

造行业精品 创世界品牌

# 奥联德 AOLIANDÉ 玻璃钢容器及设备

FRP VESSELS & EQUIPMENT

诚信 · 合作 · 共赢  
INTEGRITY COOPERATION WIN-WIN



河北奥联德化工设备有限公司  
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# 公司简介

COMPANY PROFILE



河北奥联德化工设备有限公司是一家专业生产销售成套化工设备，成套玻璃钢产品生产线，同时生产复合材料 SMC产品的公司，通过了ISO9001、ISO14001、ISO45001管理体系认证SGS认证等产品已销往世界各地，美国、加拿大，澳大利亚 巴西、日本、德国、俄罗斯，印度、马来西亚、印度尼西亚、埃及等国家，赢得广大新老客户的支持和信任好评。

● EPC化工设备系列：曼海姆法硫酸钾成套生产设备 硫酸钠生产设备 成套硫酸设备成套氯化钙生产设备。

● EPC成套玻璃钢产品生产线系列：微机控制成套玻璃钢管道，储罐缠绕生产线 成套玻璃钢格栅生产线 成套玻璃钢拉挤型材生产线 SF/FF油罐生产线。

● 玻璃钢产品系列：玻璃钢高、中、低压管道；玻璃钢储罐；玻璃钢塔；整体浇注超级电解槽；SF、FF双层油罐；玻璃钢冷却塔；玻璃钢模压SMC/BMC、拉挤系列产品及其他定制玻璃钢产品玻璃钢防腐等。

河北奥联德化工设备有限公司根据产品类别设立了曼海姆法硫酸钾化工设备设计 制造 安装，多种复合材料产品生产线设计 制造 安装 多种复合材料产品制造三个分公司，通过在专业和技术上的研发和升级并获得了多项专利。公司凭借先进的技术、精湛的工艺、可靠的质量和完善服务，不但有产品的供货能力，还具有有限元分析（材料、结构、产品的设计）项目总承包能力，我公司可为客户提供技术咨询、供货、运输、安装指导等一体服务。

● 主要应用领域：

硫酸钾、电力、水利、冶金、化工、制药、氯碱、海水淡化、印染、造纸、钛白、污水处理、固废焚烧处理、食品酿造、石油贮存、建筑、市政工程、公路设施、军工等领域。



Hebei Aoliande Chemical Equipment Co., Ltd. is a professional company that produces and sells complete sets of chemical equipment, complete sets of fiberglass product production lines, and composite material SMC products. The company has passed ISO9001, ISO14001, ISO45001 management system certification, SGS certification, and other products, which have been sold to countries around the world such as the United States, Canada, Australia, Brazil, Japan, Germany, Russia, India, Malaysia, Indonesia, Egypt, etc. Winning the support and trust of both new and old customers.



● EPC chemical equipment series: Mannheim process potassium sulfate production equipment, sodium sulfate production equipment, complete sulfuric acid equipment, complete calcium chloride production equipment.

● EPC complete set of fiberglass product production line series: microcomputer controlled complete set of fiberglass pipes, tank winding production line complete set of fiberglass grating production line complete set of fiberglass extruded profiles production line SF/FF oil tank production line.

● Fiberglass product series: Fiberglass high, medium, and low pressure pipelines; Fiberglass storage tanks; Fiberglass towers; Integrated casting super electrolytic cell; SF and FF double-layer oil tanks; Fiberglass cooling tower; Fiberglass molded SMC/BMC, extrusion series products, and other customized fiberglass products, including fiberglass anti-corrosion.

Hebei Aoliande Chemical Equipment Co., Ltd. has established three branches based on product categories: Mannheim process potassium sulfate chemical equipment design, manufacturing and installation, and various composite material product production lines design, manufacturing and installation. Through professional and technical research and development, upgrading, and obtaining multiple patents. With advanced technology, exquisite craftsmanship, reliable quality, and comprehensive services, our company not only has the ability to supply products, but also has the ability to perform finite element analysis (material, structure, product design) project general contracting. Our company can provide customers with integrated services such as technical consultation, supply, transportation, and installation guidance.

