

FRP Multimedia filters design table

Max feed water turbidity 5 to 8 NTU



Sizing																
Diameter		Height		Area	Volume	Flow IDEAL	Flow MAX	Backwash flow	Air backwash	Gravel height	Gravel volume	Sand Height	Sand Volume	Anthracite Height	Anthracite Volume	Pipe diameter
inch	m	inch	m	m ²	m ³	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m	L	m	L	m	L	mm
18	0,46	65	1,65	0,16	0,27	1,31	2,46	7,39	9,85	0,15	24,63	0,30	49,25	0,50	82,09	32
21	0,53	62	1,57	0,22	0,35	1,79	3,35	10,06	13,41	0,15	33,52	0,30	67,04	0,50	111,73	32
24	0,61	72	1,83	0,29	0,53	2,33	4,38	13,13	17,51	0,15	43,78	0,30	87,56	0,50	145,93	40
30	0,76	72	1,83	0,46	0,83	3,65	6,84	20,52	27,36	0,15	68,41	0,30	136,81	0,50	228,02	50
36	0,91	72	1,83	0,66	1,20	5,25	9,85	29,55	39,40	0,15	98,50	0,30	197,01	0,50	328,35	60
42	1,07	72	1,83	0,89	1,63	7,15	13,41	40,22	53,63	0,15	134,07	0,30	268,15	0,50	446,92	75
48	1,22	72	1,83	1,17	2,14	9,34	17,51	52,54	70,05	0,15	175,12	0,30	350,24	0,50	583,73	75
65	1,65	86	2,18	2,14	4,68	17,13	32,11	96,34	128,45	0,15	321,13	0,30	642,25	0,50	1070,42	110

Min. Pressure	0,1 bar	0,1 bar	0,1 bar	0,3 bar
Max. Pressure	According to vessel design			

Material selection				
		Gravel	Sand	Anthracite
Diameter (D90%)	mm	4	0,98	2
Diameter (D60%)	mm	5	0,75	1,5
Diameter* (D10%)	mm	3	0,5	1
Uniformity coef.		< 1,3	< 1,6	< 1,6
Grain density	kg/m ³	2600	2600	1500
Position		bottom	intermediary	top

Notes: For filters larger than 30 inches use vessels with top and bottom ports
 Backwashing with air is highly recommended.
 The height of the gravel layer begins from the filtered water collector top.
 It's good to consider some extra gravel to fill the bottom of the tank.
 The tubular filter water collector must have the star geometry with less than 0,4mm opening.
 Coagulation should be considered when filtering raw surface water.
 Backwash should be considered every 24h, when the turbidity of the treated water increases or when the differential pressure increases 0,1 bar.
 * Means that 10% of the grains pass thru the specified sieve. In some countries this term means the opposite.

Notice Granular filtration is a physical-chemical process subject to complex mechanisms. Engineering process design is highly recommended.
 This is a typical design and may not work in some cases. Use it at your own risk.