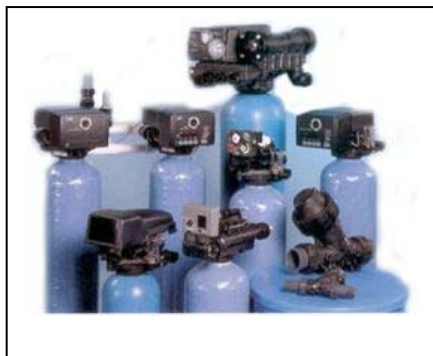


Carbon Filters (GAC)



Granular Activated Carbon (GAC) filters are an excellent choice for removal of chlorine, taste and odour, or organics in water. There are many different variations but most are either coconut coal or wood based.



What is granular activated carbon (GAC)?

Coconut husks, coal or bone are heat treated in the absence of oxygen to produce “activated” carbon. Granular just means the shapes produced are irregular particles in sizes ranging from 0.2 to 5mm (ideal sizes for water treatment). The treatment is designed to produce a vast structure of pores creating a massive surface area for adsorption.

How does GAC work?

GAC works by absorbing the soluble pollutants onto its surface and holding them. Because it has such a massive surface area the amount of absorption is probably one of the greatest of any natural man made material available. Eventually all the pores are filled and the carbon will need to be replaced. As the contaminants are absorbed onto the carbon backwashing the filters is a good idea as the pollutants are held firm but the carbon can be rebled stopping channelling.

What will GAC remove ?

Chlorine, taste
 Odours, organics
 Colour, ozone

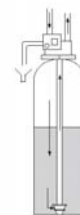
Which type of GAC do I need ?

By choosing the type of GAC coconut, coal wood etc and by treating it in suitably different ways its performance can be optimised for particular jobs. 12 x 30 coconut shell is often used in systems for dechlorination, organic colour removal and protection of RO membranes. Coal based GAC is often used for removing larger chain organic molecules or where high hardness and mechanical strength are need. If the carbon is treated with silver it acts as a natural bactericide and helps reduce bacteria although this is expensive. Acid washing carbon increases the purity, reduces the ash content and is particularly suited for ultrapure water treatment systems.

How does Ion exchange colour removal work?

Water flows into the valve at the top, down through the carbon and then up through the ‘riser’ tube in the middle of the vessel. As the water travels through the media the contaminants are absorbed onto the carbon. There are timer options that can be set to automatically self clean (backwash) and wash away any of the accumulated particulates and rebled the carbon to stop channelling.

Contact time is often important and for dechlorination a time of 5 minutes is normally necessary.



GAC Sizing

Vessel size	835	1248	1354	1465	1665	1865	2160	2469	3072	3672	4278	4882	55140
Inlet & outlet con.	1"	1"	1"	1"	1"	1"	2"	2"	2"	2"	2"	2"	3"
Drain connection	3/4"	3/4"	3/4"	3/4"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"	2"	3"
Service flow rate – m ³ /h	0.3	0.6	0.9	1.2	1.5	2.1	2.7	3.6	6.0	8.4	10.0	12.5	25.0
Backwash m ³ /h	0.5	0.9	0.9	1.2	1.5/	2.2	2.6	3.4	5.3	7.7	10.5	13.7	18.8
litres treated at 1 ppm	2000	4000	6000	8000	10,000	14,000	18,000	24,000	40,000	56,000	67,000	83,000	167,000
Approx Footprintcm	89x20	122x31	137x33	165x36	165x41	165x46	152x53	175x61	183x76	183x91	198x107	208x122	356x140

Crystal Right, Birm, Manganese dioxide, and Greensand kits are also available as are other medias such as pH correction, sand, carbon etc.