

Iron and Manganese Removal Filters

Iron and manganese are common in ground water supplies. Excess iron and/or manganese levels usually results in the following:

- **Discoloured water**
- **Red, brown or black stains on laundry, fixtures or other surfaces in contact with water.**
- **Metallic taste in beverages.**
- **Rust build-up in water heaters and cooling systems.**

Whilst the water supplied by the ground water source is often clear and colour-less, it usually becomes discoloured once it comes into contact with air, causing iron and manganese to precipitate as rust.

What is an iron removal filter system?

There are a number of ways of removing iron and manganese from water supplies. The key to the removal process is oxidation of the iron and manganese ions, effectively converting them to rust particles and allowing them to be filtered out using a filtration process.

Uses are, an efficient and economical method of removing dissolved iron and manganese compounds from raw water supplies, by combining a manganese greensand and multimedia sand filter with a chemical-free oxidation column. This allows us to treat large volumes of water far quicker than any competitive iron removal system, making our equipment both smaller and more cost-effective. There are also no chemicals required for the operation of an approved iron removal filter system, further reducing costs and making the system suited for use in remote areas.

Larger models also have the ability to provide disinfection of the treated water with a limited residual effect.

Iron removal filter systems - Standard Features

- Manual or automatic operation options.
- Durable GRP or mild steel tank construction for corrosion resistance and high pressure operation.
- UV resistant materials suitable for outdoor operation.
- Simple inline configuration for ease of installation and maintenance.
- Range of filter systems to suit household, commercial and industrial applications.

Iron removal Filter Options

- Automatic backwash controls.
- Duplex kit to eliminate raw water bypass and system downtime.
- Pressure differential backwash on automatic models.



Iron removal filter system specifications

Model	Flow Rates			Inlet/Outlet Ports
	Service Flow Rates		Backwash	
	Minimum flow (m ³ /hr)	Maximum flow (m ³ /hr)	Flow (m ³ /hr)	
FE-B08	0.2	0.3	0.7	32 mm
FE-B10	0.3	0.4	1.0	32 mm
FE-B14	0.5	0.8	2.0	32 mm
FE-B20	1.0	1.7	4.3	50 mm
FE-B24	2.3	3.8	9.5	50 mm
FE-B30	3.3	5.5	13.8	65 mm
FE-B36	5.8	9.8	24.5	65 mm

Operating pressure: 200-600 kPa

Power supply (automatic units): 220 VAC 50Hz

Temperature range (water temp): 5-35°C

Iron removal filters are capable of 10-micron effluent water quality under normal operating conditions. Designs are based on a maximum feed water iron concentration of 2 ppm, and a manganese concentration of less than 0.5ppm.

Note: In certain situations where iron and/or manganese concentrations are higher than those specified above, iron removal filters can be used in conjunction with ozone, chlorine or aeration equipment.

Iron Removal Filter Design Considerations

In order to accurately size an iron removal filter for your residential, commercial or industrial application, we will need to know the following:

- The amount of water you expect to use per 24-hour period.
- Your peak water demand.
- Operating hours per day.
- Your water pressure.
- The suspended solids content, turbidity, pH, iron and manganese levels of your water.
- What you plan to use the filtered water for.

BIRM/MN02 Filtration Media



Iron – Level & Treatment	
Maximum Contaminant Level (MCL)	0.3 mg/L
Potential Health Effects (from ingestion of water)	Staining of laundry, plumbing, appliances
Potential Source of Contaminant	Natural deposits
Applicable NSF/ANSI Standard(s)	Standard 42
Water Treatment Technologies Certified by NSF for Reduction of this Contaminant	Ion Exchange & Adsorption (i.e. carbon/charcoal)
Special Notes	None



Typical Manual or Automatic MnO2 Iron Removal Unit & System in operation.

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