

# Water Treatment Cartridge Technology

The control of specific dissolved contaminants is essential in a range of applications, from manufacturing make-up water to point of use. Filerder has a variety of technologies which together protect processes, equipment and improve personal wellbeing.

## Ion Exchange Technology

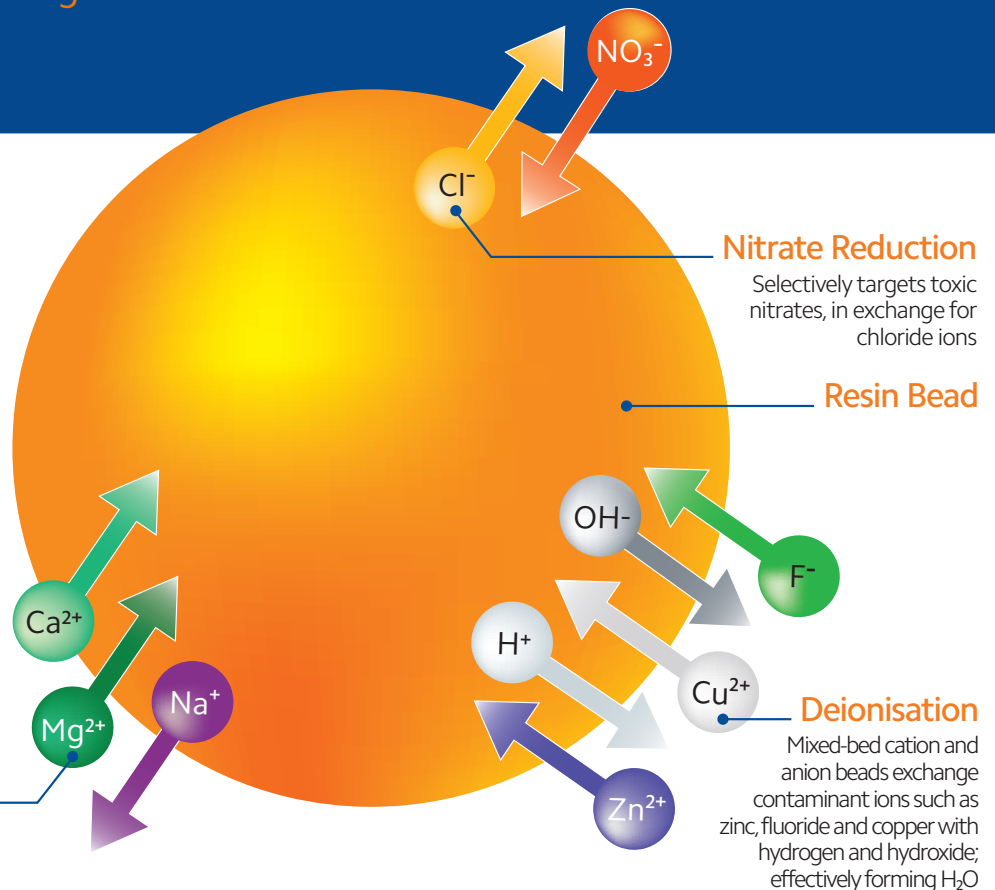
There are two primary methods of water treatment, in which resin beads are employed to achieve ion exchange and ultimately, purified water.

In the first, resin beads will exchange either positive ions (cations) or negative ions (anions) to achieve purified water, as illustrated by softening or nitrate reduction.

In contrast, mixed-bed resin will remove both positive and negatively charged ions in exchange for water forming molecules, as in the example of deionisation.

