



## The Iron Curtain Filtration System



**Chemical Free:**  
**No Potassium Permanganate**  
**No Salt**  
**No Chlorine**

  
**Hellenbrand**<sup>®</sup>  
What's In Your Water?<sup>™</sup>

# Single, Twin, Triplex and Fourplex Iron Curtain™ Sizing Guide for Commercial Applications

Hellenbrand offers a wide range of filter designs to meet both end-user and dealer needs, including fiberglass, polyglass and composite tanks with top-mounted controls and steel tank systems with side-mount controls.

The following Iron Curtain Application Sizing Guide will provide you with a quick reference to various system designs including single, twin and multiple filter systems to meet your particular application needs for service flow rate and backwash rate requirements.

## Sizing Instructions

1. Select the filter(s) that meets both your service and backwash rate requirements. Water service supply must be able to maintain backwash rate at a minimum of 30 psi.

NOTE: Filter backwash rates are always higher than service flow rates. The available backwash water in gallons per minute (gpm) at a minimum continuous pressure of 30 psi, will limit the size of the filter for your application. For most applications multiple filters will be needed to obtain the necessary service flow rate. Multiple filters are also necessary when there is a continuous need for filtered water. Backwashing and rinsing with filtered water is recommended for higher water quality.

2. Select the correct aeration tank that meets the service flow rate needed. See next page for aeration tank options.
3. Select the correct Iron Curtain Remote Control Center (ICRCC) for the aeration tank selected.

## Service Flow Rates (GPM)

Model No.	Sq. Ft. Area	Filter Tank Size	Single Flow Rate			Twin Flow Rate			Tri-Plex Flow Rate			Four-Plex Flow Rate			Back-wash Rate GPM <sup>1</sup>
			Continuous <sup>1</sup> 3 gpm	5 gpm	Peak <sup>2</sup> 7 gpm	Continuous <sup>1</sup> 3 gpm	5 gpm	Peak <sup>2</sup> 7 gpm	Continuous <sup>1</sup> 3 gpm	5 gpm	Peak <sup>2</sup> 7 gpm	Continuous <sup>1</sup> 3 gpm	5 gpm	Peak <sup>2</sup> 7 gpm	
IC-10	.545	10x54	1.6	2.7	3.8	3.2	5.4	7.6	4.8	8.1	11.4	6.4	10.8	15.2	5
IC-12	.785	12x52	2.4	3.9	5.5	4.8	7.8	11.0	7.2	11.7	16.5	9.6	15.6	22.0	8
IC-13	.921	13x54	2.8	4.6	6.4	5.6	9.2	12.8	8.4	13.8	19.2	11.2	18.4	25.6	10
IC-14	1.07	14x65	3.4	5.3	7.5	6.8	10.6	15	10.2	15.9	22.5	13.6	21.2	30.0	12
IC-16	1.38	16x65	4	7	10	8	14	20	12	21	30	16	28	40	15
IC-18	1.76	18x65	5	9	12	10	18	24	15	27	36	20	36	48	20
IC-21	2.4	21x62	7	12	17	14	24	34	21	36	51	28	48	68	25
IC-24	3.14	24x71	9	16	22	18	32	44	27	48	66	36	64	88	35
IC-30	4.9	30x72	15	25	34	30	50	68	45	75	102	60	100	136	50
IC-36	7.06	36x72	21	35	49	42	70	98	63	105	147	84	140	196	70
IC-42	9.62	42x60 STL	29	48	67	58	96	134	87	144	201	116	192	268	115
IC-48	12.57	48x60 STL	38	63	88	76	126	176	114	189	264	152	252	352	150
IC-54	15.90	54x60 STL	48	80	111	96	160	222	144	240	333	192	320	444	190
IC-60	19.63	60x60 STL	59	98	137	118	196	274	177	294	411	236	392	548	235
IC-66	23.76	66x60 STL	71	119	166	142	238	332	213	357	498	284	476	664	285

<sup>1</sup>Backwash rates are based upon water temperature of 50°. Warmer water temperatures require higher backwash rates.

1. See definition of Continuous Flow Rates on Page 3.

2. See definition of Peak Flow Rates on Page 3.

## Aeration Tanks

Tank Size	Contact Gallons	Flow Rate		IC 2.0 <sup>3</sup> w/Macro Needs Check	ICRCC <sup>3</sup> Model Number	Aeration <sup>3</sup> Tank w/Check	Reference
		Continuous GPM <sup>1</sup>	Peak GPM <sup>2</sup>				
13x54	18	6	9	103403	N/A	N/A	
14x65	26.8	9	13	103404	111710	103291	
16x65	32.4	11	16	103405	111710	103294	
18x65	44	15	22	103406	111710	103296	
21x62	54	18	27	N/A	111711	103000	
24x72	79.2	26	40	N/A	111711	106704	
30x72	122	41	73	N/A	111711	103307	
36x72	163	54	81	N/A	111711	103312	
42x72	224	74	112	N/A	103887	103392	7G5
48x72	305	101	153	N/A	103887	103409	7G5
54x60	469	156	235	N/A	103887	Steel	7G5
60x60	588	196	294	N/A	103892	Steel	7G7
66x60	722	241	361	N/A	103892	Steel	7G7
72x60	875	292	438	N/A	103892	Steel	7G7

1 - Designed to provide a minimum of 3 minutes contact time at the flow rate shown. Used for iron, manganese, and hydrogen sulfide reduction.

2 - Designed to provide a minimum of 2 minutes contact time at the flow rate shown. Used for iron reduction only.

3 - Suggested part number. Check with engineer per application.

## Flow Rates

**Continuous Flow** - Where a steady flow of water is flowing throughout the filter for 30 minutes or longer.

**Peak Flow** - Where interrupted patterns of water usage occur at less than 30 minute intervals.

## Performance

For Iron to oxidize and precipitate within the filter system, the influent water must have:

1. A pH of at least 6.8. If the pH is below this, it should be increased.
2. No organics such as tannins. Organics may prevent the oxidation process from occurring.
3. Sequestering agents such as poly phosphates must not be present. They also prevent the oxidation process from occurring.
4. Manganese is not effectively removed by oxidation filtration, unless the pH is 8.5 or higher. When it is not practical to increase the pH to this level, manganese should be removed by ion exchange.
5. If Hydrogen Sulfide is present, it will consume the oxygen in the water very quickly, leaving less available for oxidizing and precipitating the iron. Depending on the water analysis, flow rates greater than 3 gpm/SqFt. maybe possible. Using a larger aeration tank(s) or more frequent recharge cycles and a modified media bed will improve the results. Always use the special media bed when H<sub>2</sub>S is present above 2ppm.

## Sizing Instructions

1. Select the filter(s) that meet both your service and backwash rate requirements. Additional capacity can be added as triplex and quad systems.

**NOTE:** Filter backwash rates are always higher than service flow rates. The available backwash water in gallons per minute at 30 psi continuous will limit the size of the filter for application. Multiple filters are also necessary when continuous supply is required. Backwashing and rinsing with filtered water is recommended for higher water quality.

2. Select the correct aeration tank that meets the service flow rate of the system
3. Steel tank and/or custom design systems available upon request.