



骏泰塑业  
JUNTAI PLASTIC

# High Quality Smart Tube Diffuser

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HANGZHOU JUNTAI PLASTIC PRODUCTS CO.,LTD



## SMART TUBE DIFFUSER

Formula EPDM From LANXESS, Germany  
Higher Quality Than Other China Diffusers



OTHER ALL ARE OK,  
GOOD JOB

# JUNTAI COMPANY INTRODUCTION

Hangzhou Juntai Plastic Products Co. Ltd., was founded in 2013, We established factory Anhui Juntai Technology Co., Ltd in Anqing City. We won the National high-tech enterprise in 2019 and has main patents for Plastic profile, MBBR media, Disc diffuser, Tube diffuser, water treatment Equipment. Now we are one of the excellent manufacturers of in water treatment field.

In terms of production capacity. We have 6760 m2 factory in Anhui with 35 High speed extruded lines and injection lines. The annual capacity of MBBR is more than 80,000 CBM; the annual Capacity of Disc diffuser and PVC profiles, injection parts are more than 5,000 tons. High quality with ISO9001 and other international certifications.

Hangzhou Juntai try to be a system solution supplier for water treatment projects which offer design and all the service, this way can be save much money and time for Customer.

Juntai MBBR media widely used in wastewater treatment; We work with professional environmental engineers and cooperated with three China Universities to ensure high quality while ensuring better service.

Juntai products have been exported more than 54 countries, including America, Mexico, Sweden, Malaysia, Philippines, etc.

Choose Juntai, and Juntai team will return back you full satisfied. We are very happy to cooperate with you and finally bring you satisfactory products. We look forward to receiving your inquiry soon.



# Juntai Company

## 8 Certifications

1. Business License
2. High Tech Enterprise Certification
3. Municipal Certification Enterprises
4. Corporate Credit Rating 3A
5. Certificate of Registration of Trade Mark
6. Certificate of Knowledge Product Management
7. ISO 9001 Certification
8. Patents Certifications



# Juntai Design And Development

The diaphragm is the core component of the aerator, and the R&D and manufacturing capabilities of the diaphragm represent the mastery of the core technology of the aeration.

1. Laboratory
2. Vulcanizers and Tensioners
3. Experimental Internal Mixer
4. Hardness Tester
5. Aging test box
6. Catalysts and other chemical reagents