### Softening

Cation based resin exchanges calcium and magnesium for sodium ions



## Water Treatment Solutions

**Softening Resin** has been developed to reduce deposit-forming minerals, such as calcium and magnesium, protecting varied equipment including steam ovens, commercial boilers and reverse osmosis systems. **Deionisation (DI)** is the process typically employed as the final polishing stage in a water treatment system. DI resin reduces dissolved ions, thus creating a source of pure deionised water suitable for pharmaceutical, printed circuit board

and other critical applications. **Heavy Metals** can have harmful effects on health as well as interfering with sensitive manufacturing processes. Heavy metal reduction resin specifically targets these contaminants, effectively reducing levels to meet drinking water standards. **Nitrate Removal** is essential in rural or agricultural areas, and considered a serious health problem for infants and the elderly. The selective anion resin reduces nitrate levels by exchanging them for harmless chloride

ions, meeting drinking water standards. **Iron Reduction** can be applied to drinking water applications. The proprietary media used specifically targets dissolved iron to improve taste and prevent orange-brown stains in sinks, toilets and other plumbing fixtures. **Scale Inhibiting** crystals are an alternative solution to ion-exchange treatment, preventing hardness forming ions from precipitating and the build-up of deposits on sanitary ware, food service equipment and drink vending machines.



# Iron Reduction

## RFFE

RFFE cartridges combat offensive taste and staining of taps, sinks, clothes and plumbing usually associated with iron and manganese, with typical reduction levels of up to 90%. The RFFE should be part of a three-stage system, including a SPECTRUM AMS pre-filter and a CFB-Plus Carbon post filter, trapping precipitated iron post RFFE treatment.

### Key Features

- Reduces the possibility of damage to pipework
- Large diameter configurations for higher flow rates

### Typical Applications

- Borehole
- Private water supply
- Pre-existing contaminated pipework

### Media Type

Manganese activated zeolite

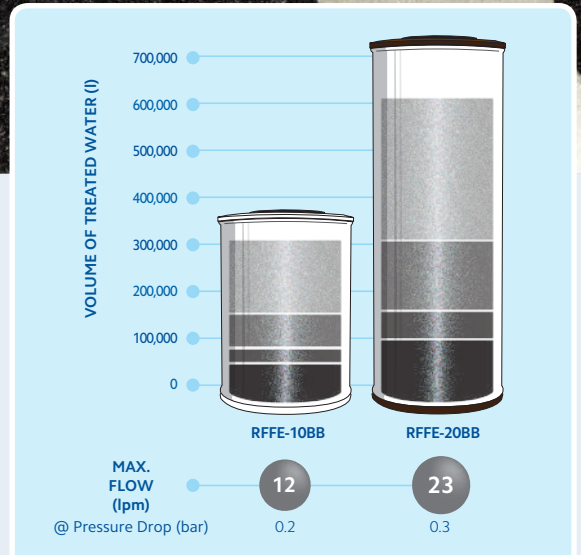
### Configurations

Length (")

10 20

Diameter

Large = BB



Iron (mg/l)	Volume of Treated Water (l)	
	RFFE-10BB	RFFE-20BB
0.5	302,800	605,600
1	151,400	302,800
2	75,700	151,400
3	49,200	98,400

