, on-time delivery.


Strong Shock Resistance

- High-efficiency media with good hydrophilicity, fast biofilm formation.
- High specific surface area, high treatment efficiency, strong shock resistance.


Remote Intelligent Operation

- Real-time monitoring, remote control, unmanned operation, intelligent O&M.
- Closed-loop management, electronic dispatch, mobile/PC dual-terminal interaction.


Energy Saving & Consumption Reduction

- Multi-point air-lift reflux and sludge discharge; intelligent precise aeration; low-energy equipment. Energy saving ≥30%.
- Direct operating cost: 0.3–0.5 RMB/m³ at full load.
- Simple structure, easy maintenance; labor reduction ≥50%.
- Sludge yield reduced by 40% vs. activated sludge process.
- Integrated structure; footprint reduced by >60%.


水魔岛®
Intelligent Integrated Wastewater Equipment

Energy Saving	Sludge Reduction	Labor Reduction	Footprint Reduction
≥30%	40%	≥50%	>60%

Application Scenario

The decentralized treatment of domestic sewage in villages and small towns

The treatment of domestic sewage in schools, hotels, expressway service areas, and tourist attractions

Treatment of inferior-quality water treatment in water source protection areas, ecologically sensitive areas, river interception and emergency treatment

The emergency sewage treatment projects: for example, the existing sewage treatment plant is overloaded due to a water pollution incident in emergencies or a flood.

Project Cases

Fugu County Domestic Wastewater Treatment Project, Shanxi

After capacity expansion, MBR process was adopted. For scattered rural residential areas, small integrated wastewater stations were built. Our company supplied and installed integrated wastewater treatment equipment.

Keshan Village Domestic Wastewater Integrated Equipment Project, Heilongjiang

MBR process was applied. Small integrated wastewater stations were constructed to treat decentralized rural domestic wastewater.

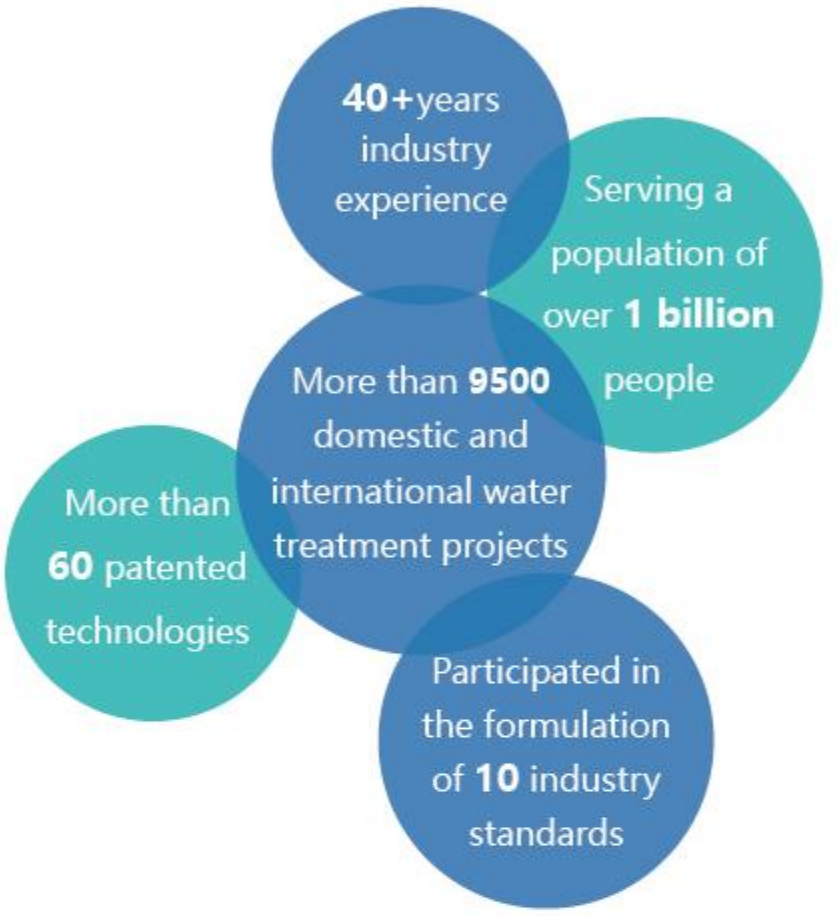
Water Magic Cubes – One-Stop Solution Provider

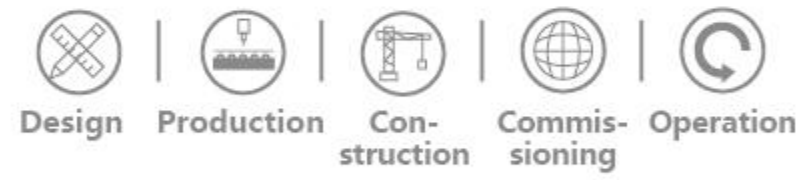
Founded in 1978, ZCEN has over 40 years of expertise in R&D, manufacturing, system integration, process development, engineering design, procurement, construction, and operation (EPC+O) for water treatment equipment.

The company holds qualifications including: Class I Water Plant Operation; Class II General Contracting for Mechanical and Electrical Engineering; Class II Professional Contracting for Electronic and Intelligent Engineering; Class II General Contracting for Municipal Public Works.
It is a national high-tech enterprise and provincial "Little Giant" enterprise, with intelligent production workshops, prefabricated water plant innovation bases, advanced water treatment equipment industrial parks, and provincial high-efficiency R&D centers.As a core drafting unit, the company has contributed to: GB/T 44325-2024 Code on Zero Discharge of Industrial Circulating Cooling Water; Industrial standards: Filter Blocks for Water Treatment, Inclined Tubes for Water Treatment; Association standards: Technical Specification for Prefabricated Sewage Treatment Plants, Technical Specification for Adjustable Filter Nozzles, Integrated MBBR Sewage Equipment, Integrated Water Purification Equipment, Deep Bed Filter Specification, Ultrafiltration Water Treatment Equipment.

The company has participated in numerous national key projects, including the South-to-North Water Diversion Project, Shanghai World Expo, and the Beijing Olympic Games Water Supply Project, and has been honored with awards such as the Luban Award for China Construction Projects, as one of the Top 10 Domestic Brands in the water treatment Engineering Industry, and China Well-Known Trademark. To date, Zhongchang has provided reliable products and high-quality services for more than 9,500 domestic and international water treatment projects.

Guided by the philosophy of "win-win cooperation and pragmatic innovation," the company continues to create greater value for customers through ongoing innovation and contributes to the preservation of lucid waters and lush mountains.





Full-chain service

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Technical Note All parameters are theoretical; actual values may vary

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