**Catalysts and other chemical reagents**



**Laboratory**



**Catalysts and other chemical reagents**



**Hardness Tester**



**Experimental Internal Mixer**



**Aging test box**



**Vulcanizers and Tensioners**



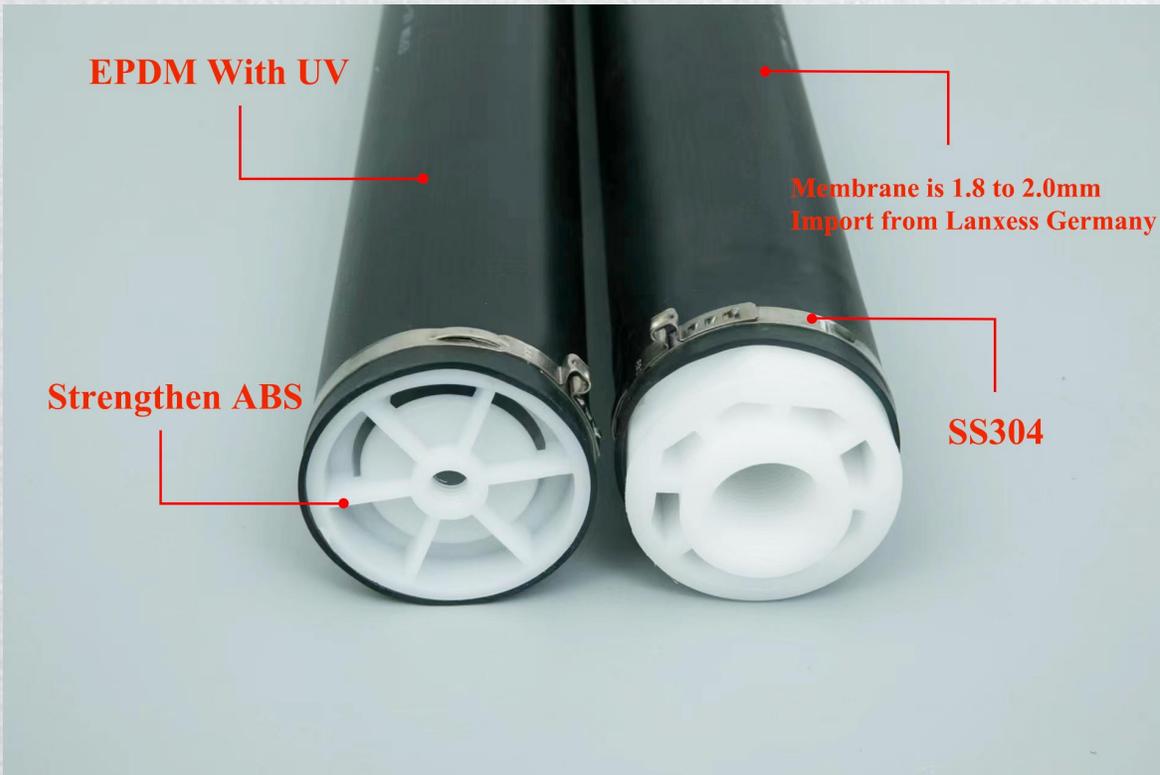
**Experimental Internal Mixer**

# Juntai High Quality Smart Tube Diffuser



Fine Bubble Tube Diffuser can be connected on one side or in pairs to different rectangular and round tubes (ABS material) with the appropriate adapter. **The membranes are manufactured with premium quality EPDM material and are available with fine or coarse-bubble perforation.** The support tubes(ABS or PVC material)can be reused when membranes are replaced. The JUNTAI 2" Tube diffusers are the best solution for long and narrow aeration tanks.Having opportunity to choose different material, connection thread, and size makes JUNTAI Smart tube diffuser fit to any type of waste water. **The diffusers in JUNTAI are produced with the latest technology and the diffusers are used in wastewater treatment plants.** The projection of each diffusers of JUNTAI was done after Research and Development studies that response the requests of waste water treatment plants. **Materials used in JUNTAI diffusers are carefully selected according to the processes of wastewater treatment plants and tested regularly before shipment.**

# Juntai Smart Tube diffuser Details Show



Quality

Security

Specialties

Efficient

## Juntai Smart Tube diffuser Advantage

- 1.Fomular EPDM with UV protector and strengthen ABS.** Juntai Smart Tube Diffuser pipe is made from **UV protector and strengthen ABS material**, which can make the tube diffuser durable.
- 2. Fomular EPDM import from Lanxess Germany.**Juntai Diffuser use the fomular EPDM wich UV protector which import from Lanxess Germany. This kind of EPDM with less plasticizer.
- 3.Low pressure loss and longer duly life.**The Wall thickness of the Membrane is 1.8 to 2.0mm ,which is not too thick and too thinner.
- 4.Quality Control.**Strictly Quality Control when producing, then make each tube diffuser Consistent quality which can make you total Aeration tank easy Maintain
- 5.Double Check valve**
- 6.Non tearing & non clogging --shaped slits.**

# JUNTAI PRODUCT ADVANTAGES

## Bimodal Molecular Weight EPDM Original Gum

Reduced Ventilation Resistance

**20%**

Using EPDM with "bimodal" molecular weight distribution, EPDM with "bimodal" molecular weight distribution, and EPDM with controlled long-chain branching, EPDM has good tear resistance while having high strength and high resilience. Compared with similar products, the ventilation resistance is reduced by 20% when the thickness and aperture are the same.

## Unique Material Anti-blocking Design

No risk of hole plugging for

**8 years**

Optimize the material formula, reduce the extraction of the rubber compound material by the sewage medium, The introduction of hydrophobic materials in the formula increases the polarity of the membrane surface, and has always achieved the purpose of reducing the adhesion of dirt.

## Platinum Hydrosilylation Reaction Sulfurization

Tear strength increased to above **35KN/m**

Platinum vulcanizing agent is a vulcanizing agent with metal platinum as the main active component. Compared with the traditional bis-di-tetra vulcanizing agent, the product has a smaller pressure change and higher mechanical properties.

