



# Water Treatment

## Carbon and Media Cartridges

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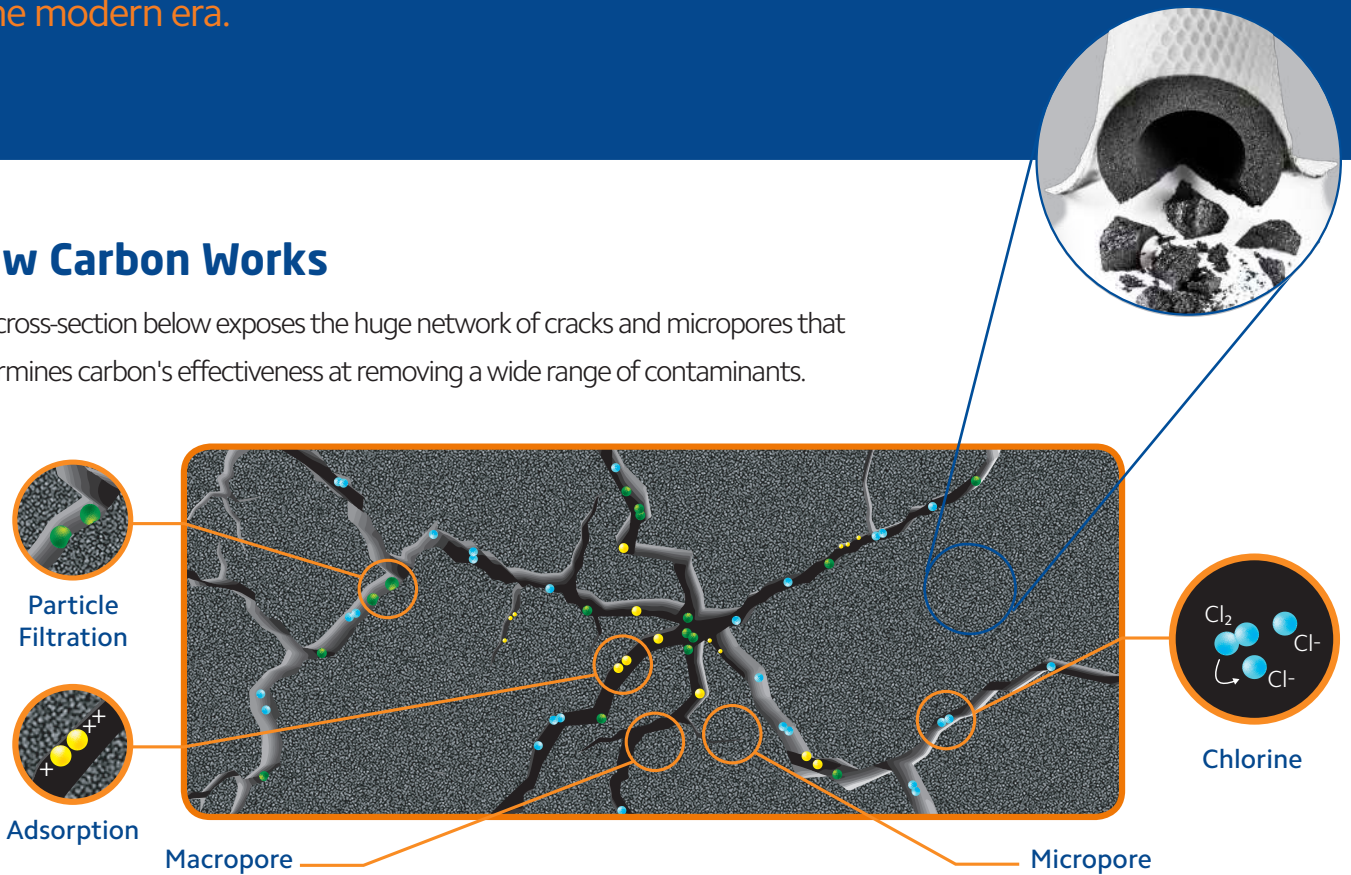


# Carbon Technology

Utilised for several hundred years, carbon is considered one of the oldest means of water purification. Although impossible to trace the exact date and time, there is evidence of its usage and importance throughout history, from the ancient world to the modern era.

## How Carbon Works

The cross-section below exposes the huge network of cracks and micropores that determines carbon's effectiveness at removing a wide range of contaminants.



### Particle Filtration Sediment and Suspended Solids

Every carbon block cartridge has a given micron rating to indicate the physical size of suspended particulate that can be removed by the cartridge. To prevent premature sediment blockage before the chlorine capacity of the carbon has been exhausted, pre-filtration, such as the SPECTRUM SSP or PSP, is recommended to prolong the life of the cartridge.

### Adsorption Organics and Heavy Metals

Carbon is a naturally adsorptive media, removing dissolved contaminants from a solution. When heated to 870°C, during the activation process, millions of tiny micropores are created throughout the structure of the cartridge, attracting large organic molecules and heavy metals to the surface.

