



WHOLE HOUSE WATER FILTRATION SYSTEM

The water supply to homes, offices and industrial facilities contain two major groups of contaminants. These include suspended and dissolved solids. Homes and businesses with Carbon Filters, Water Softeners (Ion-Exchange Resins) and Reverse Osmosis (R/O) systems remove dissolved solids, not suspended solids.

Suspended solids include rust from metal piping, naturally occurring iron oxide, silica from wells, sand, sediment, and dirt. These discolor drinking water, ice cubes, and stain toilets, sinks, and clothing when washed in contaminated water

Suspended solids reduce the life and foul sensitive Carbon Filters, Water Softeners, R/O Systems, Icemakers, and Water Heaters.

All industrial operations protect their sensitive process systems from suspended solids contamination with filters designed to remove SS particles from 0.5 to 100 microns in size.



For homeowners and small businesses, a suspended solids filter must be able to remove very fine particles over a long period of time without maintenance. Even a small home using 20,000 gallons of water/month may contain over 1.0 pound of solids /yr.



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Your water source will determine the color, quantity and size of solids. Water systems allow solids to settle to low points in piping, water heaters, and toilets. When your flow is high, settled solids will fluidize and foul your carbon filters, I-E, and R/O systems. Table 1. includes water/solids data for just one year. One should consider solids build-up from multiple years and upset situations such as city pipe and fire hydrant flushing.

Gallons/Month	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000	100,000
Gallons/Year	120,000	240,000	360,000	480,000	600,000	720,000	840,000	960,000	1,080,000	1,200,000
Lbs./Yr. @ 0.2 mg./l.	0.2	0.4	0.6	0.8	1	1.2	1.4	1.6	1.8	2
Lbs./Yr. @ 0.5 mg./l.	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
Lbs./Yr. @ 0.7 mg./l.	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7
Lbs./Yr. @ 1.0 mg./l.	1	2	3	4	5	6	7	8	9	10

Table 1. Water Use Per Year Versus Pounds of Solids/Year



**Figure 1. Solids Captured from 2.6 gallons of water (10 liters)
Sample Contaminants Range from 0.2 mg/l to 0.5 mg/l.**

The majority of city and well water samples have size distributions which suggest that the filter micron rating for home and commercial water should remove particles 2 microns and greater in size. The filter housing (pressure vessel) must last the life of the home and includes an electro-polished 304 Stainless Steel unit holding a 40" x 6.25" polypropylene 2 micron filter rated at 99.98%, Beta 5000 efficiency.

This system should be installed by a licensed plumber and it should be insulated and electrically heat traced for freezing temperatures. The recommended filter (shown below) will hold up to 17 pounds of solids. This allows for over a full year of operation even at a solids contamination of 1.0 mg/l and a flow of 100,000 gallons/month. FMT recommends that the filter be changed at least once a year to reduce the potential for bacterial growth on the filter media. The filter code is [FMT-74E-PP406E](#) and that link will take you to the filter data sheet. A full explanation of a filters Beta Ratios and % Solids removal can be found [here](#).



System Setup



Vertical Filter Removal, Used Filter On Left,
New Filter Being Installed

System Specifications

Filter Vessel:

304 Stainless Steel Construction
1" NPT Inlet/Outlet Connections (150 LBS ANSI)
1" NPT Inlet and Outlet Flex Hoses Included To Connect To Owners Valves
(1) 3/4" NPT Drain
(2) 1/4" NPT Gauge, Clean Side
(1) 1/4" NPT Cover Vent
125 PSIG Rating @ 250°F
EPDM Gasket Cover Seal
Accepts (1) 700 Series FMT 30" Overall Length Filter Cartridge
Maximum Flow, 70 Gallons/Minute
Unit Shipped with 1 (One) Filter Installed In Vessel

Particulate Filter:

All FDA Approved Polypropylene Materials of Construction
Absoluter Rated 2 Microns @ Beta 5000 (99.98%) Efficiency
No Adhesives, No Silicone
Computer Pleated and 100% Heat Sealed Construction
Two (2) 226 EPDM O-Rings (Double O-Ring Seal)
30" Overall Length
28" Filter Length
Filter Code FMT-74E-PP306E ([Data Sheet](#))
Holds Up To 15 Pounds of Solids

Installation Manual Included

Optional Accessories:

Insulation Package
Heat Trace Package
Water Testing

Notes:

Clean Pressure Drop Across the System Will Be Less Than 1 PSI. When Completely Fouled, The Pressure Drop Will Rise to a Maximum of 35 PSI, the Filter should be Replaced