

# Reticulated KDF Cubes Engineering Guidelines (POE)

- **Service flow:** 8 gpm per lb
- **PSID:** Non Detectable w/Reticulated KDF Cube Filtration Media!
- **Bed expansion, backwash** (backwash not required for all applications/see notes): 10 to 15%
- **Purge/rinse:** 3 min
- **Free board** (not required for all applications/see notes): 20%
- **pH range:** drinking water: 6.5 to 8.5
- **Water temperature, influent:** 35°F to 150°F
- **Capacity:** 950g per cubic inch of media
- **Volume:** 22lbs per cubic foot
- **Displacement:** 10.5-12% Foam Volume (18oz bottle filled w/KDF Cube holds 16oz water when filled)
- **NSF Certifications:** 42 & 61
- **Recommended Media** not be stored longer than 1 year prior to use, always maintain wetness



This bulletin describes the proper use of KDF media in residential (whole house), commercial, institutional, and light industrial buildings and facilities with maximum chlorine, iron, and H<sub>2</sub>S concentrations of 5 ppm/mgl.

## CITY WATER TREATMENT NOTES:

Backwashing is not required for applications involving the treatment of municipally treated water supplies where de-chlorination, soluble cation heavy metals reduction and bacteriostatic properties are the main goal for treatment. Utilizing Reticulated KDF Cubes as pre-treatment for Water Softeners will eliminate most, if not all, premature degradation of Ion Exchange Media and will provide similar protection to RO Membranes. Basic pre-sediment filter upstream of a non backwashing KDF or KDF/GAC system is recommended to prevent particulate buildup. All mechanical issues associated w/extraordinarily dense granular KDF media (such as packing, channelling, pressure loss or plugging) are eliminated by utilizing reticulated KDF Cubes. KDF-55 Cubes are recommended for use with City Water that is treated with traditional Free Chlorine Disinfectant. KDF-85 Cubes are recommended for use with City Water that is treated with the alternative disinfectant Chloramine (also referred to as combined chlorine & total chlorine on reports).

## WELL WATER TREATMENT NOTES:

KDF-85 is recommended for the treatment of notable issues common to private well water including Iron, Iron/Sulphur Bacteria & Hydrogen Sulfide (up to 5ppm HS<sub>2</sub> & 5ppm Iron). In electrochemical reduction processes of these contaminants, surface products are formed when KDF-85 media are used in point-of-entry (POE) water treatment systems. These weakly bonded precipitates must be periodically backwashed and purged from the treatment system. Unlike Granular KDF-85 that requires frequent extended backwash cycles twice that of service flow, Reticulated KDF-85 treatment systems typically only require a weekly/by-weekly backwash at the rate of service flow. As a result, manual or automatic backwash valves may be utilized and waste water due to backwash cycles can be kept to a minimum. KDF pretreatment of Water Softeners, Reverse Osmosis and other Ion Exchange systems can eliminate premature degradation of the Media Beds & RO membranes in well water applications as well.

KDF Cube and Granular Carbon Tank Sizes*							
Tank Size	KDF/GAC Capacity (Gallons)	Cubes (lbs)	Cubes (Cu.Ft.)	Carbon (lbs)	Carbon (Cu.Ft.)	Total Volume (in.^3)	Service Flow**
7x35	250,000	5	0.25	12	0.42	1165.5	8gpm
8x44	375,000	8	0.4	22	0.77	2007.65	10gpm
10x44	600,000	12	0.6	32	1.12	3026.74	12gpm
12x52	1,000,000	20	1	57	2	5125.932	18gpm
14x65	2,000,000	30	1.5	114	4	9379.23	25gpm

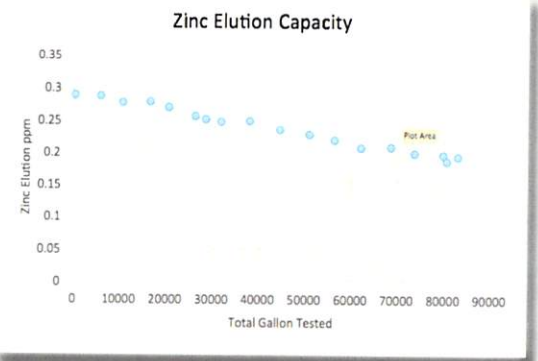
\* KDF-55/GAC is recommended for free chlorine treated municipal water. KDF-85/Catalytic GAC is recommended chloramine treated municipal water. KDF-85/Catalytic GAC systems are also ideal for well water treatment but it is recommended that tank size be increased to provide 20% free board & manual/automatic backwash valve be utilized for backwash once a week (KDF-85/CatGAC systems will treat up to 5ppm Iron, Hydrogen Sulfide and control Iron/Sulphur Bacteria, in addition to removing offensive taste/order and other aesthetic issues common to private wells).

\*\* Service Flow estimated based of flow restrictions of The Housing Size & Typical Pipe Size these sized vessels are compatible with installation on, not KDF Cube Media Performance limitations

KDF Cube Only Tanks/Cartridges					
Tank Size	Capacity (Gallons)	Cubes (lbs)	Cubes (Cu.Ft.)	Total Volume (in.^3)	Service Flow
4.5 x 10(BB)	68,875.00	1.5	0.041956	125	6
4.5 x 20(BB)	137,750.00	2.9	0.083912	250	8
7x13	194,998.90	4.1	0.118786	353.9	9
7x35	642,190.50	13.5	0.391198	1165.5	10
8x44	1,106,215.15	23.3	0.673864	2007.65	12
10x44	1,667,733.74	35.1	1.01592	3026.74	18
12x52	2,824,388.53	59.5	1.72051	5125.932	35
14x65	5,167,955.73	108.8	3.148121	9379.23	60

\*KDF-55 Only Systems can be utilized for De-chlorination applications in both Hot & Cold water treatment applications. KDF-85 only systems are great for well water, treating up to 5ppm Iron, Hydrogen Sulfide and controlling Iron/Sulphur Bacteria. It is recommended that tank size be increased to provide 20% free board & manual/automatic backwash valve be utilized for backwash once a week.

\*\* Service Flow estimated based of flow restrictions of The Housing Size & Typical Pipe Size these sized vessels are compatible with installation on, not KDF Cube Media Performance limitations



Above graph shows cartridge w/ 30 cubic inches of KDF 55, at 28,500 gallon mark it dropped below the suggested 0.25 ppm spike. However, 0.2ppm Zn for up to 80,000 gallons. Indicating 950g/in<sup>3</sup> is conservative number for bacteriostatic properties to be maintained.