### Chemical Reaction Chlorine and Chloramine

Through chemical interactions with the activated carbon, reactive chlorine molecules are converted to less reactive chloride ions. Chloramine can also be removed through this process although the reaction occurs at a much slower rate. Speciality cartridges such as the SPECTRUM PCB have been specifically designed to effectively target chloramine.

## Carbon Flow Rate

The longer water comes into contact with carbon, generally the more effective the treatment process will be, whether removing organics, heavy metals, chlorine or chloramine. Even a small increase over the recommended flowrate can cause dramatic decreases in carbon treatment's effectiveness. Therefore it is imperative to size a carbon treatment system properly, ensuring that the flowrate allows enough contact time to remove the undesired contaminants. The recommended flowrate for each cartridge is shown on the product page (as illustrated, right).

		@ Flow Rate (LPM)	
		3.8	7.6
Max. Operating Temp. 52°C		7.6	7.6
Max. Operating Pressure 2.5 bar		7.6	7.6
SCB Properties			
Capacity (L)	Chlorine Reduction (L) @ 0.2ppm	Pressure Drop (Bar) @	Flow Rate (LPM)
113,750		0.3	3.8
227,500		0.3	7.6
356,850		0.4	7.6
713,700		0.4	15.1
*Chlorine capacity using 2mg/l free available chlorine at 0.5mg/l breakthrough			

# Carbon's Effectiveness at Removing...

## Excellent

- Chloramine
- Chlorine
- Dyes
- Glycols
- Herbicides
- Hydrogen Peroxide
- Insecticides
- Iodine
- Odours
- Oil-dissolved
- PCBs
- Pesticides
- Sodium Hypochlorite
- Taste
- THMs

## Good

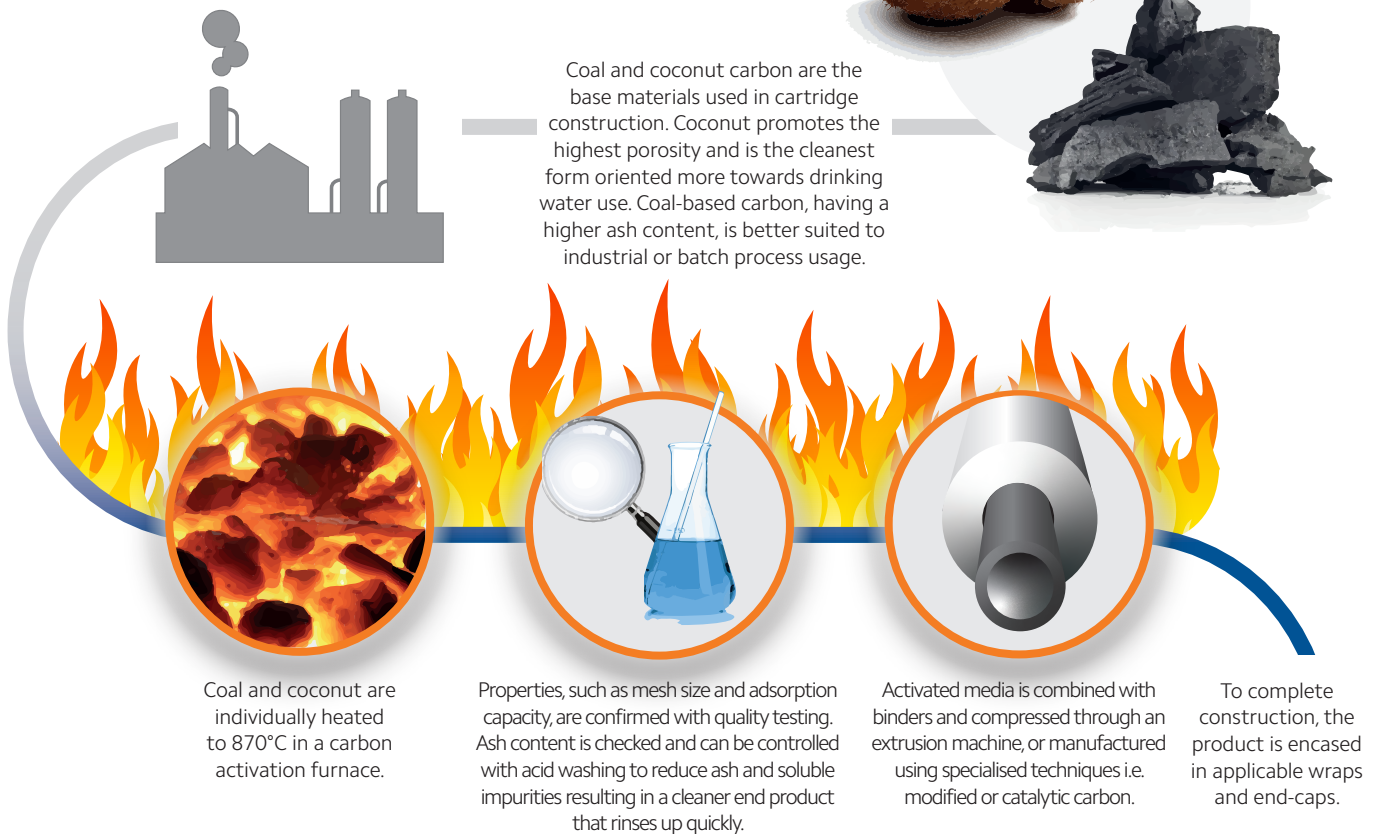
- Organic Acids
- Organic Salts
- Potassium Permanganate
- Solvents
- Sulphonated Oils
- Tannins