Main application areas:

Potassium sulfate, electricity, water conservancy, metallurgy, chemical industry, pharmaceuticals, chlor alkali, seawater desalination, printing and dyeing, papermaking, titanium dioxide, sewage treatment, solid waste incineration treatment, food brewing, petroleum storage, construction, municipal engineering, highway facilities, military industry and other fields.



## T 技术检测 TECHNICAL TESTING

检测中心拥有专职的质量负责人员，并按照CNAS认可以及CMA认证的要求建立了一套完整可靠的质量控制体系，保证了测试过程的专业性和公正性。

检测中心与国家标准局以及复合材料行业的权威测试机构保持密切联系；能及时掌握复合材料的技术发展动态、检测技术发展动态、国内外测试标准以及产品标准等信息；保证测试技术、方法的及时有效性、可靠性和先进性。

检测中心拥有多名复合材料、机械设计、结构分析、高分子、非金属材料等等各专业的专业人才，具备了复合材料产品设计和开发能力，可以为客户提供专业的复合材料产品、结构、工艺等的设计开发工作。为客户提供满意的服务。

Testing center has a professional team for testing and quality control. We build a thorough quality control system to make sure that our testing process is accurate and just according to CNAS and CMA requirement.

We keep a closely connection with National Bureau of Standards and authoritative testing institutions of Composite field. We can get the newest informations about testing standard and development direction, and know technology trends of composite material to keep our result reliable. We would improve our testing technology and method timely to make sure it is the latest, reliable, advanced.

Our members are engaged in composite, Polymer, mechanical design, structural analysis, and non-metallic material research. We have a composite material Research and development ability. We can supply client with professional structural design, technology design and composite production. Client is the first. We will provide the most satisfactory service to our client.



精锐的设计团队 An elite design team



長期性能實驗室  
Long-term performance Lab



物理性能實驗室  
Physics Lab



## 产品特性 Characteristics

我公司是生產玻璃鋼容器、化工塔器設備的專業制造廠家，具有多年的玻璃鋼產品生產經驗，生產的玻璃鋼容器最大直徑為50000mm，容積達100000m<sup>3</sup>。玻璃鋼產品具有許多優點：

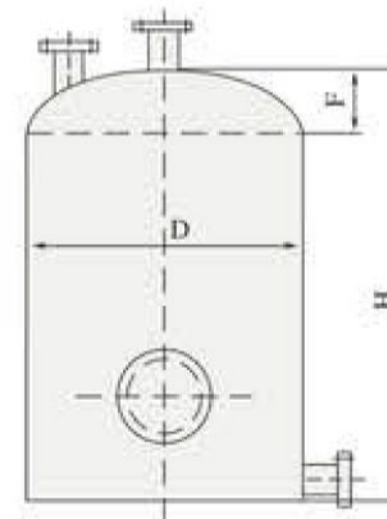
- (1)重量輕：玻璃鋼的密度為1.5—1.9g/cm<sup>3</sup>，為鋼材的1/4，而強度却較高，所以有比強度高的優勢。
- (2)耐腐蝕：通過選用不同種類的樹脂，可以耐各種的酸、鹼、鹽以及多種的油類和溶劑，可廣泛應用到化工防腐的各個方面，可以替代不銹鋼、有色金屬等材料，降低成本。
- (3)內壁光滑易清洗：糙率系數 $n=0.0084$ ，衛生性能好，抗微生物腐蝕，如采用食品級樹脂為基體，則無毒無味，保證儲存介質的衛生要求。
- (4)耐低溫性好：可在零下80℃溫度下使用，適合于寒冷地區。
- (5)熱膨脹系數為 $2 \times 10^{-5}/^{\circ}\text{C}$ ，導熱系數為 $0.2\text{kcal}/(\text{m}^2 \cdot \text{h} \cdot ^{\circ}\text{C})$ ，隔熱性能好。
- (6)成型容易，維修方便：特別適合于結構複雜的設備，大型容器可現場整體纏繞。
- (7)根據用戶的要求可以配做液位計、護欄、爬梯、平臺等部件。