### Specification

Operating Temperature Range: 4-52°C

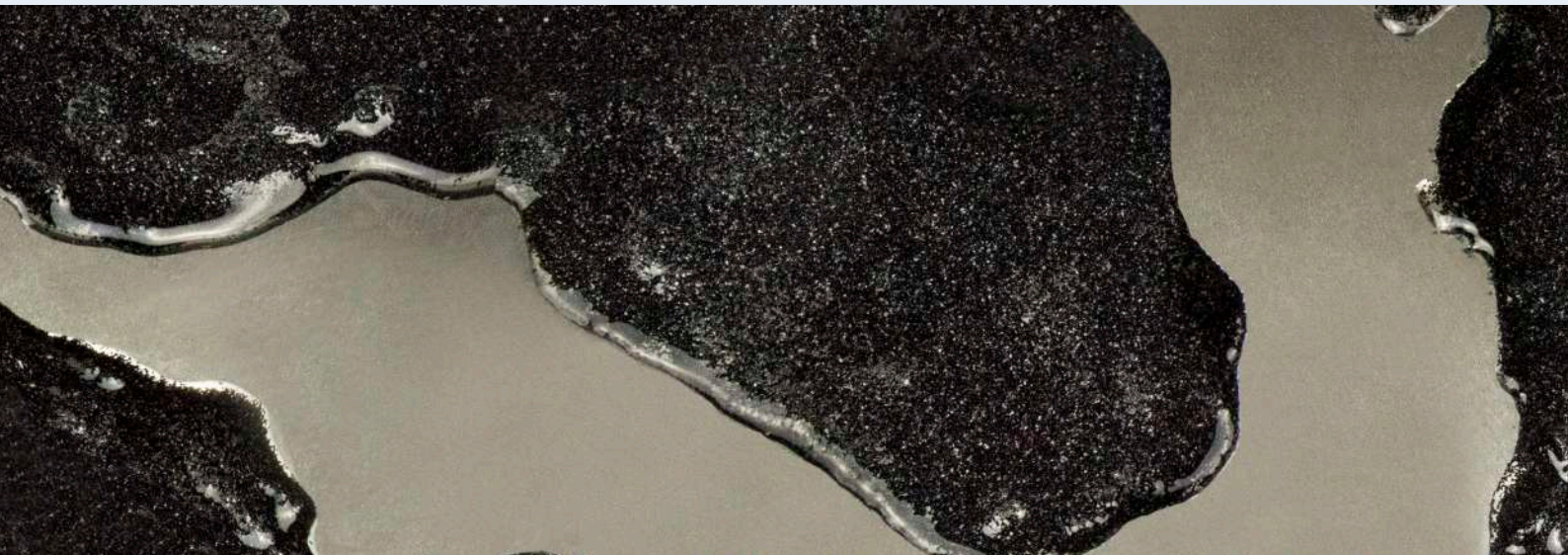
Max. Operating Parameters:

Iron 3mg/l	Hydrogen Sulphide None
Silica 100 mg/l	Iron Bacteria None
Manganese 1mg/l	Minimum PH 7

## Part Number, Box Quantity & Weight

Code	Length	Box Qty	Box Weight (kg)
RFFE	10	8	13
	20	4	15

e.g. RFFE-10BB



# RFFE Setup

Forming part of a three stage system.



EFHS-PK-3-10-1LD



AMS-5-93/4BB RFFE10-BB CFB-Plus10BB

## AMS Pre-Filter

A SPECTRUM AMS filter provides effective sediment filtration whereby a silver ion antimicrobial additive inhibits the growth of bacteria and microbes within the filter, whilst also preventing premature blocking of the RFFE cartridge from bio film build up. Where water supplies are chlorinated or anti-microbial properties are not required, a SPECTRUM PSP sediment filter can be chosen as an alternative option.

## RFFE Cartridge

RFFE cartridges solve the complex issue of iron and manganese reducing dissolved iron from water, eliminating offensive taste and staining of taps, sinks and plumbing. Typical reduction levels are 70-90% and the RFFE is safe for drinking water applications. It is recommended that the RFFE is part of a three stage filter solution within a SPECTRUM EFHS housing system.



EFHS-PK-3-20-1LD



AMS-5-20BB RFFE20-BB CFB-Plus20BB

## CFB-Plus Post-Filter

A fibredyne carbon cartridge, such as the Pentair CFB-Plus, should be used post RFFE to trap any remaining precipitates. The dual purposed sediment and chlorine cartridge filters particulate whilst also improving chlorine, taste and odour.

## Flow Rate & Lifespan

Lifespan data provided is based upon Pentair internal testing with an RFFE-20BB.

Iron Level (mg/l)	Maximum Flow Rate (LPM)	Capacity	Approximate Life of System Based on average household use (days)		
			One Person 280 (LPD)	Two People 475 (LPD)	Four People 950 (LPD)
3	11	98,400	416	208	104
2	15	151,400	640	320	160
1	19	302,800	1,280	640	320
0.5	23	605,600	2,560	1,280	640