

## BAF Tank Calculation

Blue block is the design datameter : be filled in  
Brown: calculate process data  
Red : last result for your process

### 1.BAF Tank-Parameter

Water quantity Q	2000	m3/d	BAF pool area	26 93333333	
Inlet BOD	120	mg/l	Number of BAF tanks n	2	
Effluent BOD	25	mg/l	BAF pool side length	3 669695719	
Volume load	3	3-5kg/(m3*d)	BAF pool side length take	5	
Height of packing layer H1	2.5	Generally 2.5-4.5	BAF tank volume	67 33333333	
Distribution chamber height h1	1.2	1.2-1.5	H	5.5	
Supporting layer h2	0.3	0.2-0.3			
Clear water area h3	1	0.8-1.0			
Extra high	0.5	0.3-0.5			
Packing volume	125	125			
The gas volume can be calculated according to EH					

### 2.When selecting a blower

Q	hourly flow	inlet BOD	outlet BOD	carbon equivalent	
2000	83 33333333	0.075	0.015	1.6	
Fan air volume m3/min	average oxygen demand		EA	GS (air volume)	
3 174603175	8	0.26	0.15	190 4761905	

### 3.Backwash air volume

Strength of backwash air volume	0.2-0.8	m3/(m2*min)	13 46666667	m3/min	
Water flushing strength	0.5-1.0	m3/(m2*min)	808	m3/h	9 696
	21.6	m3/(m2*h)	581.76		
Number of long-handled filter heads	(36 filter heads per square meter)				
669.6	Taizhou Zhongcheng		36-49		2450
Number of filter plates	36 filter heads per square				
Standard Filter Plate Size	980*980*100				
			Price		
Filter plate is cast in one piece		thicknesses 180mm	1400-1500m2		
Filter head			12 yuan/pc		
Filter media		1500m3			
Single hole aerator	0.28m3/个				
	680 2721088	50 per unit (cost 22)			0 039592
	25 2576278				
water dispenser	1900yuan/pcs				

### 4.Based on residence time

T	1.5	h			
Upflow velocity	2	m3/h			
Effective water depth	3	m			
Water volume Q	2000	m3/d			
Hourly flow rate	83 33333333				
Number of BAF pools n	2				
Effective volume of pool	125				
Individual pool area	20 83333333	104 16666667			
Individual pool width	5				
Individual pool length	4 166666667	Take 6.0m			
Individual pool length taken	5				
Packing layer height H1	3				
Distribution chamber height h1	1.2	1.2-1.5			
Support layer h2	0.2	0.2-0.3			10L/m2*s
Clear water area h3	0.8	0.8-1.0			
Ultra-high	0.3	0.3-0.5			
Total height	5.5				
Packing volume	125				
Number of long-handled filter heads	1800	(每平方米有36-49个滤头)			
Single hole membrane aerator	1880				
Aeration volume	8.4				
Backwash volume	0.5	atmospheric recoll strength>10	Um2*s	0.6	m3/m2*min
Aeration volume	3 174603175	m3/min			
Blower	3.19				
Single Hole Membrane Aerator	683 5714286				
Backwash air volume strength	0.2-0.8	m3/(m2*min)	12.5	m3/min	
Water flushing strength	0.5-1.0	m3/(m2*min)	625	m3/h	
Number of long-handled filter heads	(36 filter heads per square meter)				
1500					
Backwash air volume strength					
Water flushing strength					