我公司生產的玻璃鋼產品充分發揮了玻璃鋼材料的優點，其應用領域廣泛。主要行業：氯鹼、多晶硅、環保除味、食品釀造、海水淡化、電廠脫硫、鈦白粉、化學纖維、鋼鐵冶金、廢氣處理等行業。

Our Company is a special fabricator that manufactures FRP vessels, chemical tower equipment with rich practical experience. The maxi diameter of the FRP vessel is 50000mm and the volume is 100000m<sup>3</sup>. The characteristics as below:

- (1)Light weight: the density of FRP is 1.5-1.9g/cm<sup>3</sup>, 1/4 of steel's, but higher strength.
- (2)Corrosion resistant: select different resins as per the variety of the media, such as acid, alkaline, salt, oil and solvent. FRP can be used in every chemical corrosion resistance area; it can replace the stainless steel, nonferrous metal etc, and decline the cost.
- (3)Smooth inner surface: easy to clean, the roughness coefficient is  $n=0.0084$ , has good sanitary property, can resist the corrosion of animalcule. If choose the food grade resin, the FRP products can meet the requirement of sanitation without toxicity and without taste.
- (4)Good property against the low temperature: FRP can be used in minus 80℃, suitable for the cold area.
- (5)The thermal expansion factor is  $2 \times 10^{-5}/^{\circ}\text{C}$ , the thermal conductivity is  $0.2\text{kcal}/(\text{m}^2 \cdot \text{h} \cdot ^{\circ}\text{C})$ , has good thermal insulation property.
- (6)Easy to shape, convenience to maintenance: especially easy to make the complicated equipment, the large-scale vessel can be winding at jobsite.
- (7)Can match the accessories, such as level indicator, FRP handrail, ladder, platform etc. as per the requirement of user.

The advantages of FRP have been applied in the products from our Company, and the application field is widely, such as chlorine-alkaline, polysilicon, environmental protection deodorization, foodstuff and brewage, seawater desalination, desulfurization, dioxide titanium, chemical fiber, metallurgy, waste gas treatment, etc.



立式平底貯罐規格 Vertical tank with flat bottom

高度 (mm) \ 直徑 (mm)	1000	1200	1400	1600	1800	2000	2200	2600	3000	4000
1	1370									
2	2650	1890	1440							
3		2720	2080							
4		2660	2730	2140						
5			3380	2640						
6				3140						
7				3640						
8				4140	3320					
9				4630	3700					
10				5140	4090	3370				
11				5640	4490	3690				
12					4880	4010	3360			
15					6060	4960	4150			
18					7240	5920	4940			
20					8030	6550	5460	4000		
25						8140	6780	4950	3840	
30							8100	5890	4550	
35								6880	5260	
40								7770	5970	
50								9650	7390	4340
60									8790	5140
70									10210	5940
80									11630	6740
90										7540
100										8340
110										9140
120										9940
130										10740
140										11540
150										12340

其它规格可按要求设计制做 The other specification can be designed per the requirement



### 立式圆底贮罐规格 Vertical tank with round bottom

高度 (mm)	直径(mm)		支座数															
	1000	支座数	1200	支座数	1400	支座数	1600	支座数	1800	支座数	2000	支座数	2200	支座数	2600	支座数	3000	支座数
1	1460	3																
2	2370	3	1990	3	1550	3												
3	4010	3	2870	4	2200	4												
4			3760	4	2850	4	2280	4										
5					3500	4	2770	4										
6							3270	4										
7							3770	4										
8							4270	4	3460	4								
9							4760	4	3860	4								
10							5260	4	4250	4	3540	4						
11							5760	4	4640	4	3850	4						
12							6260	4	5040	4	4170	4	3540	4				
15									6120	4	5130	4	4330	4				
18									7390	4	6080	4	5120	4				
20									8180	4	6720	4	5650	4	4220	4		
25											8310	4	6960	4	5160	4	4100	4
30													8280	4	6100	4	4800	4
35															7050	4	5510	4
40															7990	4	6220	4
50															9870	4	7630	4
60																	9050	4
70																	10460	5
80																	11880	5