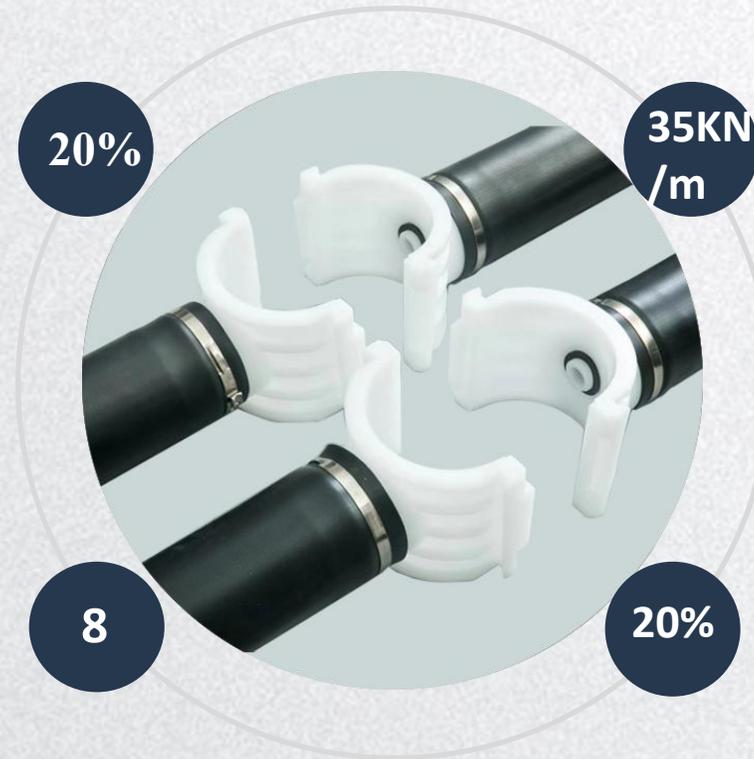
In the vulcanization and cross-linking process, a multi-component catalyst is used to make the hydrogen-containing silyl double bond undergo hydrosilylation reaction in the presence of Pt, resulting in concentrated cross-linking and improving the cross-linking method. In this way, the vulcanized finished product is While maintaining its elasticity, its tearing performance is greatly improved, and the tearing strength is increased to more than 35KN/m.

## Oil-free Formula Design

5-year elastic decay rate

**<20%**

The softener will affect the vulcanization and reduce the cross-linking efficiency. At the same time, the softener will enter the macromolecular gap, affecting the formation of cross-linking bonds and reducing the cross-linking density of the cross-linking network. Therefore, the compression deformation of the cross-rubbing compound increases. Oil-free formula is adopted, 5 Annual elastic decay rate <20%.



# Juntai Smart Tube diffuser ADVANTAGES



## 1. Outstanding Capabilities and Efficiency:

The tiny bubbles are exhausted from the **4000 air holes** with the **size of 1~3mm** on the surface to exhibit up to **25% oxygen transfer efficiency (OTE)** at **4M water depth/air volume 2CMH**. Juntai Smart tube diffuser also has a larger surface to provide high aeration efficiency. It can satisfy the oxygen demand (BOD/COD) required by the aeration tank.

## 2. Prevent The Backflow of Sludge:

With the outstanding design, the **EPDM membrane** closes over the diffuser inlet when the air supply is interrupted, resisting backflow and production of algae. Also, the self-cleaning function makes the high-quality small bubbles spirally rise during aeration to reduce the risk of clogging or fouling.

## 3. High Reliability and Durability:

The rubber membrane is made of ethylene propylene diene terpolymer (**EPDM**) with high deformation resistance and elasticity. With the manufacturing process by injection molding pressure, the thickness of the membrane can be made consistent. **It also has the advantages of low pressure, low resistance curve, low-pressure loss, and can provide excellent chemical resistance and stain resistance.**

# Juntai Smart Tube Diffuser Series



Item number	TD63	TD93	TD113
Bubble type	Fine bubble	Fine bubble	Fine bubble
Tube diameter(MM)	63 (2.5Inch)	93 (3.5Inch)	113 (4.5Inch)
Material	Special Formula EPDM with UV Protector import from Germany /Silicon Membrane		
	Tube material :Acrylonitrile-butadiene-styrene with UV Protector (ABS)		
Length	500/750/1000mm	500/750/1000mm	500/750/1000mm
Connector	3/4NPT	3/4NPT	3/4NPT
Flow Range(m <sup>3</sup> /h)	2-14	5-20	6-28
Bubble Size(mm)	1-2	1-2	1-2
Service Area	0.75-2.5	1.0-3.0	1.5-2.5



# Juntai Smart Tube Diffuser Series



## STD Tube Diffuser specification model table

(other specifications can be customized)

Numbering	Specification	Tube Card Size	Socket Size	Aeration Total length
		mm	mm	
STD 63	Ø63	90	20	500/750/1000
STD 93	Ø93	90	20	500/750/1000
STD 113	Ø113	90	20	500/750/1000

## STD Tube Diffuser

### Applicable Scope:

Municipal sewage and industrial sewage can also be used for the restoration and management of lakes and rivers and aquaculture.

