

ARSENIC REDUCTION FILTERS

Bayoxide

Arsenic is found in waters in many parts of the UK and mainland Europe, Asia and the USA. The arsenic comes from the underground rocks through which the ground water percolates. The legal limit for arsenic has recently been reduced to 10µg/l. The arsenic can be removed with specially formulated filter media.

Why remove it?

Arsenic compounds are toxic even at low levels. They can cause skin and liver disorders, circulatory problems and can be life threatening. The European Union has looked at the Arsenic levels in water and reduced the allowable limit to below 10µg/l (from 50µg/l). Arsenic is present in underground rocks and percolates in to the ground water and then up through boreholes or springs into the water supply.

Bayoxide Arsenic Removal Media

Sewer Trent Water worked with Bayer As to develop an arsenic removal media; Bayoxide. This dry crystalline media is similar to amorphous iron hydroxide but specifically formulated to give a high arsenic removal capacity. The media is strong, reliable and easy to handle. Bayoxide is regulation 31 approved for use in both Municipal and Private water use.

These systems give long operating cycles and low operating costs. The exhausted media is non-hazardous and can generally be sent to landfill (local conditions do apply).

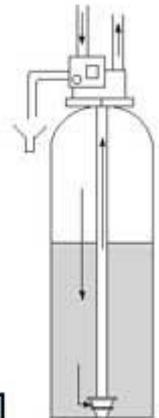
Service flow: 15-18m/h
Backwash flow 25m/hr
Backwash frequency: 14-28 days

Requested raw water conditions
Iron: <200µg/l
pH: 6.5 - 8.5
Manganese: <50µg/l
SiO₂: <40mg/l
Suspended solids: < 10mg/l
PO₄: <200µg/l
Water outside the above must be pre treated.

How does it work?

Water flows into the valve at the top, down through the media and then up through the 'riser' tube in the middle of the vessel. As the water travels through the media the arsenic is removed and held within the system. There are timer options that can be set to automatically self-clean (backwash) and wash away any of the accumulated sediment but hold on to the accumulated arsenic. When the media becomes full it can easily be replaced with fresh media (typically every couple of years or so depending on arsenic levels and local conditions).

Arsenic filters can also be used in conjunction with other filters such as sand filters, if the water has high turbidity, iron and manganese reducing filters or pH correction filters if the pH of the water very low.



Bayoxide - pH 6.8 to 9.5									
Vessel size	1044	1354	1465	1665	1865	2160	2469	3072	3672
Valve Type	263-740	263-740	263-740	263-740	263-740	Mag 293	Mag 293	Mag 293	Mag 293
Service flow rate - m ³ /hr	1	1.7	2	2.6	3.4	4.4	6	9	12
for a family of 4 need media change every*	4 years	8 years							
Volume treated at 50µg Arsenic (m ³)	1500	3000	4500	6000	7500	10000	15000	23000	30000
Volume of Bayoxide (15 kg bags)	1	2	3	4	5	7	10	15	20
Inlet/out	1"	1"	1"	1"	1"	2"	2"	2"	2"
Drain	3/4"	3/4"	3/4"	3/4"	3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Backwash (m ³ /hr)	1.1	2	2.3	3.4	3.9	5.7	6.8	11.4	17.1
Footprint									
Width (mm)	269	341	369	406	510	552	610	770	927
Depth (mm)	390	390	390	406	510	579	640	770	927
Height (mm)	1334	1548	1870	1875	1997	2212	2171	2341	2441

*assumes 50µg Arsenic, low level phosphates, pH over 7, and no other heavy metals