其它规格可按要求设计制做 The other specification can be designed per the requirement

### 卧式贮罐规格 Horizontal tank

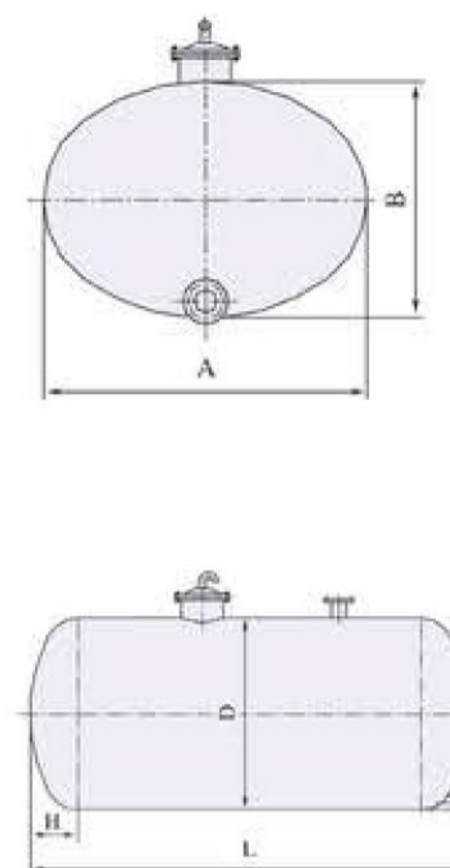
高度 (mm)	直径(mm)		支座数															
	1000	支座数	1200	支座数	1400	支座数	1600	支座数	1800	支座数	2000	支座数	2200	支座数	2600	支座数	3000	支座数
1	1460	3																
2	2370	3	1990	2	1550	2												
3	4010	4	2870	2	2200	2												
4			3760	3	2850	3	2280	2										
5					3500	3	2770	2										
6							3270	2										
7							3770	3										
8							4270	3	3460	2								
9							4760	3	3860	3								
10							5260	3	4250	3	3540	2						
11							5760	4	4640	3	3850	2						
12							6260	4	5040	3	4170	2	3540	2				
15									6120	3	5130	3	4330	2				
18									7390	3	6080	3	5120	2				
20									8180	4	6720	3	5650	3	4220	2		
25											8310	4	6960	3	5160	2	4100	2
30													8280	4	6100	3	4800	2
35															7050	3	5510	2
40															7990	3	6220	3
50															9870	4	7630	3
60																	9050	3
70																	10460	4
80																	11880	4

其它规格可按要求设计制做 The other specification can be designed per the requirement





玻璃钢运输罐规格 Specification of FRP transportation tank

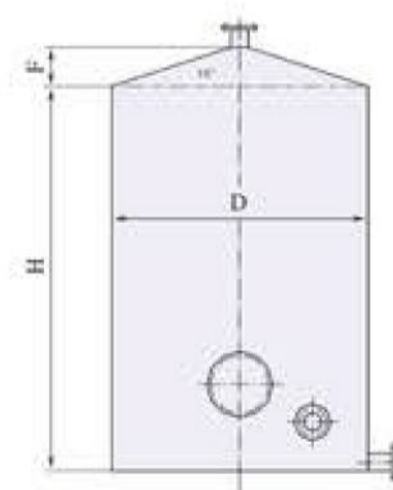


全容积 (m <sup>3</sup> )	长轴 (mm)	短轴 (mm)	封头高度 (mm)	长度 (mm)	支座数
5	1600	1100	300	3850	3
6	1600	1100	300	4580	3
7	1800	1200	350	4390	3
8	1800	1200	350	4980	3
9	2000	1300	350	4650	3
10	2000	1300	400	4800	3
15	2000	1300	400	7650	5
20	2200	1500	400	8000	5
25	2200	1600	400	9350	6
30	2300	1800	500	9600	6
35	2300	1900	500	10580	7
40	2300	1900	500	12000	8
45	2300	2000	500	12800	8
50	2300	2000	500	14200	9