**Aeration Diaphragm:** EPDM Rubber

**Diaphragm Thickness:**  $1.8 \pm 0.1$ mm

**Lined Pipe:** PP-TV, Standard outside diameter is 63mm

### Fasten Clamps:

The standard material is 304 stainless steel; according to different water quality conditions, 316 stainless steel and all-plastic clamps can also be used.

### Thread Standard:

The standard size is DN20 and DN25; other specifications of thread standards can also be customized according to actual needs.

## STD Tube Diffuser technical parameters table

Project	Specification		
	63*500	63*750	Ø63*1000
Working temperature (°C)	0~80	0~80	0~80
Oxygen Transfer Rate 6m	34~39.5%	34~39.5%	34~39.5%
Best ventilation (m3/h)	3	5	7
ventilation volume m3/h	1-6	2-9	3-12
Service area(m2)	0.82-1.26	0.98-2.11	0.7-2.35
Oxygenation capacity(kgO2/h)	0.328	0.422	0.650
Bubble Diametermm	0.8-2.0	0.8-2.0	0.8-2.0
Drag losspa	1600-2500	1700-2750	1900-3000

# Juntai Smart Tube diffuser Accessory Advantage



## 1. Reliable connection



The connection adopts a unique special pipe clamp. It can effectively fasten the tube diffuser.

## 2. Reliable sealing ring



For complex environment, we will adjust the sealing ring to adapt the different environment.

## 3. Anti-buoyancy design



Reduces the force of water buoyancy ,reduces the influence of buoyancy on the bottom fixing bolts and connecting parts

## 4. Anti-vibration design



The unique anti-vibration design effectively reduces the resonance during the air release and reduce the negative effect on the fixing device and the connecting.

# Juntai Smart Tube Diffuser Connector



## Juntai Quick Connector (QC)

Can be used for quickly connect the tube diffuser and effectively fasten the diffuser

## Juntai Steel Connector (SC)

Can effectively reduce the occurrence of shedding. Easy installation

# Juntai Rubber Membrane Production Workshop

After years of operation, Juntai have built a complete diaphragm industry chain. From the research and development of materials, the design of formulas, the preparation of rubber compounds, the vulcanization of diaphragms, to the design and application of systems, we have complete technical experience and production capacity.



**Silicone diaphragm cut**



**Rubber mixing machine**



**Extrusion Machinery**

1. Silicone diaphragm cut
2. Silicone Diaphragm Extrusion
3. Rubber mixing machine
4. Molded Diaphragm
5. Extrusion Machinery
6. EPDM Rubber



**Silicone Diaphragm Extrusion**

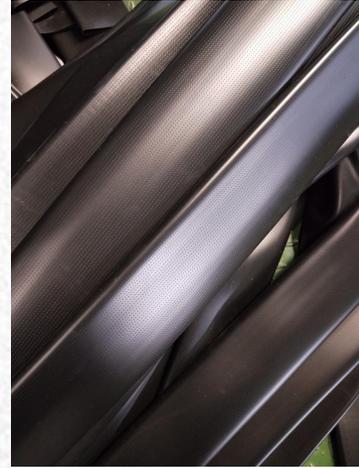
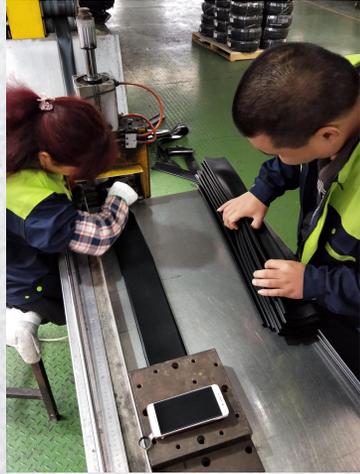


**EPDM Rubber**



**EPDM Rubber**

# EPDM Membrane Production Process



Fomular DPEM import from Lanxess Germany. Juntai Diffuser use the fomular EPDM wick UV protector which import from Lanxess Germany. This kind of EPDM with less plasticizer.

# JUNTAI Excellent Proved EPDM Formula

## Plugging:

**It Is A Chemical Phenomenon  
Not A Physical Phenomenon**

The organic solvent substances in the sewage will form and extract the zinc salt active agent and accelerator in the EPDM Formula

**Zinc salt materials** are also hydrophilic, and they are easy to agglomerate with inorganic particles such as calcium and magnesium in water under aerobic conditions.

