

THE DISCARB CELL

Carbon filtration is ideal for removing unpleasant or even dangerous odours and gases from a wide variety of sources. The ever increasing awareness of this problem from public health authorities and environmentalists has resulted in an increase in the use of the unique properties of activated carbon filtration. Carbon will adsorb chemical molecules in the airstream in varying degrees according to the type of contaminant and the period of time the air remains resident in the carbon.

Activated Carbon in its loose granular form can present problems as there is a tendency for the granules to abrade one another. This causes both settlement of the carbon creating potential bypass voids and produces carbon dust that can be reentrained into the air-stream. The unique bonding method eradicates these problems by producing a solid and stable biscuit of consistent quality and dimensional stability that produces an even resistance. Once formed the biscuits are bonded in 'V' formation into a rigid galvanised steel casing.

Typical applications for carbon include:

- incoming air in industrial plants
- airports
- art galleries etc. or
- outgoing air in kitchens
- industrial processes
- sewage plants etc.



Spec sheet overleaf >

OC Innovations – THE DISCARB CELL (SPECIFICATIONS)

Operational Criteria

In order to ensure a carbon filter operates satisfactorily, certain criteria need to be met which do not apply to particulate filters. The most important aspect is the "dwell time" (the period of time the air is in contact with the carbon). The minimum dwell time used is 0.1 seconds and this is shown below as maximum permissible airflow. The dwell time may vary considerably according to the contaminant to be removed. As far as possible water vapour should be eradicated from the air-stream to eliminate condensation within the filter that could cause porous blockage causing a dramatic increase in resistance. This also applies to loose carbon. However, humidity levels as high as 80% RH are normally acceptable providing no interstitial condensation takes place.

Air-stream temperatures entering the filter in excess of 40°C should be avoided. In the case of anticipating temperatures above this level steps should be taken to reduce the temperature to an acceptable level by fresh air bleed, cooling coil or heat exchanger. In catering and food preparation applications, smoke and grease must be removed from the air-stream prior to entry into the carbon.

Performance

Due to the complex nature of adsorption, carbon filters are generally designed to suit the application, however, the following information is given as an indication of the physical requirements for its use. An extensive range of standard sizes are available, some of the more common are shown below. Non-standard sizes are available to order.

Typical Discarb Size (HxWxD)	Max Permissible Airflow (m ³ /hr) at 0.1 sec dwell time	Resistance at 0.1 sec (pa)	Filter Weight - kg
594x594x298	1900	98	42
594x594x451	2890	130	65
594x594x597	3825	195	85
594x297x597	1900	195	48
451x451x597	1955	180	42
298x298x298	476	98	10

Maximum Temperature: 40°C

Maximum Humidity: 80% RH