其它规格可按要求设计制做 The other specification can be designed per the requirement

现场缠绕贮罐规格 site wound tank

高度 (mm) 直径 (mm)	5500	6000	7000	8500	10000	12000	15000	20000	25000	30000	40000
容积 (m <sup>3</sup> )											
200	8450	7100									
300	12660	10640	7830								
400		14180	10420	7080							
500			13020	8840							
600				10600							
700				12370	8940						
800				14130	10220						
900					11490						
1000					12760						
1200					15130	10640					
1400						12410					
1600						14180	9080				
1800						15950	10220				
2000							11350				
2200							12480	7030			
2400							13640	7670			
2500							14180	8000	5100		
5000									10200	7080	
10000										14150	8000



其它规格可按要求设计制做 The other specification can be designed per the requirement

# 玻璃钢贮罐和化工容器系列 Tanks and Chemical Vessels



水处理装置 Water treatment device



海水淡化大罐 Seawater desalination max tank



玻璃钢围堰 FRP weir



玻璃钢吸收塔 FRP absorber



玻璃钢水箱 FRP water tank



玻璃钢卧式罐 FRP horizontal tank



PVC/FRP塔器 PVC/FRP tower



玻璃钢异形设备 FRP abnormal equipment



酚醛大罐 Phenolic max tank



玻璃钢沉降罐 FRP sedimentation tank



水处理装置 Water treatment device



玻璃钢吸收塔 FRP absorber



玻璃钢过滤器 FRP filter



海水淡化管道 Seawater desalination pipe



酚醛罐 Phenolic tank



玻璃钢贮罐和化工容器系列  
Tanks and Chemical Vessels

尾气吸收装置 Tailgas absorbing device



现场缠绕大型罐 Site winding max tank



玻璃钢塔器群 FRP towers



玻璃钢吸收塔 FRP absorber



呋喃罐 Furan tank



水处理设备 Water treatment device



玻璃钢罐 FRP tank



玻璃钢容器群 FRP vessels



玻璃钢洗涤塔 FRP scrubber



玻璃钢方槽 FRP rectangular tank

## 塔器设备 Tower Equipment

玻璃钢以其重量轻、强度高、耐腐蚀范围广、可设计性好等特点在氯气干燥、钢铁冶金废气处理、发酵和酿造、粘胶纤维、钾肥和复合肥 (NPK) 等行业得到广泛应用。

我公司通过采用有限元分析软件，在塔器设备的设计、制造方面使玻璃钢的各项性能得到了更全面、更合理、更有效的发挥。

在设计之初就根据塔器设备的使用行业、工作条件（工作环境）进行科学合理的选材和精确细致的结构强度计算，并且在生产制造过程中依靠严格的管理、先进的设备、完善的工艺制造出性能优良的玻璃钢塔器设备。

通过选用不同的树脂、纤维铺层等方法，可以满足不同介质、不同温度、不同压力下的耐腐蚀和强度要求。还可以设置检修平台，以便操作。

在特殊工况下，如有机溶剂、高温、高纯介质等，可以采用PVC、PP、HDPE、PVDF与玻璃钢复合制作，既能满足耐腐蚀的要求，还能有足够的强度，拓宽了应用领域。

我公司可以按照化工行业标准、国际标准设计、制作玻璃钢设备，也可以根据用户的要求制作非标设备。

As the characteristic of lightweight, high strength, corrosion resistance and good designability, FRP products are widely used in chlorine drying, metallurgy, waste gas treatment, brewage, viscose fiber, potash fertilizer, compound fertilizer (NPK) industries, etc.