As a result, the inner surface of the membrane pores is fouled and the pores are blocked.

## Solutions

1

Excellent formula, oil-free formula, reduce the extraction of the rubber compound material by the sewage medium.

2

The oleylamine surfactant is introduced into the formula to increase the polarity of the inner hole surface of the membrane, and the purpose of reducing the adhesion of dirt has been achieved.

## Traditional EPDM Formula

	Name	Percent	Supplier
1	EPDM	100	Eni 4049 Germany
		-	
2	Carbon Black N660	60	China
3	P-500	40.0	China
4	Zinc oxide	6.0	China
5	S.A1801	1.0	
6	M	0.8	
7	BZ	1.5	
8	TT	0.5	
9	S	0.8	
	Total		

## Juntai Excellent EPDM Formula

	Name	Percent	Remark
1	EPDM	70	ExxonMobil 8600 USA
2	EPDM	30	keltan4450 USA
		-	
3	Carbon Black N550	50	Cabot USA
4	N774	20	Cabot USA
5	organic zinc	3.0	There are complexes of carboxylates and zinc compounds
6	S.A1801	0.5	
7	Oleamide	1.0	(Z)-9-Octadenoic acid amide
8	DCP	4	
9	TAIC	2	
10	S	0.3	
	Total		

# High Quality Material Import From USA

In order to make long life of the Disc diffuser, the most important is the good formula of EPDM.

After 10 years development, Juntai design a very good formula which be 3 to 5 years longer life and lower resistant, high deformation resistance and elasticity

1. Import High quality EDPM 8600 from ExxonMobil
2. High quality Carbon which from Cabot from USA



**EPDM 8600n from EXXONMOBIL USA**



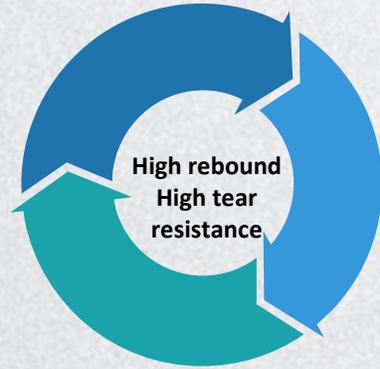
**Carbon Spheron from CAbot USA**

# Juntai Membrane Advantages

## Development of Membrane Materials

Exxon Molecular Weight  
"Bimodal" Distribution EPDM  
Original Gum

DMS company controllable long  
chain branching technology EPDM



Double peroxide vulcanization  
crosslinking technology

The peroxy system forms carbon-carbon crosslinks, which have short crosslinks, high rigidity, high stability, low compression set, and high resilience, but also have the disadvantages of low tear strength and elongation.

The double peroxy curing system improves tear strength and elongation.

The increase in strength makes it possible to increase the number of pores per unit area

Increase the number of holes to: 25-30 holes/cm<sup>2</sup> compare to 20holes/cm<sup>2</sup> of other suppliers

Tubular aeration membrane, 32,000 holes per meter, most other suppliers just only 28000 holes

The pores are 30% smaller, and the ventilation resistance is also 20% smaller

Specifications	Juntai Disc diffuser Number of holes	China Other supplier
SDD215	6400	5600
SDD260	3400	2800
SDD300	8700	6500

In order to make the EPDM film have high elasticity and good tear resistance, we use EPDM with a "bimodal" molecular weight distribution. EPDM with a "bimodal" molecular weight distribution has both high molecular weight polymer mechanical properties and EPDM with low molecular weight polymer processing performance, combined with EPDM with controlled long-chain branching, balances the properties of the polymer well. So that EPDM has good tear resistance while having high strength and high resilience.

## Technical Data Sheet

Project	Unit	Parameter
Tensile Strength	MPa	≥14
Break Elongation	%	≥650
Ozone aging factor 100ppm, after 72H		No cracks
Tear strength	N/m	≥1.9×10 <sup>4</sup>
Hardness	Shao A	55±5
Permanent Compression Set 100% Elongation after 24H	%	<5
Elasticity	%	≥40
Water resistance Tap water 168H weight gain	%	<1.5
Water resistance Tap water 168H volume change	%	<3
Acid resistance coefficient 28%H <sub>2</sub> SO <sub>4</sub> × 24H	%	1.0
Alkali resistance coefficient 38%NaOH × 24H	%	0.9
Oil resistance coefficient 1# standard oil at room temperature	%	1.8

# Juntai PRODUCT ADVANTAGES

## Company Products:

Acetate organic solvent fine chemical products

## Project Overview:

3600 sets of liftable tubular aeration

## Main Problem:

After three months of use, the aeration system was severely blocked, the fan pressure increased, and the dissolved oxygen efficiency decreased, making it impossible to use normally. In the meantime, the imported membrane tubes and the other three domestic membrane tubes were replaced, and the situation could not be improved.