## Fair

- Acetic Acid
- Detergents
- Heavy Metals
- Hydrogen Sulfide
- Plating Wastes
- Soap

## Carbon Cartridge Construction

From raw material, through to activation and end product.



**Modified Carbon Block**  
e.g. CFB-Plus

An advanced technology, Fibredyne combines dissolved contaminant removal with excellent sediment reduction. Uses powdered carbon for effective chlorine reduction.



**Powder Carbon Block**  
e.g. SCB & PCB

Finer carbon mesh size increases surface area, ensuring highly effective removal of small contaminants such as chlorine. Perfect for drinking water applications.



**Granular Carbon Block**  
e.g. CB & ECB

Traditional carbon technology, more effective at removing large molecules such as odours. Suitable for commercial and industrial applications.




For **Chlorine**  
and **Organics**

Chlorine Reduction  
Start - End of Life (%)  
**95-75**

Total Chlorine  
Capacity (mg)  
**16,625**

Typical Life in UK  
Water (L)\*  
**83,125**

Performance based on 10" cartridge. \*Life in UK water based on free chlorine concentration of 0.2mg/l.

## 870 Carbon Wrap - SCW

### Traditional Dual-Purpose Carbon

Developed as the direct replacement to the Pentair C1, the SPECTRUM SCW is adept at removing high levels of sediment and contaminants. Employing traditional carbon wrap technology to reduce odours, remove chlorine, water

pigmentation and other volatile organic compounds, the SCW combines the advantages of a high-dirt loading depth cartridge and adsorption capabilities of granular activated carbon; an ideal combination to treat drinking water.

## Key Features

- Dual sediment and chlorine reduction
- Low pressure drop
- 5µm nominal rating hence pre-filtration is generally not required

## Typical Applications

- Drinking water
- General purpose chlorine taste and odour reduction

## Configurations

### Micron (µm)

5

### Length (")

9¾

20

### Diameter

Standard

Large = BB

## Materials of Construction

### Carbon Type

Carbon Impregnated Cellulose

### Netting

Polyethylene

### End-cap

Vinyl Plastisol

### Core

Polypropylene

## Specification

Max. Operating Temperature  
60°C

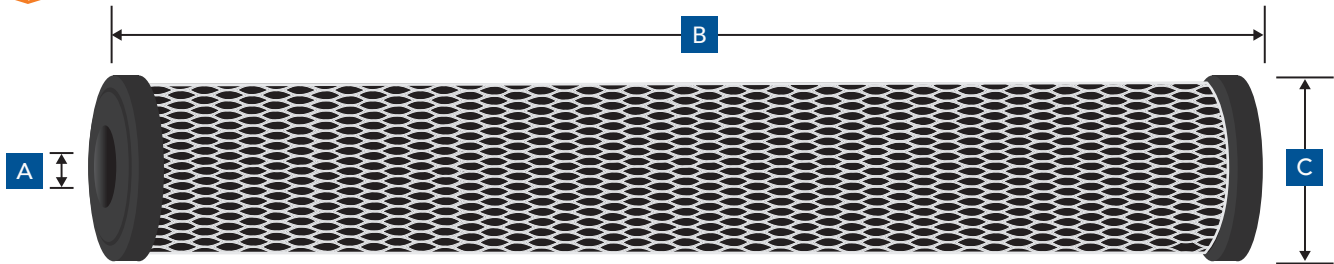
Max. Operating Pressure Differential  
2 bar

## SCW Properties

Length (")	Chlorine Reduction (L) @ 2mg/l *	Chlorine Reduction (L) @ 0.2mg/l **	Pressure Drop (Bar) @	Flow Rate (LPM)
9¾	9,500	83,125	0.2	3.8
20	19,000	166,250	0.2	7.6
9¾BB	17,000	148,750	0.2	7.6
20BB	34,000	297,500	0.2	15.1

\*Chlorine capacity using 2mg/l free available chlorine at 0.5mg/l breakthrough  
\*\*Calculated chlorine capacity using 0.2mg/l free available chlorine at 0.05mg/l breakthrough

## Dimensions & Packaging



Length (")	Dimensions (mm)		
	A	B	C
9¾	28	248	65
20	28	508	65
9¾BB	28	248	115
20BB	28	508	115

Packaging	
Box Qty	Box Weight (kg)
15	4
15	6
4	4
4	7

## Part Number

Code	Micron	Length
SCW	5	9¾, 20
		9¾BB, 20BB

e.g. SCW-5-20