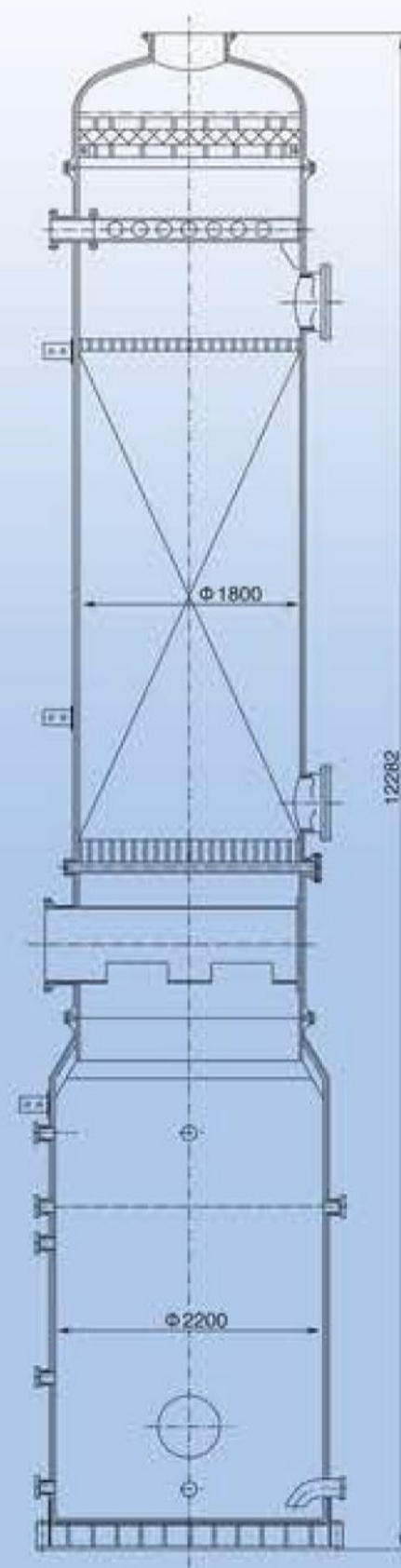
Adopting finite element analysis, Our Company has exerted the every excellent property of FRP more comprehensive, more reasonable, more effective.

Based upon the different usages and the working condition, through the scientific selection of material, and accurate structural calculation, we do execute the strict management, adopt advanced equipment and well-rounded process to manufacture FRP tower equipment.

To meet the requirements for resisting the different media, different temperature and pressure, by the different resins or lamination types. The design of platform can simplify the inspection and maintenance.

Under the special conditions, such as organic solvent, high temperature, high purity medium etc, we can use PVC, PP, HDPE, PVDF as inner liner, reinforced with FRP to form composite products that can meet the requirements of the corrosion resistance and strength.

Our Company can fabricate FRP equipment per chemical industrial standard, or international standards and also can manufacture non-standard equipment according to the user's requirements.