## After optimization:

the membrane tube can be replaced for about 24 months after normal use

After Optimization



**Juntai Tube 24 m Mnths Of Use**

Before Optimization



**Other Tube 3 Months Of Use**

# Tube Diffuser Assembly Process



**1. Tube Diffuser Production Process**



**2. Tube Diffuser Clamp**



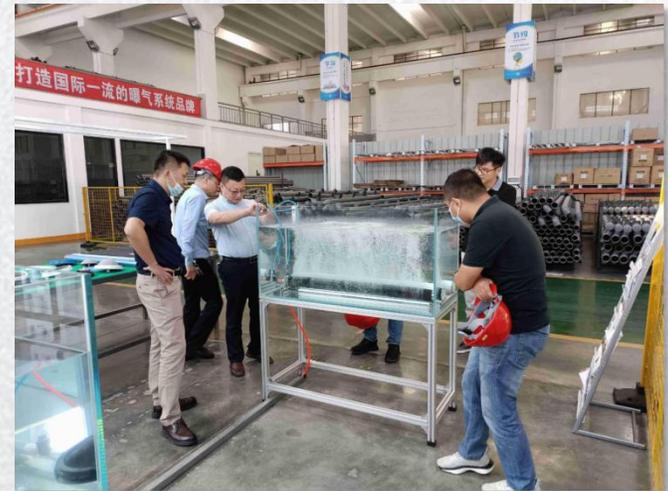
**4. Tube Diffuser Inner Tube Cutting**



**4. Tube Diffuser Inner Tube Cutting**



**5. Tube Diffuser Assembly**



**6. Tube Diffuser Test**

# Well quality control factory

Neat, Clear Workshop, All the material, semi products are kept on container



VS



1. Neat and Tidy, line on and in order with clear floor
2. All the material, Semi product, finished product are **kept in container**, not on the floor to kept well in order
3. All the goods kept clear and **protected well** before package

The most China disc and tube diffuser workshop is messy and dirty, the material, the goods are kept in the same place, without any protector before package

# Engineering Case

## Some cases >>>



**Project Name:** Urban Sewage Treatment Plant in Wangcheng District, Changsha

**Project scale:** 120,000 T/D



**Project name:** Shanan and Shabei Sewage Treatment Plants in Zhoukou City, Henan Province

**Project Name:** North Sewage Treatment of Xiao County, Anhui Province

**Project scale:** 50,000 T/D



**Project Name:** Nanchang Honggutan Sewage Plant

**Project scale:** 400,000 T/D



**Project Name:** Danyang Township Sewage Treatment

**Project Project scale:** 140,000 T/D



**Project Name:** Jingdezhen Second Sewage Treatment

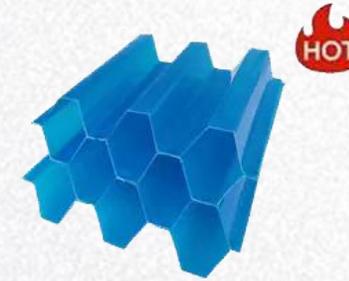
**Project Project scale:** 40,000 T/D

# OTHER HOT PRODUCTS

- 1.MBBR Media
- 2.Tube Settlers
- 3.MBR Menbrane
4. Spong Bio Media
- 5.Disc Diffuser
- 6.Plate Diffuser
- 7.Tube Diffuser
- 8.RO Water Plant
- 9.Water treatment inegration equipment



MBBR Media



Tube Settlers



MBR Membrane



Spong Bio Media



Disc Diffuser



Disc Diffuser



Tube Diffuser



RO Water Plant



Water treatment integration equipment



# 21000m<sup>2</sup> FACTORY

JUNTAI GOODS

**HIGH QUALITY GUARANTEE**

105 LINES OF INJECTION AND EXTRUDER

9 YEARS EXPERIENCE

**THANKS**



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**JUNTAI PLASTIC**

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