填料塔 Packing tower

## A forest of towers 塔器产品



玻璃钢风管 FRP duct pipe



玻璃钢吸收塔 FRP absorber



玻璃钢填料塔 FRP packing tower



尾气吸收塔 Tailgas absorber



玻璃钢洗涤塔 FRP scrubber



玻璃钢方槽 FRP rectangular tank



玻璃钢风管 FRP duct pipe



呋喃罐 Furan tank



污水池盖板 Cover plate of sewage pool



玻璃钢吸收塔 FRP absorber



生物罐 Biological tank

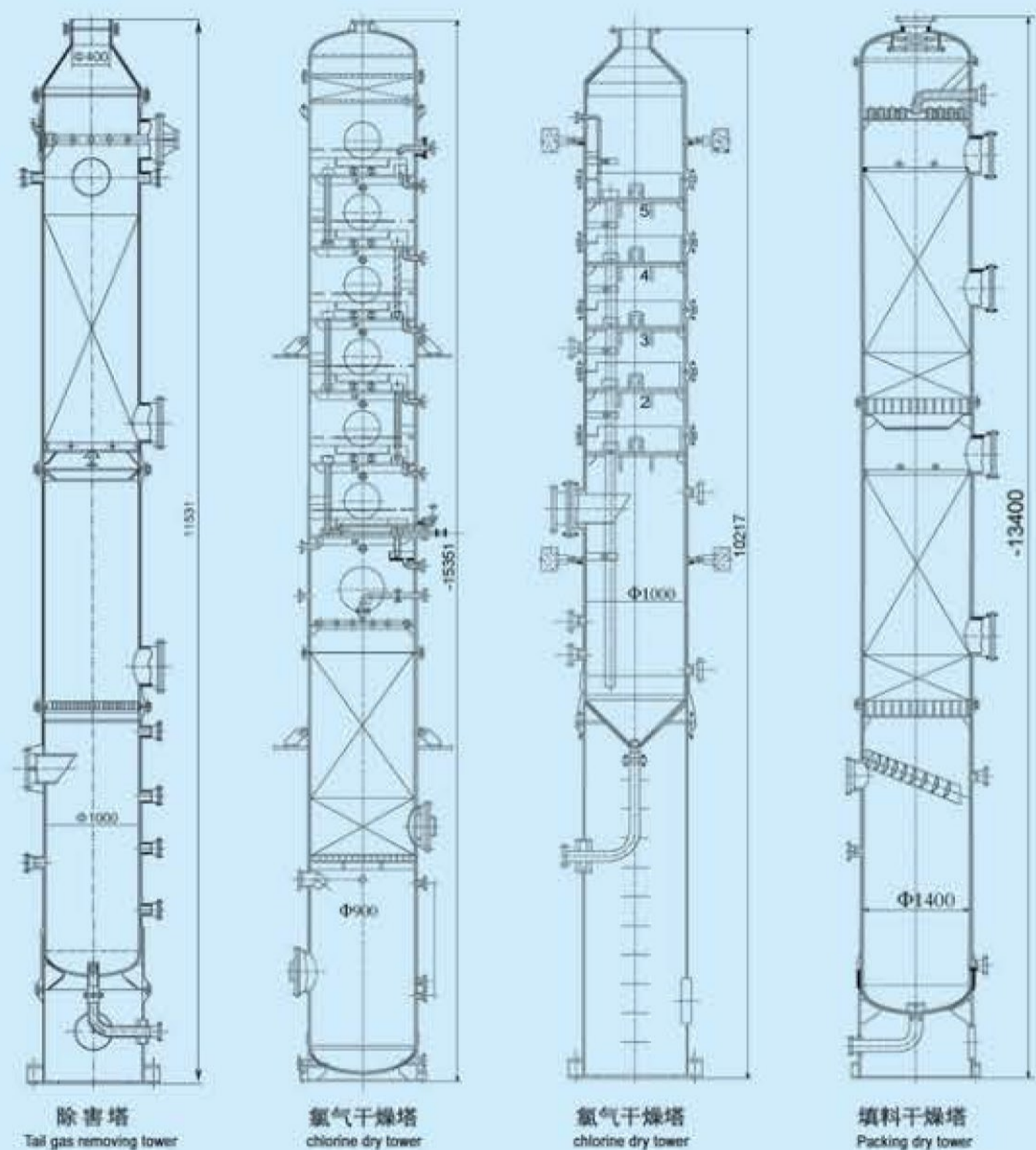


玻璃钢吸收塔 FRP absorber



尾气吸收塔 Tailgas absorber

### 塔器設備結構示意圖 Tower Equipment



SF干燥塔 SF dry tower



FRP复合罐 FRP composite tank



反冲洗滤液贮罐 back flush filtrate tank

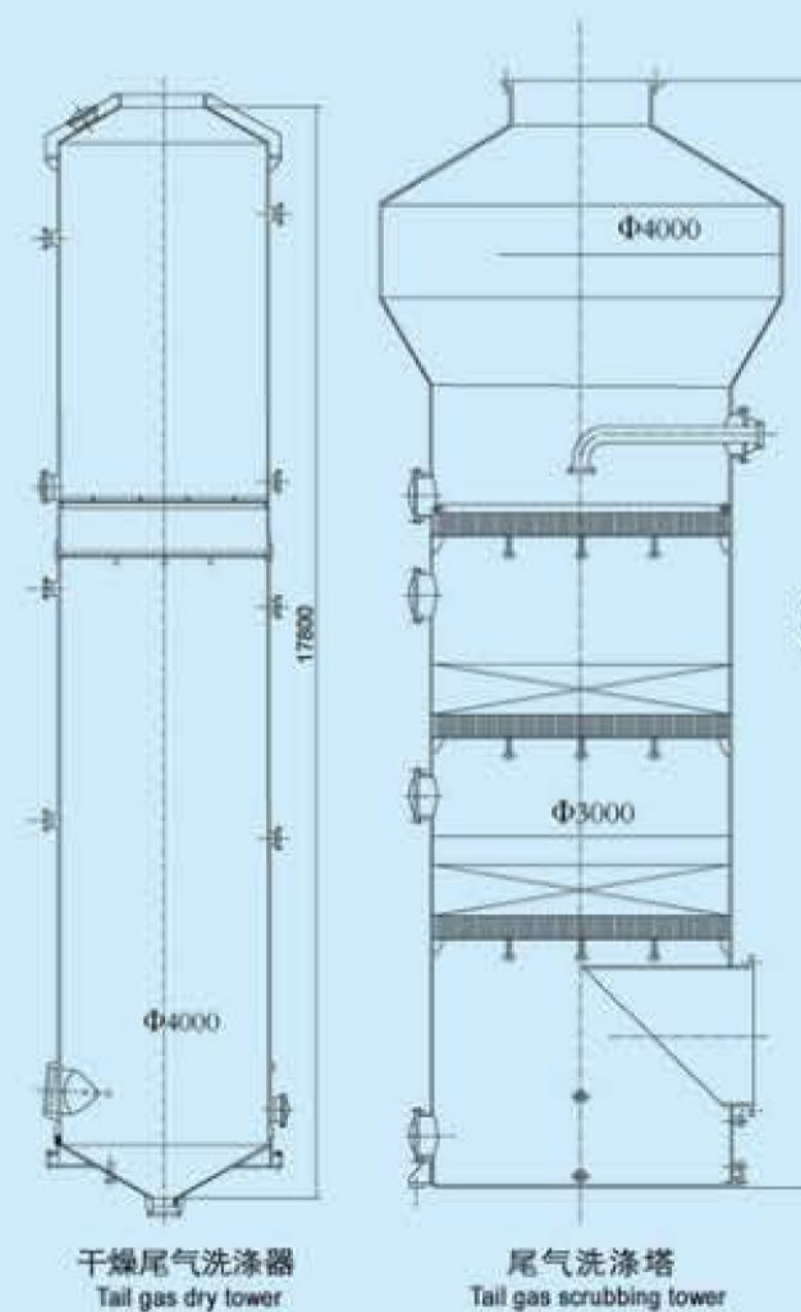


贮冰保温罐 Ice storage insulation tank



整装待发的塔器 Towers for delivery

### 塔器設備結構示意圖 Tower Equipment



旋流塔 Cyclone tower



填料塔 Packing tower



洗涤塔 Scrubbing tower

## 亚洲第一套烟塔合一工程 — 北京 (φ7m)

由德国GEA公司设计，能耐特公司承造，安装在北京华能热电厂的亚洲第一套烟塔合一玻璃钢烟道工程

The Asian first set of fume pipe and tower syncretic project designed by GEA from Germany, fabricated by KNT FRP Co., Ltd. and installed in Beijing Huaneng Thermal Power Plant.



北京华能电厂烟塔合一工程 (φ7000 × 120000)



## 世界最大烟塔合一工程 — 徐州 (φ8.5m)



山东滨州热电厂烟塔合一工程  
Fume pipe and tower syncretic project in Binzhou thermal power plant



哈爾濱第一熱電廠烟塔合一工程  
Fume pipe and tower syncretic project in Habin 1st Thermal power Plant



吊裝現場 Site lifting

### 内蒙古大唐國際托克托發電有限責任公司施工外景

当现代工业文明吞噬了历史的痕迹，留下的恐怕只能是苍白的记忆。仰望蓝天，我们想找回迷失的家园，蓝天入眼，我们期待好雨润物无声。



电厂混凝土烟筒内衬玻璃钢工程  
FRP lining of concrete chimney